VUEWorks Field Descriptions: Longline Retroreflectivity Layers

October 2025

Field	Description	Table Name
Object ID	Unique identifier assigned to the record. Upon creation of a record, an Object ID will automatically be assigned to it.	**OBJECTID**
Region	Represents the WisDOT Region in which the longline marking is located.	**RTRORFLT_RGN**
County	Represents the County in which the longline marking is located.	**RTRORFLT_CNTY**
Route	Represents the freeway, expressway, or conventional highway on which the marking is installed.	**RTRORFLT_RTE**
Travel Direction	Represents the direction of travel in which the marking's retroreflectivity data was collected.	**RTRORFLT_TRVL_DRCTN**
Segment Location	Indicates the general geographic location of the longline marking in relation to the record's start & end point. Example: "STH 73 to CTH K Loyal".	**RTRORFLT_SGMNT_LOC**
Start Marker	Represents the auto-assigned start value noting where retroreflectivity data for a particular longline marking started. *Note: This value will always = 0.*	**RTRORFLT_STRT_MRKR**
Start Latitude	Represents the GPS coordinates of where a longline marking's retroreflectivity data starts.	**RTRORFLT_STRT_LAT**
Start Longitude	Represents the GPS coordinates of where a longline marking's retroreflectivity data starts.	**RTRORFLT_STRT_LNGT**
End Marker	Represents the auto-assigned end value noting where retroreflectivity data for a particular longline marking ended. *Note: This value will also indicate the length of the segment for which retroreflectivity data was collected. For example, if the End Marker = 4.5, that means the record represents 4.5 miles of retroreflectivity data.* *Note 2: This has no correlation to any of WisDOT's linear referencing or photo imagery systems, it is relative to where you start and stop the retroreflectivity data files (which establish the records).*	**RTRORFLT_END_MRKR**
End Latitude	Represents the GPS coordinates of where a longline marking's retroreflectivity data ends.	**RTRORFLT_END_LAT**
End Longitude	Represents the GPS coordinates of where a longline marking's retroreflectivity data ends.	**RTRORFLT_END_LNGT**
Marking Location	Indicates which longline marking the record represents based on its placement on the road *Note: This will either be Left Edgeline, Right Edgeline, Lane Line or Centerline*.	**RTRORFLT_MRKG_LOC**

Average Retroreflectivity Value	Represents the average of all retroreflectivity values collected for a particular longline marking throughout the segment. *Note: If multiple lines in a given Marking Location are being collected, such as with centerlines, this will represent the average retroreflectivity of both lines.*	**RTRORFLT_AVG_VAL**
Left Retroreflectivity	Represents the average of retroreflectivity values collected for the line furthest from the collection vehicle/meter throughout the segment. *Note 1: If the record represents multiple lines, such as often with centerlines, this will represent the average retroreflectivity of the left line (line furthest from the collection vehicle/meter) based on travel direction.* *Note 2: If only a single line is being collected, such as with Left Edgelines, Right edgelines or Lane Lines, the "Average Retroreflectivity Value" and "Left Retroreflectivity" will be the same.*	**RTRORFLT_AVG_LEFT_VAL**
Right Retroreflectivity	Represents the average of retroreflectivity values collected for the line closest to the collection vehicle/meter throughout the segment. *Note 1: This field will only be populated if the record represents multiple lines, such as often with centerlines. In this case, this value is representative of the right line (line closest to the collection vehicle/meter) based on travel direction.* *Note 2: If only a single line is being collected, such as with Left Edgelines, Right Edgelines or Lane Lines, the "Right Retroreflectivity" field will be blank.*	**RTRORFLT_AVG_RGHT_VAL**
Standard Deviation	Represents the variance of all retroreflectivity values collected for a particular longline marking throughout the segment. *Note: Retroreflectivity data should follow a normal distribution, which means approx. 68% of retroreflectivity values should fall within one standard deviation of the average.*	**RTRORFLT_STD_DEVN**
Stripe Width	Represents the average of all reflective width data collected for a particular longline marking throughout the segment. *Note 1: If the record represents multiple lines, such as often with centerlines, this will represent the average (reflective) stripe width of both lines.* *Note 2: Reflective width is different than painted width. For example, if the record represents a 6" wide longline marking, it's painted width should be 6"; however, the*	**RTRORFLT_STRP_WD**

	bead spread may be less than 6". This is an indication of how well the beads are spread out.	
Left Stripe Width	Represents the average of all reflective width data collected for the line furthest from the collection vehicle/meter throughout the segment. *Note 1: If the record represents multiple lines, such as often with centerlines, this will represent the average reflective stripe width of the left line (line furthest from the collection vehicle/meter) based on travel direction.* *Note 2: If only a single line is being collected, such as with Left Edgelines, Right Edgelines or Lane Lines, the "Stripe Width" and "Left Stripe Width" will be the same.*	**RTRORFLT_LEFT_STRP_WD**
Right Stripe Width	Represents the average of all reflective width data collected for the line closest to the collection vehicle/meter throughout the segment. *Note 1: This field will only be populated if the record represents multiple lines, such as often with centerlines. In this case, this value is representative of the right line (line closest to the collection vehicle/meter) based on travel direction.* *Note 2: If only a single line is being collected, such as with Left Edgelines, Right Edgelines or Lane Lines, the "Right Stripe Width" field will be blank.*	**RTRORFLT_RGHT_STRP_WD**
Presence	Indicates whether part of the longline within the segment is fading or diminishing (paint/epoxy/tape is wearing off). *Note: During data collection, upon observation the collectors can manually note if a line has low presence (subjective value). If noted during collection, this field will be populated = 3. If not noted during collection, this field will be blank (assumption would then be the presence is good).*	**RTRORFLT_PRSN**
Contrast Ratio	Represents how well the longline marking "stands out" compared to the adjacent pavement. *Note: This is represented on a scale of 0-1; the closer to 1, the better contrast.*	**RTRORFLT_CTRST_RO**
RPM	Represents whether any Raised Pavement Markers (RPM) where identified within the segment/area the record was collected. *Note: This field will display either Yes or No (almost all records will = No)*	**RTRORFLT_RPM**
Color	Indicates the color of the marking the record represents (Yellow or White).	**RTRORFLT_EVNT_CD_COLR**
Marking Code	Indicates what type of line the record represents (Dashes, Solid, etc.). *Note: For most records, the Marking Code will be Solid.*	**RTRORFLT_EVNT_CD_MRKG_CD**

Reading	Indicates whether there were valid retroreflectivity readings captured within the segment the record represents. *Note: This will always = Yes.*	**RTRORFLT_EVNT_CD_RDNG**
Reading Type	Indicates whether the record's retroreflectivity data was collected on dry or wet pavement. *Note: All retroreflectivity data, except in special occasions, is collected under dry conditions, so the record will = Dry. The last time WisDOT purposefully collected a subset of wet data was in 2021.*	**RTRORFLT_RDNG_TY**
Special Zone	Notes any special aspects or characteristics that pertain to the longline marking the record represents. *Note: During data collection, the collectors can indicate up to 9 different "Road Conditions" on the file – characteristics that pertain to the longline marking(s) within the given segment. All Road Conditions noted within a segment (on a .csv file) will be populated in this filed.* *Special Zones are:* • *Work Zone* • *Temporary Marking* • *New Marking* • *Contrast* • *Rumbles* • *Chip Seal* • *Turn Lane (Collection is paused)* • *Low Presence* • *Grooved* • *Line Missing*	**RTRORFLT_EVNT_CD_SPCL_ZONE**
Groove	Indicates whether the longline marking is or is not set in a groove (Yes or No). *Note: During data collection, upon observation the collectors can manually note if a line is in a groove. If noted, this field will be populated = Yes; if not noted, this field will be blank.*	**RTRORFLT_GRVE**
Pavement Type	Represents the type of surface on which the marking is applied (Asphalt, Chip Seal, Concrete or Unknown).	**RTRORFLT_PVMT_TY**
Bid Item Number & Description	Indicates what type of longline marking the record represents based on its assigned bid item – represents the material & width of the line.	**RTRORFLT_MRKG_BID_ITM_DESC**
Applied Year	Represents the calendar year in which the marking was most recently installed or retraced.	**RTRORFLT_APD_YR**
Painted Footage	Indicates the total linear footage of material (paint, epoxy, etc.) the record represents.	**RTRORFLT_MRKG_PNT_FT**
Create Date	Indicates the date in which the retroreflectivity data was captured.	**RTRORFLT_CRTE_DT**
File Name	Represents the name of the .csv file that was created during field collection. The .csv file contains the	**RTRORFLT_FLNM**

	retroreflectivity, stripe width, contrast, and presence data of the longline marking, and is used to create retroreflectivity records and populate the above attribute fields. *Note: All raw .csv files are maintained by WisDOT.*	

Notes

- Since 2020, WisDOT has undertaken an annual project to collect mobile retroreflectivity data, along with other associated types of data, on longline markings across the state. This initiative helps WisDOT make data-driven decisions on when to retrace longline markings and ensures efficient utilization of the pavement marking budget.
    - Data is collected using two WisDOT-owned LaserLux G7 Mobile Retroreflectometers mounted to a vehicle.
    - WisDOT typically retains 4-5 years' worth of data in VUEWorks, with each collection year having its own layer.

- General process:
    - WisDOT staff travels the state collecting data, which is saved and stored in .csv and .kml files.
    - Starting in 2023, each .csv represents a "segment", typically corresponding to a construction segment/zone, over which various data fields are averaged for review. The following types of data are collected:
        - Average Retroreflectivity
        - Standard Deviation (Retroreflectivity)
        - Stripe Width (Reflective Width)
        - Presence
        - Contrast Ratio
    - After the collection season (typically May-September), the .csv files are uploaded into VUEWorks, each creating a new "retroreflectivity record" for the marking line and location the file represents. Utilizing the data in the .csv files, along with a pulling data from the adjacent records in the Longline layer, the above attribute fields are populated.

        - **The following attribute fields are populated based on data in the raw .csv files:**
            - **Region** (auto populated based on the record's placement on the map)
            - **County** (auto populated based on the record's placement on the map)
            - **Route** (manually entered by the collectors)
            - **Travel Direction** (manually entered by the collectors)
            - **Start & End Marker** (auto-populated based on when the .csv file was started and stopped).
            - **Start Latitude**, **Start Longitude**, **End Latitude** and **End Longitude** (auto-populated based on where the .csv file was started and stopped).
            - **Marking Location** (manually entered by the collectors)
            - **Average Retroreflectivity Value**, **Left Retroreflectivity**, **Right Retroreflectivity** and **Standard Deviation** (data captured by the meters)
            - **Stripe Width, Left Width** and **Right Width** (data captured by the meters).
            - **Presence** (manually entered by the collectors)
            - **Contrast Ratio** (data captured by the meters)
            - **RPM** (data captured by the meters)
            - **Color** (manually entered by the collectors)
            - **Reading** (auto-populated based on the meter readings)
            - **Special Zone** (manually entered by the collectors)
            - **Groove** (manually entered by the collectors)

- **Create Date** (manually entered by the collectors)
- **File Name** (manually entered by the collectors)

- **All other fields are populated in one of two ways:**
  1.) Using a batched script process, certain fields (such as Bid Item Number & Description) can be populated looking at the corresponding/adjacent record(s) in the Longline Marking layer. If there is a match found between a Longline Marking record and a Retroreflectivity record (confirm they are the same marking in the field), data can be pulled from the attribute fields in the Longline record and be auto populated in the same attribute fields in the Retroreflectivity record.
  2.) Manually entered by WisDOT staff