DCHC MPO GIS/Database/Web	Date: 11/10/2013 Date Last Updated: 2/06/2014
	Standard of Procedure Number: 1

Objective: Documenting DCHC MPO Spatial Data Standards
Inputs: Shapefile(s), Geodatabases, DOQQ (Digital Orthophoto Quarter Quad), DEM etc.
Outputs: Data with standardized coordinate system, projection, units
Comment:

DCHC MPO GIS/Database/Web Data Standards

The vision for DCHC MPO enterprise GIS database is based on the concept of an environment where data suppliers, maintainers, and users interact in real time, in the same space and with the same goal of delivering the most productive experience for the users. Data users demand specific data products. Data suppliers provide finished products. Data maintainers ensure data products are of the highest quality possible, that the database is clean (no redundant data), and that the system functions efficiently (no redundant activities).

The GIS/Database/Web (GDW) environment is at its most efficient when all participants interact directly with the database/web, within the standards set forth for the database, and without the additional cost related to activity monitoring or data management. This vision can be achieved by data suppliers and maintainers developing a relationship based on collaboration, trust, and shared expectations. To that end, data suppliers must provide accurate data to data maintainers, whose proficient use of tools ensures a cost efficient product.

This is the vision in GDW for DCHC MPO, and this vision will be realized by implementing (i.e., development and compliance) a set of operating and data standards that generate the framework for a three-stage process to educate and empower DCHC MPO personnel for GIS and its best use.

To encourage the development of this style of GDW environment, the DCHC MPO GDW Program has been generating standards supplying, maintaining, and using data to ensure DCHC MPO personnel have access to the highest quality data products at the lowest possible cost. The following three-step process forms the foundation for the standards described herein and for ultimately achieving the environment described above.

Step 1 – GDW Program manages the activities of data suppliers and maintainers, and intervenes as a third party to transfer supplied and maintained data to DCHC MPO personnel.

Step 2 – Data suppliers and maintainers have earned the trust of the GDW Program by delivering high quality, error free, and useful data and associated products for DCHC MPO users. The GIS Program periodically conducts data quality reviews/updates to keep the database up to date and accurate.

Step 3 – Data suppliers and maintainers have an established track record of providing 'on demand', high-quality products at the lowest cost. The GDW Program takes constant feedback from maintainers and users and manages the maintenance of the GIS environment to achieve the highest quality product and service at the lowest cost.

For additional information, feel free to contact DCHC MPO's GIS/Database/Web at 101 City Hall Plaza, City of Durham, DCHC MPO, phone (919) 560-4366, Fax (919)560-4561, or email: [mpogisdataweb@durhamnc.gov(TBD)](mailto:mpogisdataweb@durhamnc.gov)

Table of Contents

1.0 GDW **Standards**

The standards described herein apply to all GDW data developed through expenditure of DCHC MPO funds, including in-house-developed data or contractor-developed data.

1.1 Generating Data
1.1.1 Coordinate System and Data Storage Parameters
The coordinate system standard for **vector, raster data** (GIS data) shall be:

      NAD_1983_StatePlane_North_Carolina_FIPS_3200_Feet
      WKID (Well-Known ID) : 2264 Authority: EPSG

      Projection: Lambert_Conformal_Conic
      False_Easting: 2000000.002616666
      False_Northing: 0.0
      Central_Meridian: -79.0
      Standard_Parallel_1: 34.33333333333334
      Standard_Parallel_2: 36.16666666666666
      Latitude_Of_Origin: 33.75
      Linear Unit: Foot_US (0.3048006096012192)

      Geographic Coordinate System: GCS_North_American_1983
      Angular Unit: Degree (0.0174532925199433)
      Prime Meridian: Greenwich (0.0)
      Datum: D_North_American_1983
       Spheroid: GRS_1980
        Semimajor Axis: 6378137.0
        Semiminor Axis: 6356752.314140356
  Inverse Flattening: 298.257222101

The SDE domain in general parameters shall be:

      SDE X/Y Domain (State of North Carolina boundary envelope)

      MinX:- -75.375349 (406991.481712)
      MaxX: -84.424224 (3051804.357337 ft)
      MinY: 33.656277 (36014.098750 ft)
      MaxY: 36.691234 (1042849.523750 ft)

Data developed by third parties (i.e., not on behalf of the DCHC MPO) shall be transformed by the North Carolina state plane coordinate system prior to being stored in the enterprise GIS database.

The following projection parameters are used for Lambert Conformal Conic coordinates:
      NAD_1983_StatePlane_North_Carolina_FIPS_3200_Feet

WKID: 2264 Authority: EPSG

Projection: Lambert_Conformal_Conic
False_Easting: 2000000.002616666
False_Northing: 0.0
Central_Meridian: -79.0
Standard_Parallel_1: 34.33333333333334
Standard_Parallel_2: 36.16666666666666
Latitude_Of_Origin: 33.75
Linear Unit: Foot_US (0.3048006096012192)

1.1.2 Custom Data Extents

For GIS data having a geographic extent greater than the DCHC MPO boundaries but less than the state, State Plane North Carolina (feet) projection will be used. The SDE X/Y domain shall be that defined depending on the original data extent.

1.1.3 Attribute Data

DCHC MPO adheres to the National Emergency Number Association (NENA) for standards for addressing information. Web address**:** Link of NENA Technical Standards & Docs – Kiran
http://www.nena.org/?TechnicalStandards
K:\Planning\Transportation_Interns_FY2013\Kiran\Durmus\NENA_02-014-v1_GIS_Data_Collection_and_Maintenance.pdf

1.1.4 GIS Software

DCHC MPO employs the latest GIS software and has installed ArcGIS 10.x, ArcSDE 10.x, and on the process to migrate to ArcGIS Server 12.x (at time of publishing).

1.1.5 Data Formats

The primary format is ESRI geodatabase 10.x. The DCHC MPO will also accept ESRI shapefile formats for GIS data (and AutoCAD CAD dwg v9+ or Microstation CAD v7+ data formats for engineering-type drawings and digital mapping files, TransCAD for modeling/network data). ESRI data shall be stored as double precision.

1.2 Automation and Metadata

The DCHC MPO's map projection and coordinate system standards shall be used for all layers developed by MPO resources or by external firms doing work on behalf of the MPO. Map Title shall clearly describe the map theme. Metadata describes important details about the data accuracy and reliability. The DCHC MPO adheres to the FGDC metadata standard for GIS data metadata and metadata shall accompany all layers developed. The minimum accepted metadata would include contact information for Data

Suppliers and/or Data Maintainers, Date of Publishing, completion or submission, and Frequency of Data Update. A Maintenance Process document (Standard of procedure and Maintenance and Update Plan) must be included with each dataset prior to its upload to the GIS database.

1.3 GIS Data Layer Naming

GIS naming convention shall be of the form: Locality_XxxxXxxxXxxx_Date (First letter of each word capitalized, date of update as yyyy or yyyymm or yyyymmdd, depending on how often it's updated).
Example: MPO_CensusTract2010, MPO_2040FutureLandUse_20130625, etc
Raster, aerial or orthophoto naming convention shall be of the form: Aerial (yyyymm)(BW/Color/IR)(Resolution)
Example: Aerial 200202 BW5M
In all cases, GIS data or map layer names shall describe, in layperson terms, the data contained. In all cases, metadata will contain a layperson description of the data. Data / Layer names must not exceed 30 characters in length.

1.4 Attribute Table Column Names

The maximum length for a column name shall be 30 characters. Columns or fields containing numbers that will not be used in calculations (like PID, address numbers, etc.) shall be a text string or varchar datatype. The use of a hyphen in a field name is not allowed. If column title uses acronyms, these can be capitalized. Underscores can be used to separate words (example: USGS_Waterways). Columns or fields containing numbers that will be used in calculations (like length, area, volume, etc.) shall be stored with a numeric data type (floating point, integer, double etc.) appropriate to the intended calculation. For example, a floating point is used for answers requiring decimal numbers and integer for answers requiring whole numbers. An ESRI shapefile stores dates in a date field with this format: yyyy-mm-dd. A geodatabase formats date as datetime yyyy-mm-dd hh:mm:ss AM or PM. All date fields created in shapefile or geodatabase format shall be created as a date field type, and populated according to this standard. DO NOT use 'system reserved words' like 'DATE', NUMBER, TEXT, TO, FROM, GRANT' to name column or fields. If source data columns have a reserved word naming, the data supplier or maintainer shall change the column name to "something else". If the source data column contains a name that is a date or numeric reference then the data supplier or maintainer shall change the name to "something else_date" – "date" being the actual date or number of the original column name.

1.5 Spatial Topology

Map data submitted for inclusion in the DCHC MPO GIS database will be topologically clean and free of errors. All points, lines, polygons, and regions will have a single unique userid number. Data will be free of undershoots, overshoots, and sliver polygons unless necessary to accurately describe the specific map data. All data provided

as a geodatabase shall have topology based on the criteria outlined in the ArcGIS help system instructions (refer specifically to 'Topology Validation' topic). GIS data layers derived from foundation data – like parcels, shoreline, hydrology, street centerlines, or administrative boundaries – shall be of the same spatial accuracy as the source data. For example, GIS data derived from the parcels map layer, and which has graphic lines common to parcel lines, shall have those common lines exactly coincident to the originating parcel lines. This criterion is the standard for all data derived from previously published data.

1.6 Digitizing from Paper, Scanned Files to Convert to a Vector GIS File

The paper or Mylar map/scanned copy being digitized/converted to vector file should be the best possible source document. In the case of new information, the source must contain the most current information. For historic information, the source is the most legible and represents the most accurate information possible for the time period under consideration. The source document – to the best of the technician's ability – shall be flat, not torn, nor folded. The GIS technician shall know that Mylar source material expands or shrinks depending on the temperature, and he/she shall ensure that the digitizing environment is within 50-80 F degrees.

After source document registration, the ArcMap software will report the point-by-point RMS (Root Mean Square) error in map units. The GIS technician shall note the error in digitizer inches and map units (scanned documents). (Note: the RMS error is reported in both current map units and digitizer inches). The RMS error shall not exceed 0.004 digitizer inches. Should the RMS error exceed 0.004 inches, then the GIS operator must repeat the registration process until an RMS error is equal to or less than 0.004 inches.

An exception is made for less accurate source data. For poor source material, the Manager (or designee), may authorize the RMS error to not exceed 0.008 digitizer inches. The GIS technician shall obtain a minimum of 4 reference points and no more than 10 reference points shall be used (unless otherwise authorized).

Reference points will be first selected on the perimeter of the data area to be digitized then internal within that area as accuracy needs dictate. The map is deemed "referenced" once an RMS meets the standard and the GIS technician may proceed to enter map data. If more than 4 hours has lapsed since the last input session, then the GIS technician, prior continuing digitizing work, must re-register the map and meet the RMS standard.

1.7 Cartographic Standards

All maps shall be created at a scale that does not compromise the accuracy of the source data unless otherwise noted on the map surround. For example, producing a map at 1:100 scale if the data is only accurate to 1:200 scale is not acceptable unless the map legend contains notes stating either "data shown is not to scale" or "data shown is accurate to 1:200 only".

It would also not be acceptable to produce a map at a scale in which the base data is unreadable. For example, producing a 1:20000 map showing parcels – in which the parcel text would be too small to read would not be acceptable. Judgments around the

scale at which to display thematic data shall be left up to the map producer's (cartographer) and customer's intended usage. In all cases, source data accuracy shall be displayed on the map surround.

DCHC MPO GIS has adopted the National Mapping Standards (NMS) for mapping /GIS products. Internal staff and contractors shall adhere to NMS for all mapping or GIS products. National Mapping Standards are referenced at http://mapping.usgs.gov/standards. At a minimum, each custom map publication shall include the following map surround items:

- DCHC MPO Logo
- Logo of other contributors (e.g. CAMPO)
- Statement of scale
- North Arrow
- Neatline (map border)
- Legend
- Citation (Reference information)(if appropriate)
- Title
- Standard Disclaimer, and any others appropriate to
  the map
- Statement of coordinate system and map projection used (if appropriate)
- Date of publication
- Map file location on the server (internal use only)

Cartographic standards apply to all maps produced using DCHC MPO funds (internal staff, contractors, partnership funded non-profits). DCHC MPO shall make available map surround templates for the following scale maps – 1:100, 1:200, 1:400. When possible, templates shall be used and customized to suit the specific map product being produced.

1.8 Generating Geocoded Data

Geocoding is a GIS software functionality used to position tabular address data relative to GIS map layers. For this function to work, a GIS file, which is structured for this purpose, should exist. For example, a street centerline GIS file is typically attributed with street name, address range and other address relevant details. The user "owns" the tabular address file and uses the geocoding function to create new GIS "point" map layers, which contain the approximate locations of the addresses contained in the tabular input file. We should also mention parcel-based or address points-based geocoding (best for Employment Analyst, for example).

GIS has adopted the NENA standard for addressing, and all geocode "enabled" GIS files will meet this standard. However, when tabular address files fail to meet the NENA standard, or contain spelling mistakes, PO Box, wrong house number, or other data errors, the resulting GIS point file contains less than 100% of the addresses contained in the input file. The difference from 100% is the error rate of the tabular input file. The time required to correct the errors is dependent on the error rate and the number of address records not matching the GIS file. A 20% error rate takes considerably more time to correct than a 1% error rate, and 5,000 address errors takes considerably more time to correct than 500 address errors.

To ensure processing efficiency, the accepted geocoding error rate for published data shall be the lesser of 2% or 500 address record errors. The supplier of the tabular address data file is responsible for providing a file that meets the 2% or 1,000 address error standard. NOTE: the data supplier may accept a higher error rate and use the subsequently generated GIS file for his/her own needs. However, only GIS files derived from geocoding that meet or are below the 2% / 500 record error rate shall be published to the Enterprise GIS database.

For geocoding against point based GIS geocode "enabled" files, the geocoding style shall be **US Streets** (no zone information). For all other cases, the **US Streets with Zone** shall be used. Again, parcels and address points.

The Tabular Address File's (TAF) digital format shall be one of the following:
- MS Access
- MS Excel
- DBASE III
- DBASE IV
- Comma Delimited

TAF data format shall contain:

• In one column, the ADDRESS, which includes – House Number, Street Directional (if applicable), Street Name and Street Type. EXAMPLE - 2314 S Jackson Dr• And in a second column, the 5 digit ZIP CODE.

DCHC MPO shall create separate standard Address Locator to optimize parcel address geocoding or street address geocoding by having number of Address Locator such as City State, Dual Ranges etc.

APPENDIX 1.

Identification ▶

DESCRIPTION
ABSTRACT
The AADT shapefile is a station point shapefile of Annual Average Daily Traffic (AADT) estimates. This data includes the data submitted to FHWA for Highway Performance Monitoring System (HPMS) AADT data reporting for 2012.Data is reported for AADT on all highways with a Functional Classification (FC) above Local. A full coverage is provided for these routes where AADT segmentation is based on network configuration, travel patterns, and land use. The extent of highway this AADT represents has not been determined. An AADT is an Annual Average Daily Traffic volume for all lanes in both directions passing a point on the highway system. It represents the average of all days during the year with typical traffic conditions. An AADT estimate is generated using procedures that comply with the standards specified in the Traffic Monitoring Guide published by the Federal Highway Administration. There are over 40,000 AADT stations that provide traffic data history from 2002 to 2012. With more than 40,000 Portable Traffic Count (PTC) Stations located throughout North Carolina, Traffic Survey has adopted the following data collection schedule: Interstate route volumes are collected on an annual basis. US and NC route volumes are also collected on an annual basis with the exception of stations which fall within the off cycle urban areas. (See urban area cycle below.) Secondary Road (SR) volumes are collected on a biennial cycle with approximately half being counted each year. If a particular secondary road is not available for the most current year, it may be available for the prior year. North Carolina's eighteen largest urban areas are counted on a biennial cycle with 10 urban areas counted during the even years and 8 urban areas counted during the odd years. The following urban areas are collected during the even year cycle: Asheville, Charlotte, Concord-Kannapolis, Fayetteville, Gastonia, Goldsboro, Greenville, and Jacksonville. The following urban areas are collected during the odd year cycle: Burlington, Chapel Hill, Durham, Greensboro, Hickory, High Point, Raleigh, Rocky Mount, Wilmington, and Winston-Salem. The data in this file was digitized referencing the available NCDOT Linear Referencing System (LRS) and is not the result of using GPS equipment in the field nor latitude and longitude coordinates. The referencing provided is based on the 2013 Quarter 1 publication of the NCDOT Linear Referencing System (LRS). Some differences will be found when using different quarterly publications with this data set. The data provided is seasonally factored to an estimate of an annual average of daily traffic. The statistics provided are: CVRG_VLM_I: Traffic Survey's seven digit unique station

identifierSTATION: Traffic Survey's four digit station identifier COUNTY: County NameROUTE: Numbered route identifier, or local name if not State maintainedLOCATION: Description of the Annual Average Daily Traffic station location AADT2012: Estimated Annual Average Daily Traffic in vehicles per day for 2012 AADT2011: Estimated Annual Average Daily Traffic in vehicles per day for 2011 AADT2010: Estimated Annual Average Daily Traffic in vehicles per day for 2010 AADT2009: Estimated Annual Average Daily Traffic in vehicles per day for 2009 AADT2008: Estimated Annual Average Daily Traffic in vehicles per day for 2008 AADT2007: Estimated Annual Average Daily Traffic in vehicles per day for 2007 AADT2006: Estimated Annual Average Daily Traffic in vehicles per day for 2006 AADT2005: Estimated Annual Average Daily Traffic in vehicles per day for 2005 AADT2004: Estimated Annual Average Daily Traffic in vehicles per day for 2004 AADT2003: Estimated Annual Average Daily Traffic in vehicles per day for 2003 AADT2002: Estimated Annual Average Daily Traffic in vehicles per day for 2002 Note: A value of zero in the AADT field indicates no available AADT data for that year. Please note the following: Not ALL roads have PTC stations located on them. With the exception of Interstate, NC and US routes, NCDOT County Maps refer to roads using a four digit Secondary Road Number, not a road's local name.If additional information is needed, or an issue with the data is identified, please contact the Traffic Survey Group at (919) 661-5872.

PURPOSE
Published historical Annual Average Daily Traffic (AADT) data for the North Carolina Deparment of Transportation. This file can be used as a visual representation of the AADT points along a road segment.

TIME PERIOD OF CONTENT
TIME PERIOD INFORMATION
SINGLE DATE/TIME
CALENDAR DATE   2012
TIME OF DAY   unknown
  CURRENTNESS REFERENCE
publication date

STATUS
PROGRESS   Complete
MAINTENANCE AND UPDATE FREQUENCY   Annually

SPATIAL DOMAIN
BOUNDING COORDINATES
WEST BOUNDING COORDINATE   -84.419655
EAST BOUNDING COORDINATE   -75.424678
NORTH BOUNDING COORDINATE   36.603183
SOUTH BOUNDING COORDINATE   33.754565

KEYWORDS
THEME
THEME KEYWORD THESAURUS   Traffic Monitoring Guide
THEME KEYWORD   Annual Average Daily Traffic (AADT)
THEME KEYWORD   Traffic Volume Count
THEME KEYWORD   Portable Traffic Counts (PTC)

THEME
THEME KEYWORD THESAURUS   ISO 19115 Topic Category
THEME KEYWORD   Roads
THEME KEYWORD   Interstate
THEME KEYWORD   Highways

THEME KEYWORD   Streets

THEME
THEME KEYWORD THESAURUS   User
THEME KEYWORD   NC
THEME KEYWORD   US
THEME KEYWORD   SR
THEME KEYWORD   Local

PLACE
PLACE KEYWORD THESAURUS   User
PLACE KEYWORD   North Carolina

ACCESS CONSTRAINTS
None

USE CONSTRAINTS
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.Disclaimer related to the spatial accuracy of this file:

The data in this file was digitized referencing the available NCDOT, GIS LRS & ISRN road layer files and is not the result of using GPS equipment in the field.

POINT OF CONTACT
CONTACT INFORMATION
CONTACT ORGANIZATION PRIMARY
CONTACT ORGANIZATION   North Carolina Department of Transportation Traffic Survey Group
  CONTACT POSITION   Traffic Data Request
  CONTACT ADDRESS
ADDRESS TYPE   mailing address
ADDRESS   1547 Mail Service Center
CITY   Raleigh
STATE OR PROVINCE   NC
POSTAL CODE   27699-1547
COUNTRY   UNITED STATES

CONTACT VOICE TELEPHONE   919.661.5872
CONTACT FACSIMILE TELEPHONE   919.773.2935
CONTACT ELECTRONIC MAIL ADDRESS
https://apps.dot.state.nc.us/ContactUS/PostComment.aspx?Unit=Traff_Surv
HOURS OF SERVICE   8am to 5pm, M-F
CONTACT INSTRUCTIONS
Phone or e-mail.

E-mail contact can be initiated through Traffic Survey's web page : http://www.ncdot.org/doh/preconstruct/tpb/traffic_survey/ and clicking on the Contact US link under Contact Information at the bottom of the page.

SECURITY INFORMATION
SECURITY CLASSIFICATION SYSTEM   None
SECURITY CLASSIFICATION   Unclassified
SECURITY HANDLING DESCRIPTION   None

NATIVE DATA SET ENVIRONMENT
Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 3; ESRI ArcCatalog 9.3.1.3000

Hide Identification ▲

Data Quality ▶

ATTRIBUTE ACCURACY
ATTRIBUTE ACCURACY REPORT
There are no measurement, precision, spatial, or data schema standards assigned to this data set.

LOGICAL CONSISTENCY REPORT
There are no measurement, precision, spatial, or data schema standards assigned to this data set.

COMPLETENESS REPORT
There are no measurement, precision, spatial, or data schema standards assigned to this data set.

POSITIONAL ACCURACY
HORIZONTAL POSITIONAL ACCURACY
HORIZONTAL POSITIONAL ACCURACY REPORT
The data points in this file was manually digitized referencing the available NCDOT, GIS LRS/road layers and is not the result of using GPS equipment in the field.

VERTICAL POSITIONAL ACCURACY
VERTICAL POSITIONAL ACCURACY REPORT
The data points in this file was manually digitized referencing the available NCDOT, GIS LRS/road layers and is not the result of using GPS equipment in the field.

LINEAGE
SOURCE INFORMATION
SOURCE TIME PERIOD OF CONTENT
TIME PERIOD INFORMATION
SINGLE DATE/TIME
CALENDAR DATE   2012-07-03
TIME OF DAY   unknown
SOURCE CURRENTNESS REFERENCE
publication date
PROCESS STEP
PROCESS DESCRIPTION
Traffic Survey Group maintains the AADT points in a shapefile.

PROCESS DATE   On going

PROCESS STEP
PROCESS DESCRIPTION

Traffic Survey collects data and keys raw data

PROCESS STEP
PROCESS DESCRIPTION
Run internal applications for analysis and QC

PROCESS STEP
PROCESS DESCRIPTION
Data set is finalized and prepared for publication.

PROCESS STEP
PROCESS DESCRIPTION
Metadata is updated for publication.

PROCESS STEP
PROCESS DESCRIPTION
Dataset copied to web and provided to GIS to update SDV.

PROCESS STEP
PROCESS DESCRIPTION
Dataset copied.

PROCESS DATE   2011-08-24
PROCESS TIME   13:40:58

PROCESS STEP
PROCESS DESCRIPTION
Dataset copied.

SOURCE USED CITATION ABBREVIATION
W:\ArcData\TSUShapes\PTC\Base\PTC 2002-2010 AADT
History\NCDOT2010AADT
PROCESS DATE   2012-06-28
PROCESS TIME   15:49:13

PROCESS STEP
PROCESS DESCRIPTION
Dataset copied.

SOURCE USED CITATION ABBREVIATION
PROCESS DATE   2012-06-29
PROCESS TIME   11:23:03

PROCESS STEP
PROCESS DESCRIPTION
Dataset copied.

SOURCE USED CITATION ABBREVIATION
W:\ArcData\TSUShapes\PTC\Base\PTC 2002-2011 AADT
History\2011_NCDOT_AADT_STATIONS
PROCESS DATE   2012-06-29
PROCESS TIME   11:26:12

Hide Data Quality ▲

Spatial Reference ▶

HORIZONTAL COORDINATE SYSTEM DEFINITION
PLANAR
PLANAR COORDINATE INFORMATION
PLANAR COORDINATE ENCODING METHOD   coordinate pair
COORDINATE REPRESENTATION
ABSCISSA RESOLUTION   0.000000
ORDINATE RESOLUTION   0.000000
PLANAR DISTANCE UNITS   survey feet

GEODETIC MODEL
HORIZONTAL DATUM NAME   North American Datum of 1983
ELLIPSOID NAME   Geodetic Reference System 80
SEMI-MAJOR AXIS   6378137.000000
DENOMINATOR OF FLATTENING RATIO   298.257222

Hide Spatial Reference ▲

Entities and Attributes ▶

DETAILED DESCRIPTION
ENTITY TYPE
ENTITY TYPE LABEL   NCDOT_AADT_Stations_2012
ENTITY TYPE DEFINITION
Historical AADT values for 2011 back to 2002
ENTITY TYPE DEFINITION SOURCE   NCDOT Traffic Survey Group

ATTRIBUTE
ATTRIBUTE LABEL   OBJECTID
ATTRIBUTE DEFINITION
Internal feature number.
ATTRIBUTE DEFINITION SOURCE   Esri
ATTRIBUTE DOMAIN VALUES
UNREPRESENTABLE DOMAIN
Sequential unique whole numbers that are automatically generated.

ATTRIBUTE
ATTRIBUTE LABEL   Shape
ATTRIBUTE DEFINITION
Feature geometry.
ATTRIBUTE DEFINITION SOURCE   ESRI
ATTRIBUTE DOMAIN VALUES
UNREPRESENTABLE DOMAIN
Coordinates defining the features.

ATTRIBUTE
ATTRIBUTE LABEL   CVRG_VLM_I
ATTRIBUTE DEFINITION

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Uniquie Traffic Survey identifier for each station identifing the county and station number. This name stands for the Coverage Volume ID number that contains up to a 7 digit number. Digit locations 1 & 2 are for the County code 00-99 (Alamance County=00 - Yancy=99). The next digit after the county code is a zero. The zero acts as a place holder. The last four digits are Traffic Survey's station identification numbers.

ATTRIBUTE DEFINITION SOURCE   NCDOT Traffic Survey Group

ATTRIBUTE
ATTRIBUTE LABEL   STATION
ATTRIBUTE DEFINITION
An unique four digit station identifier.
ATTRIBUTE DEFINITION SOURCE   NCDOT Traffic Survey Group

ATTRIBUTE
ATTRIBUTE LABEL   COUNTY
ATTRIBUTE DEFINITION
County Name
ATTRIBUTE DEFINITION SOURCE   NCDOT Traffic Survey Group

ATTRIBUTE
ATTRIBUTE LABEL   ROUTE
ATTRIBUTE DEFINITION
Numbered route identifier
ATTRIBUTE DEFINITION SOURCE   NCDOT Traffic Survey Group

ATTRIBUTE
ATTRIBUTE LABEL   LOCATION
ATTRIBUTE DEFINITION
Description of the station location.
ATTRIBUTE DEFINITION SOURCE   NCDOT Traffic Survey Group

ATTRIBUTE
ATTRIBUTE LABEL   AADT_2012

ATTRIBUTE
ATTRIBUTE LABEL   AADT_2011

ATTRIBUTE
ATTRIBUTE LABEL   AADT_2010

ATTRIBUTE
ATTRIBUTE LABEL   AADT_2009

ATTRIBUTE
ATTRIBUTE LABEL   AADT_2008

ATTRIBUTE
ATTRIBUTE LABEL   AADT_2007

ATTRIBUTE
ATTRIBUTE LABEL   AADT_2006

ATTRIBUTE
ATTRIBUTE LABEL   AADT_2005

ATTRIBUTE

ATTRIBUTE LABEL   AADT_2004

ATTRIBUTE
ATTRIBUTE LABEL   AADT_2003

ATTRIBUTE
ATTRIBUTE LABEL   AADT_2002

Hide Entities and Attributes ▲

Distribution Information ▶

DISTRIBUTOR
CONTACT INFORMATION
CONTACT ORGANIZATION PRIMARY
CONTACT ORGANIZATION   North Carolina Department of Transportation Traffic
Survey Group
  CONTACT POSITION   Traffic Data Request
  CONTACT ADDRESS
ADDRESS TYPE   mailing address
ADDRESS   1547 Mail Service Center
CITY   Raleigh
STATE OR PROVINCE   NC
POSTAL CODE   27699-1547
COUNTRY   UNITED STATES

   CONTACT ADDRESS
ADDRESS TYPE   physical address
ADDRESS   750 N Greenfield Parkway
CITY   Garner
STATE OR PROVINCE   NC
POSTAL CODE   27529
COUNTRY   UNITED STATES

    CONTACT VOICE TELEPHONE   919.661.5872
    CONTACT FACSIMILE TELEPHONE   919.773.2935
    CONTACT ELECTRONIC MAIL ADDRESS
    https://apps.dot.state.nc.us/ContactUS/PostComment.aspx?Unit=Traff_Sur
    v
    HOURS OF SERVICE   8am to 5pm, M-F
    CONTACT INSTRUCTIONS
Phone or e-mail.

E-mail contact can be initiated through Traffic Survey's web page :
http://www.ncdot.org/doh/preconstruct/tpb/traffic_survey/ and clicking on the
Contact US link under Contact Information at the bottom of the page.

  RESOURCE DESCRIPTION   Downloadable Data
  DISTRIBUTION LIABILITY
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.

STANDARD ORDER PROCESS
DIGITAL FORM
DIGITAL TRANSFER INFORMATION
TRANSFER SIZE   1.082

AVAILABLE TIME PERIOD
TIME PERIOD INFORMATION
SINGLE DATE/TIME
CALENDAR DATE   2012-07-03
TIME OF DAY   unknown

Hide Distribution Information ▲

Metadata Reference ▶

METADATA DATE   2012-09-24
METADATA CONTACT
CONTACT INFORMATION
CONTACT ORGANIZATION PRIMARY
CONTACT ORGANIZATION   North Carolina Department of Transportation Traffic Survey Group
CONTACT PERSON   Traffic Data Request
CONTACT POSITION   Traffic Data Request
CONTACT ADDRESS
ADDRESS TYPE   mailing address
ADDRESS   1547 Mail Service Center
CITY   Raleigh
STATE OR PROVINCE   NC
POSTAL CODE   27699-1547
COUNTRY   UNITED STATES

CONTACT ADDRESS
ADDRESS TYPE   physical address
ADDRESS   750 N Greenfield Parkway
CITY   Garner
STATE OR PROVINCE   NC
POSTAL CODE   27529
COUNTRY   UNITED STATES

CONTACT VOICE TELEPHONE   919.661.5872
CONTACT FACSIMILE TELEPHONE   919.773.2935
CONTACT ELECTRONIC MAIL ADDRESS
https://apps.dot.state.nc.us/ContactUS/PostComment.aspx?Unit=Traff_Surv
HOURS OF SERVICE   8am to 5pm, M-F
CONTACT INSTRUCTIONS
Phone or e-mail.

E-mail contact can be initiated through Traffic Survey's web page :
http://www.ncdot.org/doh/preconstruct/tpb/traffic_survey/ and clicking on the
Contact US link under Contact Information at the bottom of the page.

METADATA STANDARD NAME   FGDC Content Standards for Digital Geospatial
Metadata
METADATA STANDARD VERSION   FGDC-STD-001-1998
METADATA TIME CONVENTION   local time

METADATA ACCESS CONSTRAINTS   None
METADATA USE CONSTRAINTS
The North Carolina Department of Transportation shall not be held liable for any
errors in this metadata. 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.
METADATA SECURITY INFORMATION
METADATA SECURITY CLASSIFICATION   Unclassified
METADATA SECURITY HANDLING DESCRIPTION
The North Carolina Department of Transportation shall not be held liable for any
errors in this metadata. 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.

APPENDIX 2. Quality Control Process

<div align="center">DCHC MPO GIS/Database/Web</div>

1. Data suppliers (data originators/producers, the person/entity we get the data from) select someone who is familiar with the quality of the source data to perform the QC check.
2. Reviewers check the layer for appropriate file format (shapefile, Geodatabase, and other formats for the final product it should be geodatabase only)
3. Reviewers check the data/layer name from the point of:
    a. The naming standard.
    b. Meaningfulness (can a layperson understand its meaning or content).
4. Reviewers check the coordinate system to ensure it meets the standard (NAD 83, State Plane, North Carolina, FIPS 3200 Feet, for elevation data vertical datum: NAVD88)
5. Reviewers check table field names.
    a. Meaningfulness and understandability (Does the name make sense? Can a first time user understand the meaning of the data contained within?).
    b. No spelling errors.
6. Reviewers query to database to check:
    a. Unique occurrence of fields (attributes). Duplicate fields should be removed. Fields containing no values should be removed.
    b. Meaningfulness of the attributes (Are any attributes confusing? need to change the field name?)
7. Compare the source data with the processed data layer (the final layer added to DCHC MPO geodatabase/SDE). Do this with all source maps.
8. Align (overlay) the data with the Geodatabase layer (final geodatabase layer) and look for exceptions or records that do not match
9. Display the Area field from smallest to largest if the feature class is a polygon and check the records with the smallest areas to identify "sliver" polygons - i.e. small polygons created from poor digitizing or data entry techniques.
10. Check the data with topology rules applicable for the data to make sure that data is topologically accurate/consistent. Correct data should have clean topology.
11. Reviewers check that metadata is complete and accurate. (Make sure DCHC MPO required fields do exist and are in the right place. During the migration to SDE, ESRI GIS generated fields (area, perimeter, shape, OID etc.) can cause the fields to slide, causing definitions to be matched with the wrong field. This needs to be corrected using metadata export/import tools to reorganize the metadata so that fields and their descriptions match.)
12. Reviewers check that a maintenance process document is completed and that the file is updated/stored.
13. Reviewers note any document correction and instruct the layer's suppliers or maintainer to correct the noted deficiencies.
14. Reviewers recheck the data once corrections have been made

15. Reviewers record the number of rechecks needed to pass on the signed compliance form. [Do we have such a form?]
16. Immediately following the passing of a QC process or test, the two individuals reviewing that process or test shall sign the QC compliance form and then forward that form to the GIS Manager (or designee). Data is then loaded to the production server on demand from the data supplier or maintainer.

APPENDIX 3. Compliance Form

<div align="center">DCHC MPO GIS/Database/Web
Compliance Form</div>

QC reviewers use this form to certify that the data has met Quality Standards.

I, _____, have checked the Quality of the data stated on this form and it is in compliance with the DCHC MPO GIS Data Standards. By signing this form, I acknowledge that I have completed the required tasks necessary to ensure data accuracy, correctness and completeness, and that I further understanding there may be disciplinary action should I knowingly misrepresent the accuracy, correctness or completeness of this data.

Data Layer Name:
Data Layer Creator\Maintainer:
Today's Date:
Signature (if not submitted from e-mail):_____

Please submit the above statement either in signed hardcopy or in Italics via e-mail (your email account) to the DCHC MPO Planning Manager.

Appendix 5. Notice of GIS Data

Notices may be e-mailed to the respective parties.
Notice of completed GIS data (sent to GIS /Database/Web Program Manager-Administrator/ or Designee)

By way of this email, I here by acknowledge that I have completed the development of the following GIS data:

Describe gis data here
Example –
Name: Zoning
Supplier: Steve Brown
Contact Information: Growth Management, 861-????
Description: This is a polygon layer containing zoning information used to make land development decisions. It contains the following attributes: zoning code, and code description.

Notice of New Data (sent to user community)
The following new GIS layer is now available for use:

Name: GIS.Floodplain
Supplier Name: Steve Doe
Contact Information: Watershed Management, 302-XXXX
Description: This is a polygon layer containing zoning information used to make land development decisions. It contains the following attributes: zoning code, and code description.

APPENDIX 5. NENA Standard Abbreviation List

STREET TYPE	SFEATYP	STREET TYPE	SFEATYP	STREET TYPE	SFEATYP
ALLEY	ALY	FORT	FT	PLAIN, PLAINS	PLN, PLNS
ANNEX	ANX	FREEWAY	FWY	PLAZA	PLZ
ARCADE	ARC	GARDEN, GARDENS	GDN, GDNS	POINT, POINTS	PT, PTS
AVENUE	AVE	GATEWAY	GTWY	PORT, PORTS	PRT, PRTS
BAYOU	BYU	GLEN, GLENS	GLN, GLNS	PRAIRIE	PR
BEACH	BCH	GREEN, GREENS	GRN, GRNS	RADIAL	RADL
BEND	BND	GROVE, GROVES	GRV, GRVS	RAMP	RAMP
BLUFF, BLUFFS	BLF, BLFS	HARBOR, HARBORS	HBR, HBRS	RANCH	RNCH
BOTTOM	BTM	HAVEN	HVN	RAPID, RAPIDS	RPD, RPDS
BOULEVARD	BLVD	HEIGHTS	HTS	REST	RST
BRANCH	BR	HIGHWAY	HWY	RIDGE, RIDGES	RDG, RDGS
BRIDGE	BRG	HILL, HILLS	HL, HLS	RIVER	RIV
BROOK, BROOKS	BRK, BRKS	HOLLOW	HOLW	ROAD, ROADS	RD, RDS
BURG, BURGS	BG, BGS	INLET	INLT	ROUTE	RTE
BYPASS	BYP	ISLAND, ISLANDS	IS, ISS	ROW	ROW
CAMP	CP	ISLE	ISLE	RUE	RUE
CANYON	CYN	JUNCTION, JUNCTIONS	JCT, JCTS	RUN	RUN
CAPE	CPE	KEY, KEYS	KY, KYS	SHOAL, SHOALS	SHL, SHLS
CAUSEWAY	CSWY	KNOLL, KNOLLS	KNL, KNLS	SHORE, SHORES	SHR, SHRS
CENTER, CENTERS	CTR, CTRS	LAKE, LAKES	LK, LKS	SKYWAY	SKWY
CIRCLE, CIRCLES	CIR, CIRS	LAND	LAND	SPRING, SPRINGS	SPG, SPGS
CLIFF, CLIFFS	CLF, CLFS	LANDING	LNDG	SPUR	SPUR
CLUB	CLB	LANE	LN	SQUARE, SQUARES	SQ, SQS
COMMON, COMMONS	CMN, CMNS	LIGHT, LIGHTS	LGT, LGTS	STATION	STA
CORNER, CORNERS	COR, CORS	LOAF	LF	STRAVENUE	STRA
COURSE	CRSE	LOCK, LOCKS	LCK, LCKS	STREAM	STRM
COURT, COURTS	CT, CTS	LODGE	LDG	STREET, STREETS	ST, STS
COVE, COVES	CV, CVS	LOOP	LOOP	SUMMIT	SMT
CREEK	CRK	MALL	MALL	TERRACE	TER
CRESCENT	CRES	MANOR, MANORS	MNR, MNRS	THROUGHWAY	TRWY
CREST	CRST	MEADOW, MEADOWS	MDW, MDWS	TRACE	TRCE

CROSSING	XING	MEWS	MEWS	TRACK	TRAK
CROSSROAD	XRD	MILL, MILLS	ML, MLS	TRAFFICWAY	TRFY
CURVE	CURV	MISSION	MSN	TRAIL	TRL
DALE	DL	MOTORWAY	MTWY	TRAILER	TRLR
DAM	DM	MOUNT	MT	TUNNEL	TUNL
DIVIDE	DV	MOUNTAIN, MOUNTAINS	MTN, MTNS	TURNPIKE	TPKE
DRIVE, DRIVES	DR, DRS	NECK	NCK	UNDERPASS	UPAS
ESTATE, ESTATES	EST, ESTS	ORCHARD	ORCH	UNION, UNIONS	UN, UNS
EXPRESSWAY	EXPY	OVAL	OVAL	VALLEY, VALLEYS	VLY, VLYS
EXTENSION, EXTENSIONS	EXT, EXTS	OVERPASS	OPAS	VIADUCT	VIA
FALL, FALLS	FALL, FLS	PARK, PARKS	PARK	VIEW, VIEWS	VW, VWS
FERRY	FRY	PARKWAY	PKWY	VILLAGE, VILLAGES	VLG, VLGS
FIELD, FIELDS	FLD, FLDS	PASS	PASS	VILLE	VL
FLAT, FLATS	FLT, FLTS	PASSAGE	PSGE	VISTA	VIS
FORD, FORDS	FRD, FRDS	PATH	PATH	WALK	WALK
FOREST	FRST	PIKE	PIKE	WALL	WALL
FORGE, FORGES	FRG, FRGS	PINE, PINES	PNE, PNES	WAY, WAYS	WAY, WAYS
FORK, FORKS	FRK, FRKS	PLACE	PL	WELL, WELLS	WL, WLS