

Traffic Forecasting Location Map

Description

The purpose of this procedure is to develop a Traffic Forecast Location Map that fulfills the following requirements:

- Accurately displays the traffic forecast area, including all relevant roadways.
- Identifies all appropriate political boundaries.
- Identifies significant water bodies, including rivers and streams for bridge replacement projects.

Includes other information that may have an impact on the traffic forecast, such as the locations of major new developments.

Responsibility

The *TPB Assigned Forecaster (AF)* is responsible to create a Traffic Forecast Location Map for each project assigned.

Scheduling and Time Constraints

None.

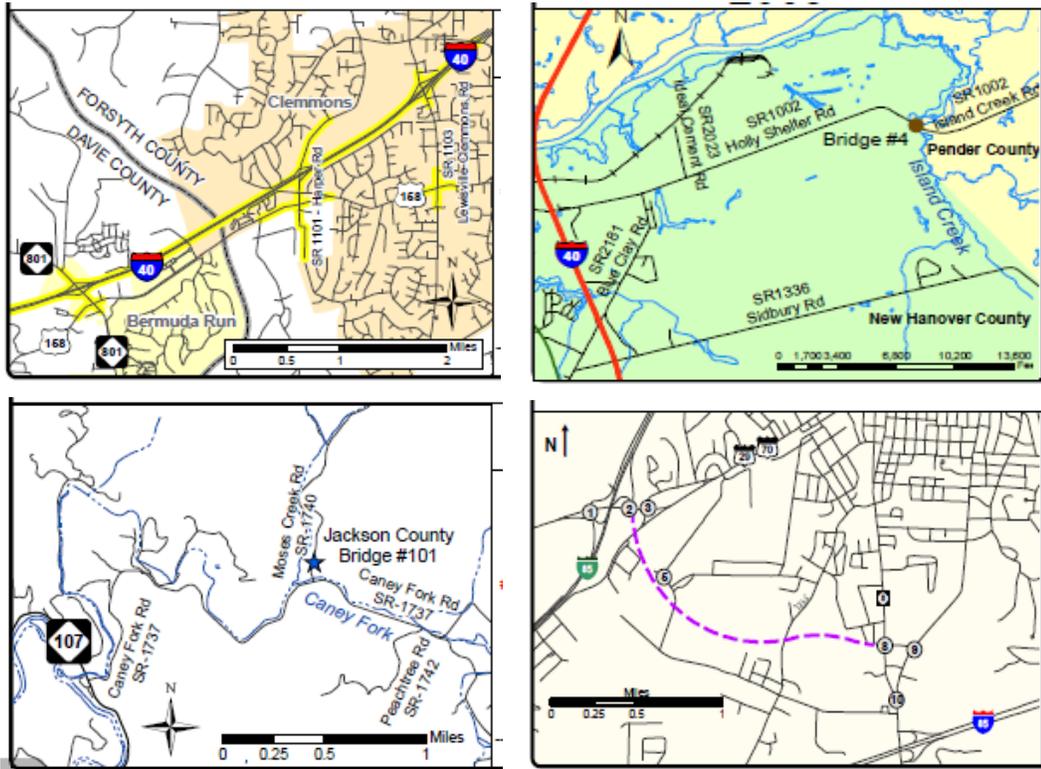
Procedure

Step	Action
1	<p>Prepare Location Map</p> <p>There are a variety of ways / programs which can be used to develop the Location Map. The Location Map must provide the information as outlined below, and have the general appearance as described, however the AF may use any source or program as they deem appropriate to deliver the product.</p>
2	<p>Elements required in the Location Map:</p> <ul style="list-style-type: none"> • Roads, Labels and Road Shields <ul style="list-style-type: none"> ○ Interstate Highways ○ US Highways ○ NC Highways ○ Appropriate State and Local Roads • North Arrow • Appropriate Political Boundaries <ul style="list-style-type: none"> ○ State ○ County ○ Municipal • Appropriate Water Features (Required for bridge replacement projects) <ul style="list-style-type: none"> ○ Streams and rivers ○ Other major water bodies

- Scale Bar (optional)
- Begin and end of project (optional)
- At the discretion of the AF, if the scale permits, intersections can be numbered (in circles) on BOTH the forecast and the corresponding location on the Location Map to assist orientation of the user.

See [Traffic Forecast – Diagrams](#) Procedure and / or the shared drive S:/ Traffic Forecast Tools / Forecast Standard Figures for the appropriate location / size of the Location Map in the Forecast Diagram.

Examples of Location Maps:



- 3 The methodology below describes the use of a GIS application.
Load and review all applicable GIS data layers using ArcMap or other appropriate GIS application software. Collect GIS data layers:
 - Collect GIS data layers including roads, boundaries and water features within the project area from the Resource tab on the CTP GIS Data Layers spreadsheet S:\Shared\TPB Reference\Comprehensive Transportation Plan. Links and datasets on this spreadsheet are regularly updated. . A variety of data can be downloaded from the [NCOneMap](https://connect.ncdot.gov/resources/gis/Pages/GIS-Data-Layers.aspx) or NCDOT GIS unit data portal <https://connect.ncdot.gov/resources/gis/Pages/GIS-Data-Layers.aspx>
 - Use the GIS application to locate the roads to be included in the traffic forecast.
- 4 Determine the location map aspect ratio:
 - Estimating aspect ratio: The Traffic Forecast Location Map will be included on the same page as the forecast diagram. Therefore, it is necessary to estimate how

	<p>much space will be needed for the Traffic Forecast Location Map and what aspect ratio (width: height) will be required.</p> <ul style="list-style-type: none"> • Selecting A Standard Traffic Forecast Diagram Template: The amount of space required for the Traffic Forecast Location Map will vary depending upon the complexity and size of the traffic forecast and is a major consideration when selecting a Standard Traffic Forecast Diagram Template to be used with the forecast diagrams. A variety of Standard Traffic Forecast Diagram Templates are available at S:\Traffic Forecast Tools\Forecast Standard Figures. See the Traffic Forecast Diagram Procedures for more information.
5	<p>Set the map aspect ratio within the GIS application to match the Traffic Forecast Location Map aspect ratio determined in Step 4.</p> <p>The aspect ratio of the Traffic Forecast Location Map should not be altered once it is inserted into the Traffic Forecast Diagram. If the aspect ratio or size of the Traffic Forecast Location Map needs to be altered, it should be changed within the GIS document and then re-inserted into the Traffic Forecast Diagram.</p>
6	<p>Layer all of the GIS data layers in a manner that ensures that all of the layers are visible.</p>
7	<p>Adjust the scale and the position of the Traffic Forecast Location Map within the GIS application to make sure that all of the roads applicable to the traffic forecast are included on the map.</p>
8	<p>Graphically define the forecast extents:</p> <ul style="list-style-type: none"> • Identify the beginning and the end of the project. • Identify future roads to be built on new alignment.
9	<p>Identify the location and nature of any other geographic information that may have an impact on the traffic forecast, such as the locations of major new developments.</p>
10	<p>Define the symbology of all layers:</p> <ul style="list-style-type: none"> • County and State boundaries are symbolized with an appropriate dashed pattern. • Municipal boundaries are symbolized with an appropriate dashed pattern or shown as shaded areas. • Existing roads are symbolized with solid dark lines. • Future roads to be built on new alignment are symbolized with a pattern that is significantly differentiated from the symbology of the existing roads layer. • Water features are symbolized with an appropriate hydrology pattern that is significantly differentiated from the symbology of the existing roads layer and the future roads layer.
11	<p>Label all layers:</p> <ul style="list-style-type: none"> • County and state boundaries are labeled parallel to the boundary line. • Municipal boundaries are labeled with a horizontal label placed within the municipal boundary if possible. If a label will not fit conveniently within the municipal boundary, a horizontal label is placed next to the municipality. • Interstate Highways, US Highways and NC Highways are labeled with the appropriate horizontal shield centered on the roadway, • All state and local roads are labeled with their SR number and name based upon general relevance and as space permits.

	<ul style="list-style-type: none"> • Water bodies are labeled with a horizontal label placed within the water boundary. • Streams and Rivers are labeled parallel to their center lines. <p>All of the text on the Traffic Forecast Location Map should be clearly legible. Due to rescaling that may be necessary when the Traffic Forecast Location Map is inserted into the Traffic Forecast Diagram; care should be taken to make sure all of the text remains legible after rescaling.</p>
12	Add a north-arrow, graphic scale-bar in miles (optional) and save the map.
13	<p>Add the location map to the forecast diagram:</p> <ul style="list-style-type: none"> • If using CADD or Diagramming software, such as Visio, to create the forecast diagram: <ul style="list-style-type: none"> ○ Export a graphic of the Traffic Forecast Location Map from the GIS application to a file with a graphic format that is compatible with the CADD/Diagramming software being used. ○ Insert the Traffic Forecast Location Map graphic into the appropriate space on the Traffic Forecast Diagram as defined by the Standard Traffic Forecast Diagram Template being used. See the Traffic Forecast Diagram Procedures for more information. • If using a GIS application, such as ArcMap, to create the forecast diagram: <ul style="list-style-type: none"> ○ Insert the Traffic Forecast Location Map into the appropriate space on the Traffic Forecast Diagram as defined by the Standard Traffic Forecast Diagram Template being used. See the Traffic Forecast Diagram Procedures for more information.

Policy, Regulatory, and Legal Requirements

None.

Resources

- Resource tab at CTP GIS Data Layers spreadsheet
S:\Shared\TPB Reference\Comprehensive Transportation Plan
- Suitable CADD/Diagramming Software: Visio, ArcGIS, MicroStation, etc.
- Standard Traffic Forecast Diagram Templates (S:\Traffic Forecast Tools\Forecast Standard Figures)

Background

The Traffic Forecast Location Map is a required section of the standard Traffic Forecast Diagram. Standard Traffic Forecast Diagram Templates are available at S:\Traffic Forecast Tools\Forecast Standard Figures. ArcMap, PDF and Visio versions are available. (See the Traffic Forecast Diagram Procedures for more information.)

The Traffic Forecast Location Map, prepared in accordance with these procedures, will provide a better and more immediate understanding of the Traffic Forecast Diagram by serving as an important link between the abstract Traffic Forecast Diagram and the real-world topography of the roads and other features in the project area.

The Traffic Forecast Location Map also provides an important reference point during discussions about the project area and the traffic forecast.

It is expected that the AF will use appropriate business practices and judgment as required of engineering level staff. This procedure does not cover all possible circumstances.

Record of Revision

The information contained in this procedure is deemed accurate and complete when posted. Content may change at any time without notice. We cannot guarantee the accuracy or completeness of printed copies. Please refer to the online procedure for the most current version.

Version	Section Affected	Description	Effective Date
1.1	Responsibility & Procedures	Formatting	02/05/2010
2	Entire Procedure	New template, updated links	2/5/2013

Flowchart