

StructuresPolygon, 4th Quarter 2025 - NC Department of Transportation

Geodatabase Feature Class



Tags Bridge, Pipe, Culvert, Structures Management Unit, Go!NC, Structures, Deck

Summary

To provide a polygon representation of all non-sign structures currently inventoried by the Structures Management Unit (SMU). The polygons outline the extents of the structures visible in the State imagery provided by CGIA & NCOneMap and using Structure Length from the database. Where aerial imagery is outdated, such as in cases of new construction, all available information and other image sources are used to best locate the structure polygon and await confirmation through the State imagery.

Description

The structure deck polygons outline the extents of the structures visible in the State imagery provided by CGIA & NCOneMap and using Structure Length from the database. Where aerial imagery is outdated, such as in cases of new construction, all available information and other image sources are used to best locate the structure polygon and await confirmation through the State imagery.

This polygon file represents North Carolina bridges and other non-sign structures. Structure polygons match to structures visible in the State imagery, while structure points found in a separate layer are snapped to the road lines, also found in a separate layer. In cases where the road lines do not match the visible pavement, the structure point may not sit inside the structure polygon. If all features are in agreement with the imagery, the structure point and road line should intersect the structure polygon.

Polygons are reviewed in an ongoing, year-round visual QC that occurs between processes. This is in addition to the updates to the structures layer that occur on a quarterly basis. The purpose of this visual QC is to look for changes in the State imagery and adjust structure polygons where needed, especially in cases of new construction where structures were rebuilt in place, keeping their existing ID number. Also, areas of new construction, with or without the road lines updated, are reviewed for any changes that might affect the current inventory of structures. In a few cases of extreme disagreement in structure lengths with the values in the structures database (and with no way to resolve them), measurements from the imagery may be used for the decks in place of the database value - in these cases, the discrepancy is reported to the Structures Unit and a resolution is anticipated.

Credits

The deck layer is a compilation of data originally used in a hydraulic study, then individually reviewed and manually revised to keep up with changes in inventory and imagery.

Use limitations

The availability and accuracy of the structures-related datasets are dependent upon an ongoing process of integration between the NCDOT GIS Unit and the Structures Management Unit. Discrepancies may exist since the frequency with

which the sources are updated is not the same among the different groups. Please take this into account prior to utilizing any structures layer.

This polygon layer is also dependent upon the State imagery which can be found on NCOneMap.com. Deck polygons for all structures contained within this layer are matched to the visible structures in the State imagery. Where structures are not visible, other layers and information are utilized to best approximate their location. Where structures are significantly updated or rebuilt, a polygon may not match the structure if it is not visible in the imagery yet. For new construction reflected in the database, the polygon can be updated to at least show the new structure length. Where new construction is not reflected in the database but can be seen in the imagery, it depends upon whether the structures have been reviewed in the area as to whether or not they will also reflect those changes. Thus, there is another ongoing process attempting to keep the deck polygons matched to the State imagery. The NEWCONSTR field in this layer reflects those polygons with structure lengths updated in the database but not yet in the imagery. Please keep this in mind when reviewing the deck polygons.

Extent

West -84.402420
East -75.426360
North 36.614236
South 33.763802

Scale Range

Maximum (zoomed in) 1:5,000
Minimum (zoomed out) 1:150,000,000

Topics and Keywords

Themes or categories of the resource Environment, Inland Waters, Location, Planning & Cadastral, Structure, Transportation

Content type Downloadable Data

Export to FGDC CSDGM XML format as Resource Description No

Theme keywords Bridge, Pipe, Culvert, bridge maintenance, AGOL, Go!NC, Structures Management Unit, Structures, Deck

Place keywords North Carolina

Temporal keywords 4th Qtr 2025

Citation

Title StructuresPolygon, 4th Quarter 2025 - NC Department of Transportation

Publication date 2026-02-23 00:00:00

Presentation formats digital map

Citation Contacts

Responsible party - point of contact

Individual's name GIS Help Desk

Organization's name NCDOT GIS Unit

Contact information

Phone

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Address

Type physical

Delivery point Century Center Building B, 1020 Birch Ridge Drive

City Raleigh

Administrative area NC

Postal code 27604

Country US

e-mail address gishelp@ncdot.gov

Hours of service

8 am to 5 pm, M-F

Contact instructions

For further information about bridge attributes, contact Cary Clemmons of the Bridge Maintenance Unit, at (919) 707-6458 or clemmons@ncdot.gov

Resource Details

Dataset languages English (UNITED STATES)

Dataset character set utf8 - 8 bit UCS Transfer Format

Spatial representation type vector

Supplemental information

This polygon layer, like the structures point layer, contains many kinds of structures currently maintained by the Structures Management Unit (SMU) of the NCDOT. They reflect an ongoing attempt by the NCDOT GIS Unit to portray the traffic-carrying structures found in the NCDOT SMU's Structures Database and shown in the GIS Structures layer in as timely a manner as possible. Until such time as the GIS Unit can approximate the maintenance schedule of the SMU, the GIS layer may not accurately reflect the structures currently in service or the additions and deletions to the Bridge Inventory System which are performed on a daily basis by the SMU.

Minimal attribute information is attached to this layer. It can be joined to the main structures point layer via the Brdg_Nbr value, gaining access to that point layer's more complete attribute listing. It can also be joined to any table requested from SMU via the Brdg_Nbr.

Processing environment Version 6.2 (Build 9200) ; Esri ArcGIS 10.8.1.14362

Credits

The deck layer is a compilation of data originally used in a hydraulic study, then individually reviewed and manually revised to keep up with changes in inventory and imagery.

ArcGIS item properties

Name NCDOTStructureLocationsPolygon

Location file:///\\DOT\DFSROOT01\GROUPS-GISCC\GIS-SpatialDataMgmt\Maintenance\QuarterlyDataRefresh\Structures\2025Q4\Review\NCDOTStructureLocationsPolygon.gdb

Access protocol Local Area Network

Extents

Extent

Geographic extent

Bounding rectangle

Extent type

Extent used for searching

West longitude -84.402420

East longitude -75.426360

North latitude 36.614236

South latitude 33.763802

Extent contains the resource Yes

Extent in the item's coordinate system

westBL 412569.425611

eastBL 3049484.060236

southBL 46803.960064

northBL 1042525.784234

exTypeCode Yes

Resource Points of Contact

Point of contact - point of contact

Individual's name GIS Help Desk

Organization's name NCDOT GIS Unit

Contact information

Phone

Voice 919.707.2165

Fax 919.707.2210

Address

Type physical

Delivery point Century Center Building B, 1020 Birch Ridge Drive

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Country US

e-mail address gishelp@ncdot.gov

Hours of service

8 am to 5 pm, M-F

Contact instructions

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Resource Maintenance

Resource maintenance

Update frequency quarterly

Other maintenance requirements

Time Period of content: 4th Qtr 2025 (source date 01/26/26)

Resource Constraints

Constraints

Limitations of use

The availability and accuracy of the structures-related datasets are dependent upon an ongoing process of integration between the NCDOT GIS Unit and the Structures Management Unit. Discrepancies may exist since the frequency with which the sources are updated is not the same among the different groups. Please take this into account prior to utilizing any structures layer.

This polygon layer is also dependent upon the State imagery which can be found on NCOneMap.com. Deck polygons for all structures contained within this layer are matched to the visible structures in the State imagery. Where structures are not visible, other layers and information are utilized to best approximate their location. Where structures are significantly updated or rebuilt, a polygon may not match the structure if it is not visible in the imagery yet. For new construction reflected in the database, the polygon can be updated to at least show the new structure length. Where new construction is not reflected in the database but can be seen in the imagery, it depends upon whether the structures have been reviewed in the area as to whether or not they will also reflect those changes. Thus, there is another ongoing process attempting to keep the deck polygons matched to the State imagery. The NEWCONSTR field in this layer reflects those polygons with structure lengths updated in the database but not yet in the imagery. Please keep this in mind when reviewing the deck polygons.

Spatial Reference

ArcGIS coordinate system

Type Projected

Geographic coordinate reference GCS_North_American_1983

Projection NAD_1983_StatePlane_North_Carolina_FIPS_3200_Feet

Coordinate reference details

ProjectedCoordinateSystem

WKID 102719

XOrigin -121841900

YOrigin -93659000

XYScale 3048.0060960121928

ZOrigin -100000

ZScale 10000

MOrigin -100000

MScale 10000
XYTolerance 0.00328083333333333331
ZTolerance 0.001
MTolerance 0.001
HighPrecision true
LatestWKID 2264
WKT

```
PROJCS["NAD_1983_StatePlane_North_Carolina_FIPS_3200_Feet",GEOGCS["GCS_North_American_1983",DATUM["D_North_American_1983",SPHEROID["GRS_1980",6378137.0,298.257222101]],PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199433]],PROJECTION["Lambert_Conformal_Conic"],PARAMETER["False_Easting",2000000.002616666],PARAMETER["False_Northing",0.0],PARAMETER["Central_Meridian",-79.0],PARAMETER["Standard_Parallel_1",34.33333333333334],PARAMETER["Standard_Parallel_2",36.16666666666666],PARAMETER["Latitude_Of_Origin",33.75],UNIT["Foot_US",0.3048006096012192],AUTHORITY["EPSG",2264]]
```

Reference system identifier

Value 2264
Codespace EPSG
Version 6.12(9.0.0)

Spatial Data Properties

Vector

Level of topology for this dataset geometry only

Geometric objects

Feature class name NCDOTStructureLocationsPolygon
Object type composite
Object count 20160

ArcGIS Feature Class Properties

Feature class name NCDOTStructureLocationsPolygon
Feature type Simple
Geometry type Polygon
Has topology FALSE
Feature count 20160
Spatial index TRUE
Linear referencing FALSE

Data Quality

Scope of quality information

Resource level attribute

Data quality report - Quantitative attribute accuracy

Quality evaluation procedure
Evaluation method

There are no measurement, precision, spatial, or data schema standards assigned to this dataset.

Data quality report - Conceptual consistency

Quality evaluation procedure

Evaluation method

There are no measurement, precision, spatial, or data schema standards assigned to this dataset.

Data quality report - Completeness omission

Quality evaluation procedure

Evaluation method

There are no measurement, precision, spatial, or data schema standards assigned to this dataset.

The bridge layer contains many kinds of structures currently maintained by the Structures Management Unit of the NCDOT. They reflect an ongoing integration between the structures found in the GIS bridge layer and the bridge database maintained by the Structures Management Unit. As such, the GIS layer may not accurately reflect the structures currently in service or the additions and deletions to the Bridge Inventory system which are performed on a daily basis.

Data quality report - Absolute external positional accuracy dimension horizontal

Quality evaluation procedure

Evaluation method

Structures were compared for accuracy against the most current imagery and against field inspection reports where necessary. Structure points are snapped to the relevant state-maintained routes in the center of the structures where possible. In the case of intersecting, non-divided routes, the structure point is snapped to the routes' intersection point. In the case of divided highways, the structure point is snapped to the intersection of the inventory sides of the routes. Otherwise, there are no measurement, precision, spatial, or data schema standards assigned to this dataset.

Lineage

Lineage statement

Structure decks were created via a program utilizing the structure points in the GIS layer and attributes from the structures database. Following their usage in a hydrology study, they were adopted for use alongside the structures point layer and truck routing network.

Quarterly, the GIS Unit requests a structures database update from SMU and compares this update against the existing GIS Structures layer. Non-matching structure records are sorted according to whether they are additions or deletions compared to the existing structures layer. Deletions are removed to a separate layer and additions are merged into the existing layer, followed by a period of review using the latest imagery for location verification. Polygons are created for all non-sign structures added to this layer. Polygons for deleted points are also removed to a separate layer, allowing for a one-to-one relationship between the deck polygons and the non-sign structures.

Distribution

Distributor

Contact information - point of contact

Individual's name GIS Help Desk

Organization's name NCDOT GIS Unit

Contact information

Phone

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Type physical

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Administrative area NC

Postal code 27604

Country US

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Hours of service

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Contact instructions

For further information about bridge attributes, contact Cary Clemmons of the Bridge Maintenance Unit, at (919) 707-6458 or clemmons@ncdot.gov

Distribution format

Version ArcGIS 10.1

Name File Geodatabase Feature Class

Fields

Details for object NCDOTStructureLocationsPolygon

Type Feature Class

Row count 20160

Definition

Bridges and other structures along NC highways

Definition source

NCDOT Structures Management Unit

Field BRDG_NBR

Alias Brdg_Nbr

Data type String

Width 10

Precision 0

Scale 0

Field description

2-digit county number + 4-digit bridge number

Description source

NCDOT Structures Management Unit

Field Shape

Alias Shape

Data type Geometry

Width 0

Precision 0

Scale 0

Field description

Feature geometry.

Description source

ESRI

Description of values

Coordinates defining the features.

Field OBJECTID

Alias OBJECTID

Data type OID

Width 4

Precision 0

Scale 0

Field description

Internal feature number.

Description source

ESRI

Description of values

Sequential unique whole numbers that are automatically generated.

Field Shape_Length

Alias Shape_Length

Data type Double

Width 8

Precision 0

Scale 0

Field description

Length of feature in internal units.

Description source

Esri

Description of values

Positive real numbers that are automatically generated.

Field Shape_Area

Alias Shape_Area

Data type Double

Width 8

Precision 0

Scale 0

Field description

Area of feature in internal units squared.

Description source

Esri

Description of values

Positive real numbers that are automatically generated.

Field NEWCONSTR

Alias NEWCONSTR

Data type String

Width 1

Precision 0

Scale 0

Field description

"New Construction" polygons for the purposes of this layer are defined as those structures rebuilt or altered prior to any update of the State imagery showing that structure. As such, the outline of the polygon in this layer may not match the structure visible in the latest imagery for those designated as "new construction." Polygons are drawn to match the most current Structure Length in the database, so New Construction polygons may not match the actual structures until they are visible in the imagery, and the corners can be confirmed.

A "Y" (yes) value in this field indicates that the structure is new construction and may not match the imagery.

An "N" (no) indicates the structure is not new construction and should match the imagery.

Description source

Field STRCTR_LEN

Alias STRCTR_LEN

Data type Double

Width 8

Precision 0

Scale 0

Field description

The length of the structure, as provided by the Structures Mgmt Unit.

Description source

NCDOT Structures Mgmt Unit

Field BRDG_TYP_NM

Alias Bridge Type

Data type String

Width 25

Precision 0

Scale 0

Field description

Type of structure as a text string.

Description source

NCDIT GIS Unit

Metadata Details

Metadata language English (UNITED STATES)

Metadata character set utf8 - 8 bit UCS Transfer Format

Scope of the data described by the metadata dataset

Scope name dataset

Last update 2026-02-05

ArcGIS metadata properties

Metadata format ArcGIS 1.0

Metadata style FGDC CSDGM Metadata

Standard or profile used to edit metadata ISO19139

Created in ArcGIS for the item 2026-02-05 08:22:06

Last modified in ArcGIS for the item 2026-02-05 14:23:28

Automatic updates

Have been performed Yes

Last update 2026-02-05 14:23:28

Metadata Contacts

Metadata contact - point of contact

Individual's name GIS Help Desk

Organization's name NCDOT GIS Unit

Contact information

Phone

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Metadata Maintenance

Maintenance

Update frequency quarterly

Metadata Constraints

Constraints

Limitations of use

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

Legal constraints

Other constraints

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Thumbnail and Enclosures

Thumbnail

Thumbnail type

Image file