Road Width Data Field Descriptions

The VTrans Mapping Section has developed and maintains a comprehensive road width database for the Federal Aid Highway network to aid as part of an effort in meeting the Highway Performance Monitoring System (HPMS) and the Minimum Inventory of Roadway Elements (MIRE) requirements. Road width data was initially field collected through manual methods and logged on the Route Log straight line diagrams. This information provided a point of beginning for this dataset and has been kept current using project plans, field verification and the use of remotely sensed information from roadway inventory systems. The road width data is edited in an event table and nightly dynamically segmented on the linear reference system to put the data in spatial context.

Road Width

1. **OBJECTID** (OID)

   System defined unique object identifier.

2. **TWN_LR** (String 15)

   Town-based (TWN) linear reference code used to generate the town-based LRM data layer. The TWN measures reset at each town boundary for a route and represent the measures solely within an individual municipality, whereas the End-to-End (ETE) linear reference method is cumulative mileage for an entire route. The TWN_LR is related to the ETE_LR field but also includes the CTCODE. For example, the TWN_LR value for VT Route 12 in Montpelier is V012-1211 (ETE_LR = V012, CTCODE = 1211). The TWN measures have a relationship to the green placard reference markers on the highway network that include the 4 digit route code, the 4 digit CTCODE and a 4 digit measurement with an implied decimal after the second digit.

3. **TWN_FST** (Integer 4)

   Town-based linear reference method – from (begin) station in feet.

4. **TWN_TST** (Integer 4)

   Town-based linear reference method – to (end) station in feet.

5. **TWN_FMM** (Double 8)

Town-based linear reference method – from (begin) mileage. Start measure for the segment in miles within a specific town. The town based LRM re-zeros at each town boundary. Typically rounded to the nearest 1/1000th of a mile. Measures are based on official mileage and are typically 3D measures from on the ground measurements with a distance measuring instrument (DMI) or other sources and are based on measures that Mapping Section has on record.

6. **TWN_TMM** (Double 8)

Town-based linear reference method – to (end) mileage. End measure for the segment in miles. Typically rounded to the nearest 1/1000th of a mile. Measures are based on official mileage and are typically 3D measures from on the ground measurements with a distance measuring instrument (DMI) or other sources and are based on measures that Mapping Section has on record.

7. **ETE_LR** (String 11)

End-to-End linear reference code used to generate the end-to-end LRM data layer. It is used to identify "routed" highways and is assigned by VTrans. The ETE_LR can be broken down into the following components (or redefined items):

-   Route Type
       Field values:
           A = Alternate Route
           B = Business Route
           G = Federal Land Highway
           I = Interstate
           N = Named State Highway
           S = Special Route: a town highway that is a major or minor collector, or is an
               urban route
           U = US Route
           V = VT Signed Route

-   Route Number
       The numeric portion of the highway number (three digits), right justified in characters 2-4. For Named State Highways, Major Collectors, and Urban Collectors, four-digit codes are used (in characters 2 -5).

-   Route # Modifier
       Used for a letter or special modifier, if needed. Named State Highways, Major Collectors, and Urban Collectors retain their full four-digit codes in common usage. For these, the Highway Number and Modifier are combined to form a four-digit highway number. For the three separate sections of Alternate US 5, the modifiers (1 to 3) are:

A0051 = Alternate US 5, St. Johnsbury
A0052 = Alternate US 5, Newport
A0053 = Alternate US 5, Derby
Valid Highway # Modifier characters include:
[letter] = highway letter (e.g., the 'A' in Highway 2A)
[digit] = special cases (e.g., Alternate US 5); digit for a Named State
    Highway, Major, or Urban Collector
[blank] = cases where no modifier is needed, and no subsequent
    components are needed for the ETE_LR
[dash] = cases where no modifier is needed but other ETE_LR
components
    follow

- Direction
The direction character is included only if the highway is divided. However,
it is NOT used for northbound or eastbound mainline routes. The direction
character is used only with northbound or eastbound approaches,
connectors, jughandles, ramps, and spurs.
Field values:
' ' = [blank] = undivided route with no subsequent ETE_LR
    components
E = eastbound (for divided routes)
N = northbound (for divided routes)
S = southbound (for divided routes)
W = westbound (for divided routes)
Examples:
I089 = I-89, northbound lane
I089-S = I-89, southbound lane
U002 = US-2, undivided portions
U002-W = US-2, westbound portions (where divided)
V003-NA020 = VT 3, approach 20 (approaches generally use the
    same direction as the parent road)

- Subtype
This field describes sections of road that are not on the main line yet have
defined lengths recognized by the Agency.
Field values:
' ' = [blank] = no subtype
A = approach
C = connector
F = facilities/rest areas, turnouts, access roads
J = jughandle
R = ramp
S = spur

- Numeric ID
The ID number represents different things according to the subtype.
Approaches and jughandles are numbered (initially) in ascending order

from the start of the parent route in the primary direction. Numbers will increment by multiples of ten (ex: 10, 20, 30, 40, etc.). Gaps are left between numbers for future construction. For ramps and spurs, the number refers to the exit number for the parent route. A few ramps exit at locations that have no exit number; these have zeros in this field. Where no ID is required in this field, blanks are used.

- Alpha ID
This letter identifies ramps and spurs, as taken from the route logs (except for two ramps at I-91's Exit 2, which were named A/B and C/D on the route logs. These have been renamed 'E' and 'F', respectively.) Where no ID is required in this field, a blank space is used.
Examples:
U004 = US-4 eastbound, divided highway
U004-W = US-4 westbound, divided highway
V100-NA002 = VT-100, Approach #2
B004-WJ001 = Business Route US-4 westbound, Jughandle #1
I089-SR009A = I-89 southbound, Exit 9 ramp

8. **ETE_FMM (Double 8)**

End to End linear reference method (LRM) – from (begin) mileage. Start measure for the segment in miles for the end-to-end LRM that is cumulative mileage or the entire route. Typically rounded to the nearest 1/1000th of a mile. Measures are based on official mileage and are typically 3D measures from on the ground measurements with a distance measuring instrument (DMI) or other sources and are based on measures that Mapping Section has on record.

9. **ETE_TMM (Double 8)**

End to End linear reference method – to (end) mileage. End measure for the segment in miles. Typically rounded to the nearest 1/1000th of a mile. Measures are based on official mileage and are typically 3D measures from on the ground measurements with a distance measuring instrument (DMI) or other sources and are based on measures that Mapping Section has on record.

10. **Through_Lanes (Integer 4)**

Number of lanes dedicated to through traffic. Does not include turn lanes, climbing lanes, etc.

https://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/page05.cfm#toc249159692

11. **Median_Type (Integer 4)**

Type of median as defined in the HPMS Field Manual.

1 – None - No median or unprotected area less than 4 feet wide.

2 – Unprotected - Median exists with a width of 4 feet or more.

3 - Curbed - Barrier or mountable curbs with a minimum height of 4 inches.

4 - Positive Barrier- unspecified - Prevents vehicles from crossing median.

5 - Positive Barrier – flexible   Considerable deflection upon impact.

6 - Positive Barrier – semi-rigid   Some deflection upon impact.

7 - Positive Barrier – rigid   No deflection upon impact.

These definitions are summarized from AASHTO *Policy on Geometric Design of Highways and Streets* 2004.

https://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/page05.cfm#toc249159721

12. **Median Width (Double 8)**

The existing width of the median as defined in the HPMS Field Manual.

https://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/page05.cfm#toc249159722

13. **Shoulder_Type (Integer 4)**

Type of shoulder as defined in the HPMS Field Manual.

1 - None

2 - Surfaced shoulder exists – bituminous concrete (AC)

3 - Surfaced shoulder exists – Portland Cement Concrete surface (PCC)

4 - Stabilized shoulder exists (stabilized gravel or other granular material with or without admixture)

5 - Combination shoulder exists (shoulder width has two or more surface types; e.g., part of the shoulder width is surfaced and a part of the width is earth)

6 - Earth shoulder exists

7 - Barrier curb exists; no shoulder in front of curb

14. Shoulder_Width_R (Double 8)

Width in feet of the shoulder on the right side of the highway, based on inventory direction of the highway.

15. Shoulder_Width_L (Double 8)

Width in feet of the shoulder on the left side of the highway, based on inventory direction of the highway.

16. Width_Lane1_RightOfCenterline (Double 8)

Width in feet of the lane that is just to the right of the centerline, as mapped in the primary inventory direction.

17. Width_Lane2_RightOfCenterline (Double 8)

Width in feet of the second lane to the right of the centerline, as mapped in the primary inventory direction.

18. Width_Lane3_RightOfCenterline (Double 8)

Width in feet of the third lane to the right of the centerline, as mapped in the primary inventory direction.

19. Width_Lane1_LeftOfCenterline (Double 8)

Width in feet of the lane that is just to the left of the centerline, as mapped in the primary inventory direction.

20. Width_Lane2_LeftOfCenterline (Double 8)

Width in feet of the second lane to the left of the centerline, as mapped in the primary inventory direction.

21. Width_Lane3_LeftOfCenterline (Double 8)

Width in feet of the third lane to the left of the centerline, as mapped in the primary inventory direction.

22. Roadway (Double 8)

Total width of the highway in feet, including all lanes and shoulders.

23. Travellane (Double 8)

Total width of travel lanes in feet. This measure excludes shoulder width.

24. TOTAL_LANES (Integer 4)

Total number of lanes, including through lanes, turn lanes, climbing lanes, etc.

25. Divided_Section_ (String 10)

Indicator for divided highways with a primary and secondary inventory directions.

Yes – the section is divided.

No – the section is undivided.

26. TURN_LANES_RIGHT (SmallInteger 2)

Number of right turn lanes in the segment.

27. TURN_LANES_LEFT (SmallInteger 2)

Number of left turn lanes in the segment.

28. Turn_Lanes_R (SmallInteger 2)

The presence of right turn lanes at a typical intersection, based on the HPMS Field Manual.

1 - No intersection where a right turning movement is permitted exists on the section.

2 - Turns permitted; multiple exclusive right turning lanes exist. Through movements are prohibited in these lanes. Multiple turning lanes allow for simultaneous turns from all turning lanes.

3 - Turns permitted; a continuous exclusive right turning lane exists from intersection to intersection. Through movements are prohibited in this lane.

4 - Turns permitted; a single exclusive right turning lane exists.

5 - Turns permitted; no exclusive right turning lanes exist.

6 - No right turns are permitted during the peak period.

https://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/page05.cfm#toc505337403

29. **Turn Lanes L (SmallInteger 2)**

The presence of left turn lanes at a typical intersection, based on the HPMS Field Manual.

1 -No intersection where a left turning movement is permitted exists on the section.

2 -Turns permitted; multiple exclusive left turning lanes exist. Through movements are prohibited in these lanes. Multiple turning lanes allow for simultaneous turns from all turning lanes.

3 - Turns permitted; a continuous exclusive left turning lane exists from intersection to intersection. Through movements are prohibited in this lane.

4 - Turns permitted; a single exclusive left turning lane exists.

5 - Turns permitted; no exclusive left turning lanes exist.

6 - No left turns are permitted during the peak period.

https://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/page05.cfm#toc505337403

30. **ProjectYear (SmallInteger 2)**

Project Year that the road width data was derived.

31. ProjectPIN (String 15)

Project Identification Number from where the road width data was derived.

32. UpdateNotes (String 100)

Notes from regarding the updates that were made to the segment.

33. LRS_YEAR (SmallInteger 2)

Linear reference system (LRS) year associated with the segment.

34. LRS_LOCMETH (SmallInteger 2)

Method used for locating the road width segment.

Event relocated using offset distance from known (calibration?) point:

Offset, Calibration point

0 - Measure taken directly from plans

1 - Plans, Intersection

2 - Plans, Bridge

3 - Plans, Town line

4 - Imagery/Arc measure, Intersection

5 - Imagery/Arc measure, Bridge

6 - Imagery/Arc measure, Town line

7 - Inventory, Intersection

8 - Inventory, Bridge

9 - Inventory, Town line

10 - Other offset method

11 - Old Log, Intersection

12 - Old Log, Bridge

13 - Old Log, Town line

Other update methods:

11 - LRS measure (Identify Route Locations tool, or Hatches)

12 - Measure taken from old Route Logs, and verified relative to a nearby intersection with measure matching the old Route Logs

13 – Other

14 - Applied bulk-calculation of LRS update manually (with verification)

20 - Measure corresponds to route log point data layer – rtlogpt

21 - Measure taken from plans directly

35. LRS_UPDACT (String 1)

Update action for the event record in the road width data layer.

A – Record added

M – Moved manually

U – Updated manually due to LRS change

D – Applied delta from LRS updates (automated)

V – Verified location, but not moved

O – Other

R – Route code changed

L – Changed LRS code (same as R)

36. LRS_LOCMETH_NOTES (String 75)

Location method notes.

37. LRS_UPDACT_NOTES (String 75)

Update action notes.

38. LRS_LOC_PLAN_PIN (String 8)

Project identification number for project plan used for LRS location and measures.

39. LRS_LOC_PLAN_YEAR (SmallInteger 2)

Project plan year for project plan used for LRS location.

40. LRS_QC_FLAG (String 10)

LRS quality control flag to use for identifying area of calibration or other LRS issues.

41. LRS_QC_NOTE (String 75)

LRS quality control notes regarding issues in calibration or other identify route issues.

42. TOWN (String 22)

Local Jurisdiction Name. This is MIRE field 6. This is the town, city, gore or grant name is defined in the Geographic Codes Standard.

https://vcgi.vermont.gov/document/vt-geographic-area-codes-standard

43. CREATIONUSER (String 255)

Internal system username for editor tracking of a new feature.

44. DATECREATED (Date 8)

Internal System editor tracking date for created record.

45. LASTUSER (String 255)

Internal system username for editor tracking of a modified feature.

46. DATEMODIFIED (Date 8)

Internal System editor tracking date record was modified.

47. OID_LINK (Integer 4)

ID Link for internal uses