

# **Data Collection Plan**

North Carolina Department of Transportation Strategic Transportation Corridor Vision Plans

#### Corridor D: US 321/CSX

(South Carolina state line to Tennessee state line)

Corridor U: US 74/CSX (I-26 in Polk County to US 117 in Wilmington)

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### 1. Introduction

In 2015, the NCDOT identified a network of key multimodal transportation corridors called Strategic Transportation Corridors (STC) to support smart planning, help set long-term investment decisions, and ensure that North Carolina's economic prosperity goals are achieved. The STC is intended to promote transportation system connectivity, provide high levels of mobility, and improve access to important state and regional activity centers throughout the state. A key element in the advancement of the STCs is the development of corridor master plans, with identification of a high-level corridor mobility vision and associated corridor improvement action strategies.

The purpose of the master plan is to identify a mobility vision and broad improvement strategies for an entire corridor, guide improvements and development in a manner that defines a long-term vision and performance level for the corridor, and help protect the corridor's key functions as defined in the corridor profiles. NCDOT has initiated the development of master plan visions for STCs D and U. Corridor D – US 321/CSX runs from the South Carolina state line to the Tennessee state line and Corridor U – US 74/CSX runs from I-26 in Polk County to US 117 in Wilmington.

Accurate data will serve as the foundation for master plan vision developments. The information available to define the corridors and their needs depends on the availability of complete, current, and reliable data. The Data Collection Plan (DCP) will identify data that is available, how it is to be collected, and the application of the data for corridors D and U. The DCP is a snapshot of the data needs envisioned for corridors D and U. As the development of the master plans progress the data will be vetted as to its application for the master planning efforts, and additional data needs and/or sources may be identified.

### 2. Data Analysis

The data collected for corridors D and U will be used for identification and evaluation of existing corridor conditions, identification and evaluation of future corridor conditions, and evaluation of existing and future freight activity/demands on the corridor including origins and destinations, routes, modes, and commodity types.

The analysis of conditions and performance of the master plans will include an analysis of physical, operational, and regulatory conditions and performance of freight transportation systems in the corridor, including identification of bottlenecks that prevent smooth freight flow. This analysis will identify capacity issues resulting from physical constraints, operational inefficiencies, and other corridor concerns. The analysis will focus on the mobility features in the corridors and services, such as capacity; it will not include assessing asset conditions, such as pavement or structure conditions.

#### 3. Data to be Collected

The data will be used to identify the current infrastructure as well as future improvements in the corridor and to evaluate the conditions in the corridor. Collection of "Transportation Facilities Inventory" data will allow for the evaluation of the current infrastructure in the corridor. "Transportation Plans" will identify anticipated improvements and expansion of the transportation system. The remaining data sets will be used to assess the conditions in the corridor as well as evaluate recommendations during the master plan vision development. Data sources included in **Table 1: Data Collection Requirements** along with stakeholder input will be used for the evaluation of existing and future travel demand and major travel markets along the corridor as well as person and freight mobility challenges and opportunities. The data gathered will also be used to develop and evaluate alternative multimodal passenger and freight mobility concepts.

If a website link is provided in the table, this data may be downloaded directly from the site referenced. Otherwise, the data will be obtained through coordination with the entity listed. The table also identifies the application, or how the data will be utilized toward meeting the objectives of the master planning efforts. Finally, the table includes a cursory assessment of the information provided by the data source. One drawback to infrastructure data is that it is not real-time. Condition information can be affected by natural causes, economic conditions, and route changes. Data about lower-priority infrastructure is likely to suffer from less frequent or inconsistent updates resulting in less accurate information. In addition, each data source for a transportation mode has its own strengths and limitations. This may be compounded by some local and regional data that may be inconsistent along the corridor.

#### Table 1. Data Collection Requirements

Data Elements	Data Sources	Means of Collection/Web Link	Data Date	Date Obtained	Application	Assessment
Highway Assets Inventory	NCDOT GIS	https://gis11.services.ncdot.gov/arcgis/rest/ser vices/NCDOT_StateMaintainedRoadsQtr/MapSe rver/0			Transportation Facilities Inventory Maps	Roadway attributes including: number of lanes, mileage, functional classification, facility capacity, railroad crossings, bridges
Bicycle Inventory	NCDOT Division of Bicycle and Pedestrian Transportation	https://connect.ncdot.gov/projects/bikeped/pag es/pbin.aspx	3/25/2014	2/15/2019	Transportation Facilities Inventory Maps	Location and attributes of existing bicycle and pedestrian facilities
Transit Inventory	Local and Regional transit providers	Data Request			Transportation Facilities Inventory Maps	Transit agencies would be able to provide transit routes and other transit infrastructure in their area.
Railroad Inventory	NCDOT Rail Division and Federal Railroad Administration	http://dotw- xfer01.dot.state.nc.us/gisdot/DOTRailroad/NC_ Rail_Track_SHP.zip and https://safetydata.fra.dot.gov/OfficeofSafety/pu blicsite/crossing/crossing.aspx	7/17/2019	8/27/2019	Transportation Facilities Inventory Maps	Location of existing at-grade rail crossing, public and private rail lines, including short line and improvements from grant funding.
Airport Inventory	NCDOT Division of Aviation	https://gis11.services.ncdot.gov/arcgis/rest/ser vices/NCDOT_Airports/MapServer/0	11/20/2013	2/15/2019	Transportation Facilities Inventory Maps	Location of existing airports and their expansion plans
Ports Inventory	North Carolina Ports Authority	Data Request			Transportation Facilities Inventory Maps	Location of existing ports and their expansion plans
Mobility Conditions	See Appendix A	See Appendix A: Additional Information on Mobility Conditions, Vision and Goals, and Performance Measures			Study Area Maps	Primary Activity Centers and mobility conditions including but not limited to key employers, foreign/free trade zones, major tourist destinations, hospitals, universities, colleges, trauma centers, k- 12 schools, public lands, and high-profile projects and studies.
Transportation Plans	NCDOT TPD, MPOs, NCDOT Divisions, Local Governments	CTPs - <u>https://connect.ncdot.gov/projects/planning/Pa</u> <u>ges/Comprehensive-Transportation-Plans.aspx</u> MTPs – Individual MPO websites Local Projects – Data Request Division Projects – Data Request			Identify planned transportation improvements and adopted recommendations (mapped)	MTPs and CTPs include projects to meet future transportation needs; MTIPs identify projects that are anticipated to be programmed. Consistency of the projects will be evaluated.
Statewide Bike/Ped Plan	WalkBikeNC	NC Bike Route Recommendations: https://www.ncdot.gov/bikeped/walkbikenc/pict ures/bikeroutes.pdf Program Recommendations: https://www.ncdot.gov/bikeped/walkbikenc/pict ures/ChapterSeven.pdf	2013		Identify planned bicycle and pedestrian improvements	Statewide bicycle/pedestrian plans identify existing, recommended improvements, and new facilities to handle future bicycle and pedestrian needs.

Data Elements	Data Sources	Means of Collection/Web Link	Data Date	Date Obtained	Application	Assessment
Statewide Transit Plan	NCDOT Public Transportation Division	<u>https://www.ncdot.gov/divisions/public-</u> <u>transit/statewide-strategic-</u> plan/Pages/statewide-strategic-plan- <u>documents.aspx</u>	2/18/2019		Identify planned transit improvements	Statewide transit plans identify existing, recommended improvements, and new facilities to handle future public transportation needs.
State Transportation Improvement Program	NCDOT – Division of Planning and Programming	STIP - https://connect.ncdot.gov/projects/planning/Pa ges/State-Transportation-Improvement- Program.aspx			Identify projects programmed in the STIP in a timeline table	STIP identify projects that are funded. Consistency of planned and programmed projects will be evaluated.
Feasibility Studies	NCDOT – Division of Planning and Programming	Data Request			Identify recommendations from completed feasibility studies along the corridor	Feasibility Studies provide a more expansive analysis of areas along the corridor.
Bicycle and Pedestrian Plans	NCDOT DBPT	https://connect.ncdot.gov/projects/bikeped/pag es/pbin.aspx			Identify planned bicycle and pedestrian improvements	Local bicycle/pedestrian plans and regional bicycle plans identify existing, recommended improvements, and new facilities to handle future bicycle and pedestrian needs.
Performance Measures	Wilmington Urban Area Metropolitan Planning Organization, Gaston-Cleveland- Lincoln Metropolitan Planning Organization (GCLMPO), French Broad River MPO, Cabarrus-Rowan MPO, Greater Hickory MPO, see Appendix A	See Appendix A: Additional Information on Traffic Generators, Vision and Goals, and Performance Measures			To produce a unified evaluation system for the STC network, it is necessary to understand what measures (if any) are currently being used for NCDOT and MPOs along the corridor.	Performance measures identified by NCDOT and MPOs to evaluate the transportation system's performance.
Local and Regional Visions	The same sources as are listed for performance measures, plus vision and goals from regional planning products produced by MPOs and RPOs in the area.	See Appendix A: Additional Information on Traffic Generators, Vision and Goals, and Performance Measures			To produce a unified vision for the STC network, it is necessary to understand what goals and visions (if any) are currently being used for NCDOT, MPOs, and RPOs along the corridor.	Transportation plans include goals and visions for the planning area and the transportation system.

Data Elements	Data Sources	Means of Collection/Web Link	Data Date	Date Obtained	Application	Assessment
LEP and Title VI Data	2011-2015 America Community Survey Data	Links to ArcGIS data layers used for CTP development are available at: <u>https://connect.ncdot.gov/projects/planning/Pa</u> <u>ges/TransPlanManualCTP.aspx</u>			Identify Title VI and other protected populations that need to be identified and accounted for in the Stakeholder Involvement Process and other aspects of the planning process	Specific protected populations are mapped to the census block group level.
Resiliency Model	Traveler Information Management System	https://tims.ncdot.gov/tims/			Identify areas of mudslides and flooding along the corridors	Map the locations of mudslides and flooding recurrences to identify areas for further study and evaluation.
Travel Markets	Truck commodity flows can be converted to less-than truckload (LTL) and truckload (TL) truck volumes. Commodity Flow Survey (CFS) micro data and truck count factors from existing TDMs in the corridor can be used to estimate truck volumes. The CFS micro database, includes shipment weight, distance, commodity code, origin, destination, and mode is used to The CFS micro data analysis results in the following shipment categories: a. Parcel shipments, b. LTL shipments: shipment weight between 150 and 10,000 lbs., c. Partial truckload shipments; shipment weight > 30,000 lbs.	NCDOT Statewide Freight Flows Access Tool includes 2045 forecast flows. <u>https://public.tableau.com/profile/cambridge.sy</u> <u>stematics#!/vizhome/NorthCarolinaFreightFlow</u> <u>Tool/Story1</u>	3/15/2018		Identify freight flows in the corridor	Current and forecasted truck trips in the corridor. Any consideration of rail capacity forecasting should be discussed. As a rule, Class 1 railroads oppose public sector attempts to estimate or forecast capacity on their assets.
Mobility Conditions (Baseline and Design Year)	NCDOT GIS, TPD	Data Request/FTS <a href="https://services.arcgis.com/NuWFvHYDMVmmx">https://services.arcgis.com/NuWFvHYDMVmmx</a> <a href="https://services/NCDOT_AADT_Stati">MeM/ArcGIS/rest/services/NCDOT_AADT_Stati</a> <a href="https://services/NCDOT_AADT_Stati">ons/FeatureServer</a>			To evaluate the current transportation system, as well as any recommended improvements	Existing traffic data for primary facilities along the corridor that have been collected or prepared by NCDOT.
Travel Demand Models	NCDOT TPD	Data Request/FTS			To evaluate the current transportation system, as well as any recommended improvements	Current statewide and regional (MPO) travel demand model sets in TransCAD files that model the primary transportation system.

Data Elements	Data Sources	Means of Collection/Web Link	Data Date	Date Obtained	Application	Assessment
Freight Flows	NC Multimodal Statewide Freight Plan - created a disaggregated Freight Analysis Framework Ver. 4 (FAF-4) dataset that combines several other sources for rail and air cargo flows. According to the Freight Flow Analysis Report, a tool was developed in MS Access Database. It does not say how the tool was made available to NCDOT.	Includes additional links for air, rail, and maritime cargo as well as a commodity flow analysis. <u>https://connect.ncdot.gov/projects/planning/Sta</u> <u>tewide-Freight-Plan/Pages/Supply-Chain-</u> <u>Logistics.aspx</u>			Identify freight flows in the corridor	Freight flow information from state or regional freight plans including: <b>Inbound flows</b> to locations across/within can be visualized as two components of the economy in the corridor: 1) Consumer goods (retail) and 2) Business process inputs (manufacturing & construction). <b>Outbound flows</b> represent domestic and international export trade supporting the economy in the corridor. <b>Through</b> <b>flows</b> or overhead freight have no origin or destination within the corridor that may contribute to congestion and associated externalities while creating no value to the local economy.
Additional GIS Data Layers	NCDOT TPD	See Appendix A: Base Map, Human and Environmental GIS Layers			Identify resources that may be in the study corridor	GIS data layers for various resources that is used for base maps and developing transportation plans.

## Appendices

### **Appendix A. Expanded Data Tables**

#### Table A-1. Additional Information on Traffic Generators, Vision and Goals, and Performance Measures

ltem	Sub-item	Geography	Link	Data Date	Date Obtained	Note
Traffic Generators	Foreign/Free Trade Zones	State	https://www.nccommerce.com/grants-incentives/tax-other-cost-savings#foreign-trade-zones-(ftz)			
Traffic Generators	High Profile Projects & Studies	State	https://gis11.services.ncdot.gov/arcgis/rest/services/NCDOT_STIP/MapServer/0 and https://gis11.services.ncdot.gov/arcgis/rest/services/NCDOT_STIP/MapServer/1			
Traffic Generators	Major companies (available by county, sorted by revenue)	State	https://edpnc.com/relocate-or-expand/available-sites-location-data/			
Traffic Generators	Tourist attractions	State	https://www.visitnc.com/things-to-do			Sort by city or region to find nearby attractions
Performance Measures	Gaston-Cleveland- Lincoln Metropolitan Planning Organization (GCLMPO)	MPO	http://gcImpo.org/wp-content/uploads/Chapter-03-Planning-Factors-and-Performance-Management.pdf			
Performance Measures	Charlotte Regional Transportation Planning Organization (CRTPO) (Charlotte MPO)	MPO	http://crtpo.org/PDFs/MTP/2040/Report/CRTPO_2040MTP.pdf			Note that CRTPO uses planning factors, not performance measures
Performance Measures	Comprehensive State Rail Plan	State	<u>https://connect.ncdot.gov/resources/Rail-Division-</u> Resources/Documents/2015%20Comprehensive%20State%20Rail%20Plan-%20Full%20Report.pdf			see page 72/284 for passenger rail performance evaluation metrics. Freight performance ties into NCDOT mission and goals, and input from public and private stakeholders, but is not evaluated in this document.
Performance Measures	French Broad River MPO	MPO	http://fbrmpo.org/wp-content/uploads/2015/09/MTP3.pdf			
Performance Measures	Greater Hickory MPO	MPO	http://docs.wixstatic.com/ugd/960958_c40b260d01154e3bb761bbbd2638c90b.pdf			See page 9/41 – uses planning factors
Performance Measures	National Measures	National	https://www.fhwa.dot.gov/tpm/ and https://www.govinfo.gov/content/pkg/FR-2017-01-18/pdf/2017-00681.pdf			

ltem	Sub-item	Geography	Link	Data Date	Date Obtained	Note
Performance Measures	NC Statewide Multimodal Freight Plan	State	https://connect.ncdot.gov/projects/planning/Statewide-Freight- Plan/Documents/NCDOT_SWFrtPIn_FinalReport_180209.pdf			See page 50/104 for freight rail performance measures
Performance Measures	NCARPO	State	http://www.ncarpo.org/uploads/1/3/8/1/13819061/updatedncarpo_oct_2017_pm_overview.pdf			Presentation by Daryl Vreeland on performance management given to NC Association of RPOs (October 2017)
Performance Measures	NCDOT Statewide Performance Measures	State	https://www.ncdot.gov/about-us/our-mission/Documents/2018-annual-report.pdf			
Performance Measures	Wilmington Urban Area Metropolitan Planning Organization	MPO	http://www.transportation2040.org/PDFs/CFT2040_adoptiondate_111815.pdf			See page 7/344 – uses planning factors
Vision & Goals	Gaston-Cleveland- Lincoln Metropolitan Planning Organization (GCLMPO)	MPO	http://gcImpo.org/wp-content/uploads/Chapter-02-Goals-Objectives-and-Policies.pdf			
Vision & Goals	Cape Fear RPO	RPO	http://capefearcog.org/wp-content/uploads/2016/04/Cape_Fear_Bicycle_Plan_FINAL_Main.pdf			See page 7/165 – Regional Bike Plan goals
Vision & Goals	Charlotte Regional Transportation Planning Organization (CRTPO) (Charlotte MPO)	MPO	http://crtpo.org/PDFs/MTP/2040/Report/CRTPO_2040MTP.pdf			See page 36/332 – start of goals and objectives
Vision & Goals	French Broad River MPO	MPO	http://fbrmpo.org/wp-content/uploads/2015/09/MTP3.pdf			
Vision & Goals	Greater Hickory MPO	MPO	http://docs.wixstatic.com/ugd/960958_c40b260d01154e3bb761bbbd2638c90b.pdf			See page 9/40
Vision & Goals	High Country RPO	RPO	http://www.regiond.org/Bike-Plan-2014-final.pdf			See page 8/118 – goals and objectives for the Regional Bike Plan
Vision & Goals	Isothermal RPO	RPO	https://isothermalrpo.org/wp-content/uploads/2015/05/ipdc_lcp_2013fa.pdf			See page 18/50 – not visions or goals per se, but a list of needs and strategies

Item	Sub-item	Geography	Link	Data Date	Date Obtained	Note
Vision & Goals	Lumber River RPO	RPO	https://docs.wixstatic.com/ugd/269399_f107716257c747ec8f54609d696ad7c1.pdf			Not visions or goals per se, but a list of needs and strategies for the locally coordinated human services public transportation plan
Vision & Goals	National Goals	National	https://www.fhwa.dot.gov/tpm/about/goals.cfm			
Vision & Goals	NCDOT Mission & Goals	State	https://www.ncdot.gov/about-us/our-mission/Pages/goals-vision.aspx			
Vision & Goals	Greater Charlotte Regional Freight Mobility Plan	Greater Charlotte Bi-State Region	http://www.rockyriverrpo.org/wp-content/uploads/2016/01/Greater-Charlotte-Regional-Freight-Mobility-Plan- 2016.pdf			See page 37/68 – Greater Charlotte Regional Freight Mobility Plan

#### Table A-2. Base Map, Human and Environmental GIS Layers

Data Elements	Data Sources	Means of Collection/Web Link	Data Date	Date Obtained	Application	Assessment
County Boundaries	NCDOT	https://connect.ncdot.gov/resources/gis/Pages/GIS-Data-Layers.aspx	First Quarter Annually	8/27/19	Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans.
MPO Boundaries	NCDOT	https://connect.ncdot.gov/resources/gis/Pages/GIS-Data-Layers.aspx	First Quarter Annually	8/27/19	Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans.
Municipal Boundaries	NCDOT	https://connect.ncdot.gov/resources/gis/Pages/GIS-Data-Layers.aspx	2018	8/27/19	Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans.
Hurricane Evacuation Routes	NC One Map	http://data.nconemap.gov/downloads/vector/her.zip	8/3/2007	2/15/2019	Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans and for NEPA/SEPA analysis.
Rivers and Streams	NCDOT	NCDOT TPD Environmental Layers Spreadsheet with links to GIS data	4/23/2010	2/15/2019	Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans and for NEPA/SEPA analysis.
Scenic Byways	NCDOT	https://www.arcgis.com/home/item.html?id=f3605dcd4af64a09aec7932b7625082e	Last Update 7/17/19		Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans and for NEPA/SEPA analysis.
State Parks	NCDOT	http://data.nconemap.gov/geoportal/catalog/main/home.page	July 2019	8/27/19	Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans and for NEPA/SEPA analysis.
Primary Activity Centers		Data request			Identify resources that may be in the study corridor and used for mapping	
Colleges and Universities	NCDOT	http://data.nconemap.gov/geoportal/catalog/main/home.page	Last Update 9/11/07 by Techni Graphic Systems.	8/27/19	Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans and for NEPA/SEPA analysis.

Hospitals	NCDOT	http://data.nconemap.gov/geoportal/catalog/main/home.page	Last Update 9/20/08 by Techni Graphic Systems	8/27/19	Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans and for NEPA/SEPA analysis.
Schools- Non-Public	NCDOT	http://data.nconemap.gov/geoportal/catalog/main/home.page	March 2017	9/27/19	Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans and for NEPA/SEPA analysis.
Schools- Public	NCDOT	http://data.nconemap.gov/geoportal/catalog/main/home.page	Last Update 8/6/12 by NCCGIA	8/27/19	Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans and for NEPA/SEPA analysis.
AADTs/Traffic Volumes	NCDOT	https://connect.ncdot.gov/resources/State-Mapping/Documents/ncdot-2015-traffic-segments.zip and https://connect.ncdot.gov/resources/State-Mapping/Pages/Traffic-Volume-Maps.aspx	2015		Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans and for NEPA/SEPA analysis.
Bicycle Routes	NCDOT	https://connect.ncdot.gov/resources/gis/Pages/GIS-Data-Layers.aspx	Last Update 05/12/13 by NCDOT and ITRE	8/27/19	Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans and for NEPA/SEPA analysis.
Ferries	NCDOT	https://services.arcgis.com/NuWFvHYDMVmmxMeM/arcgis/rest/services/NCDOT_FerryRoutes/FeatureServ <u>er</u>	Last Update 8/12/15		Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans and for NEPA/SEPA analysis.
National Highway System (National Highway Planning Network)	FHWA	https://maps3.arcgisonline.com/ArcGIS/rest/services/A- 16/FHWA_National_Highway_Planning_Network/MapServer	2013		Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans and for NEPA/SEPA analysis.
Ports	Ports Authority	Data request			Identify resources that may be in the study corridor and used for mapping	
Railroads	NCDOT	https://connect.ncdot.gov/resources/gis/Pages/GIS-Data-Layers.aspx	Quarterly updated by NCDOT	8/27/19	Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans and for NEPA/SEPA analysis.
Regional Trails	NCDOT	NCDOT TPD Environmental Layers Spreadsheet with links to GIS data	Last update June 2013 by NCDENR `DPR		Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans and for NEPA/SEPA analysis.

Roadways	NCDOT	https://connect.ncdot.gov/resources/gis/Pages/GIS-Data-Layers.aspx	Quarterly updated by NCDOT	8/27/19	Identify resources that may be in the study corridor and used for mapping	GIS data layer used for developing transportation plans and for NEPA/SEPA analysis.
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