

Calculating State-Maintained Mileage

Using Road Characteristics GIS Data

The field names in this document reference the file geodatabase Road Characteristics data.

Centerline Miles

- 1) The length field is “MPLength” (shape_length should not be used)
- 2) Valid state-maintained route classes are Interstate (1), US Routes (2), NC Routes (3) and Secondary Routes (4)
 - a. Ramps and projected roads should not be used in mileage calculations
 - b. RouteClass IN ('1','2','3','4')
- 3) Only the inventory direction of roads and couplets should be counted.
 - a. Inventory directions are Inventory and Clockwise. All bidirectional and one-way roads are inventory direction and one side of all divided roads is designated as inventory
 - b. Couplets are non-inventory sides of divided routes that function as independent one-way roadways and thus are considered inventory routes for mileage calculations
 - c. RouteInventory IN ('0','8') OR FcltyType = 'Couplet'
- 4) As of 2018 1st quarter, there were 79,956 miles of state-maintained roads.

To calculate centerline mileage, run this query:

```
RouteClass IN ('1','2','3','4') AND (RouteInventory IN ('0','8') OR FcltyType = 'Couplet')
```

Then sum the MPLength field.

Lane Miles

Lane miles are the length of the roads multiplied by the number of lanes.

- 1) The lane miles field is called “LaneMiles”
- 2) Unless otherwise requested, unpaved roads are excluded from lane mileage calculations
 - a. SrfcType IN ('AC_AC', 'AC_CRCP', 'AC_JCP', 'Bitum', 'BPCC_PCC', 'CRCP', 'JPCP', 'Other', 'UJC_PCC') OR SrfcType IS NULL

- 3) The official way of calculating lane miles for North Carolina is to double the through lanes in the inventory direction on divided roads and to not count the lane miles in the non-inventory direction
 - a. Undivided Roads: TravelDirection = 'Both' OR FcltyType IN ('Couplet', 'One Way')
 - b. Divided Roads: TravelDirection = 'One-way' AND FcltyType IS NULL'
- 4) As of 2018 1st quarter, there were 164,558 lane miles of state-maintained roads.

To calculate lane mileage, run these queries:

Undivided Roads:

```
RouteClass IN ('1','2','3','4') AND (RouteInventory IN ('0','8') OR FcltyType = 'Couplet') AND  
(SrftType IN ( 'AC_AC', 'AC_CRCP', 'AC_JCP', 'Bitum', 'BPCC_PCC', 'CRCP', 'JPCP', 'Other', 'UJC_PCC') OR  
SrftType IS NULL) AND (TravelDirection = 'Both' OR FcltyType IN ( 'Couplet', 'One Way'))
```

Divided Roads:

```
RouteClass IN ('1','2','3','4') AND (RouteInventory IN ('0','8') OR FcltyType = 'Couplet') AND  
(SrftType IN ( 'AC_AC', 'AC_CRCP', 'AC_JCP', 'Bitum', 'BPCC_PCC', 'CRCP', 'JPCP', 'Other', 'UJC_PCC') OR  
SrftType IS NULL) AND TravelDirection = 'One-way' AND FcltyType IS NULL'
```

Multiply the sum of the LaneMiles field from the Divided Roads query by 2 and add it to the sum of the Lane Miles field from the Undivided Roads query to get the total Lane Miles.

Non-System Mileage

There is currently not enough information in Road Characteristics to calculate off-system mileage accurately.

Mileage Publications

The following publications are available on the NCDOT Connect Site under the Road Inventory Data and Reports page (<https://connect.ncdot.gov/resources/State-Mapping/Pages/Road-Inventory-Data-and-Reports.aspx>). They contain mileage information for system and non-system roads for both present and past conditions.

NCDOT Maintained Mileage by System: year-end snapshots of on and off-system mileages

Quarterly Mileage Report: state-maintained mileage by county and route class, paved and unpaved

Highway Road Mileage: collection of mileage reports broken down by various characteristics

For questions about calculating mileage, or for assistance with specific mileage requests, please contact Faith Johnson of Transportation Asset Analytics Unit, NCDOT at fsjohnson@ncdot.gov.