

Traffic Forecasting Technical Policy Manual

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Overview

Introduction

The North Carolina Department of Transportation (NCDOT) is the state agency responsible for improving, operating and maintaining the state's transportation system. Within NCDOT, the Transportation Planning Division (TPD) and its local partners are responsible for long range transportation planning. While the Transportation Planning Division focuses on identifying long range needs and potential improvements, staff are also responsible for providing travel demand information to support project-level design decisions. Project-level traffic forecasts are key inputs into project design studies, roadway and intersection design, pavement design, and environmental studies which lead to the construction of transportation improvements.

Purpose of this manual

The purpose of this manual is to present and describe the policies of the Transportation Planning Division related to the preparation of a traffic forecast for the NCDOT. These policies must be satisfied for the Traffic Forecasting Group (TFG) to approve a traffic forecast.

Limitations of this manual

This manual is not designed as an instructional guide on how to prepare a traffic forecast. It is the responsibility of the Forecaster to have sufficient skills and judgment in transportation planning to apply the policies contained within this manual during the development of a traffic forecast.

Further information on the process of developing a traffic forecast and guidance for preparing a traffic forecast is provided in other publications, which are described in the following section.

Relationship between manuals

This manual is one of several publications by the Transportation Planning Division which relate to traffic forecasting. These publications, used as a collective whole, are intended to provide the forecaster a complete guide for the definition and development of a traffic forecast.

- The *Traffic Forecasting Administrative Policy Manual*. This publication describes the process of requesting, developing, reviewing, and delivering a traffic forecast. It also describes the roles and responsibilities of the various people involved in that process.
- The *Traffic Forecasting Technical Policy Manual*. This publication describes the technical requirements which must be satisfied for the TFG to approve a traffic forecast.
- Traffic forecasting technical guidance. This series of publications elaborate upon and support the content of the two aforementioned documents. Detailed

guidance and procedures related to the development of a traffic forecast are offered to help the Forecaster prepare a traffic forecast that can be approved by the TFG.

Variations

A variance to the policies presented within this Manual may be requested by the forecast requester or the Forecaster in writing to the Traffic Forecasting Group (TFG) Supervisor. The reason for the variance must be explained as part of the variance request. Appeals to any decision made by the TFG Supervisor may be directed to the TPD Technical Services Unit Head.

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1. Definition of Persons and Non-technical Terms

Forecaster The person who is assigned the task of preparing a traffic forecast for NCDOT. This person can be from the staff of the TFG, the TPD, other divisions within the NCDOT, or from the staff of a Professional Engineering Firm (PEF).

Model Research & Development Group The group within TPD responsible for the development and maintenance of travel demand models. This group is also the custodian of most travel demand models within the State of North Carolina.

NCDOT Project Manager The person in overall charge of a planning, preconstruction, or construction project for NCDOT. This person may be from the central office or from a highway division office.

PEF Professional Engineering Firm (PEF). A firm under contract with the NCDOT to provide professional services which has been determined by the NCDOT to be qualified to perform professional services in project level traffic forecasting.

Technical Services Unit Head The person serving as head of the TPD Technical Services Unit. The Technical Services Unit Head manages the following Groups:

- Model Research & Development Group
- Statewide Initiatives Group
- Traffic Forecasting Group
- Traffic Survey Group

TPD The Transportation Planning Division (TPD) of the NCDOT.

Traffic Forecast The official document that contains information about current and/or future vehicular traffic volumes for use in developing a specific roadway improvement project. The Traffic Forecast is intended to provide sufficient information for decision-makers to determine one or more long-range planning, programming, project development and/or final design aspects of a roadway improvement project (defined as physical and/or operational improvements within the public right-of-way).

A traffic forecast may be in the form of a traffic estimate or a project-level traffic forecast. Both products consist of a traffic forecast technical report and the graphical presentation of traffic data. The difference is that a traffic estimate includes less information than a project-level traffic forecast. The policies within this manual apply to both products where applicable.

- *Traffic Estimate*: A technical document with sufficient traffic information to support long-range planning, project programming, and early phases of project development. The purpose of a traffic estimate is to help determine a purpose and need for a highway project as well as the number of through lanes which are required for a highway facility. A traffic estimate typically is limited in scope to current and future-year Annual Average Daily Traffic (AADT) for roadway segments, therefore, some of the policies contained in this Manual do not apply to a traffic estimate.
- *Project-Level Traffic Forecast*: A technical document that contains sufficient current-year and/or future-year traffic statistics to support design decisions for a roadway improvement project. A project-level traffic forecast usually includes AADT volumes for through and turning movements, truck percentages, peak hour factors and directional distribution for the study area network. Traffic statistics for the base year (customarily the current year) and one or more future years are provided.

Traffic Forecasting Group (TFG)

The organizational unit within TPD which is responsible for the following:

- Creation and promulgation of standards relating to traffic forecasting,
- Production of traffic forecasts, and
- Review and approval of traffic forecasts prepared by PEFs.

Traffic Forecasting Group Supervisor

The head of the Traffic Forecasting Group with general supervision over traffic forecasting processes, technical standards, and personnel.

TFG Project Manager

The working title for staff persons within the TFG who receive requests for traffic forecasts, and/or manage the preparation of traffic forecasts by PEFs.

Traffic Survey Group

The organizational unit within TPD responsible for the collection, analysis, maintenance and publishing of traffic data and statistics.

2. Statement of Purpose

Policy	The purpose for preparing the Traffic Forecast must be stated within the traffic forecast technical report.
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Discussion	<p>An understanding of the purpose for preparing the traffic forecast, through a clear statement of purpose, is intended to provide the following benefits:</p> <ul style="list-style-type: none">• helps the Forecaster and the TFG Project Manager to determine an appropriate scope for the Traffic Forecast,• informs the reviewer of the context of the Traffic Forecast, and• helps the user to avoid unintended and inappropriate use of the Traffic Forecast.
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Guidance	Further guidance regarding the statement of purpose may be found in <i>forthcoming link</i> in TPD's <i>Planning Manual</i> on the NCDOT Connect website.
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3. Disclosure of Assumptions

Policy Assumptions must be made in developing base year build and future year forecasts. These assumptions shall be explicitly stated in the traffic forecast technical report.

Discussion Because base year build, future year no-build, and future year build conditions are unknown, the Forecaster will need to make assumptions about what conditions are expected in those scenarios of the Traffic Forecast. Because these assumptions are an important basis of the Traffic Forecast, it is necessary for the Forecaster to disclose all assumptions as part of the record of decisions documented in the traffic forecast technical report.

Assumptions usually need to be made on topics such as the following:

- population
 - employment
 - economic development
 - other transportation projects
 - land use
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Guidance Further guidance regarding assumptions for specific topics may be found in [*forthcoming link*](#) in TPD's *Planning Manual* on the NCDOT Connect website.

4. Fiscal Constraint

Policy	Fiscal constraint shall be applied to all traffic forecast scenarios.
Definition	<p>Fiscal constraint is an accounting of the effect of all transportation projects which may affect the Traffic Forecast. A fiscally constrained transportation project has the following characteristics:</p> <ul style="list-style-type: none">• is expected to be open to traffic by the year of the scenario being considered, and• has a funding commitment through official action by any government agency within North Carolina as of the date of the Traffic Forecast.
Discussion	<p>Traffic forecast scenarios for future year(s) must assume that all fiscally constrained transportation projects for the year of the scenario, and all preceding years, are complete and open to traffic.</p> <p>Funding commitment typically occurs when a transportation project is included in any of the following:</p> <ul style="list-style-type: none">• State Transportation Improvement Plan (STIP),• MPO Metropolitan Transportation Plan (MTP),• Regional government agency capital improvement program, or• Local government agency capital improvement program. <p>This policy is intended to provide for the following:</p> <ul style="list-style-type: none">• consistent application of fiscal constraint when preparing a traffic forecast,• consistent comparison of traffic volumes between alternative improvement projects, and• understanding the effect of other transportation projects on the project for which a traffic forecast is being prepared.
Variance: Non-fiscally constrained scenarios	<p>The NCDOT Project Manager may stipulate that a non-fiscally constrained traffic forecast scenario be prepared to support project development. A non-fiscally constrained scenario may then be prepared to supplement the fiscally constrained scenarios within the Traffic Forecast.</p> <p>Note: The Forecaster must clearly identify any forecast scenario that is not fiscally constrained. Identification is usually made by a label on the traffic</p>

forecast diagram and by a section heading in the traffic forecast technical report.

Guidance

Guidance regarding how to apply Fiscal Constraint in the development of a traffic forecast may be found in [forthcoming link](#) in TPD's *Planning Manual* on the NCDOT Connect website.

5. Base Year Scenarios

Policy: no-build scenario A base year (BY) No-Build scenario shall be part of the Traffic Forecast.

Policy: build scenario A base year (BY) Build scenario may be required if stipulated by the NCDOT Project Manager in consultation with the TFG Project Manager.

Definition The **base year** (BY) is the year for which the most recent traffic data is available. The current year is usually used as the base year. Sometimes a previous year is used as the BY, for example, when a traffic forecast needs to be coordinated with the traffic forecast for an adjacent project.

Definition The **no-build scenario** assumes that the transportation project which is the subject of the traffic forecast is not built and open to traffic.

Definition The **build scenario** assumes that the transportation project which is the subject of the traffic forecast *is* built and open to traffic.

Discussion A BY scenario is a necessary part of a Traffic Forecast. Future year (FY) forecast volumes are usually built upon BY volumes. The Forecaster must understand the current state of traffic within the forecast area in order to understand the possible effects of the planned roadway improvement.

Guidance Further guidance regarding the scoping of base year scenarios may be found in [forthcoming link](#) in TPD's *Planning Manual* on the NCDOT Connect website.

6. Future Year Scenarios

Policy: no-build scenario A future year No-Build (FYNB) scenario shall be part of the Traffic Forecast.

Policy: build scenario A future year Build (FYB) scenario shall be part of the Traffic Forecast if the proposed project is expected to substantially change travel demand due to the attraction or diversion of traffic. If a FYB scenario is not needed, then the reason must be clearly documented in the traffic forecast technical report.

Definition The *future year* (FY) is the year for which traffic is projected to for the purpose of roadway design. The future year is typically twenty years beyond the current year, and customarily corresponds to the horizon year of the official travel demand model for the area of the project.

Definition A *no-build scenario* assumes that the transportation project which is the subject of the traffic forecast is *not* built and open to traffic.

Definition A *build scenario* assumes that the transportation project which is the subject of the traffic forecast *is* built and open to traffic.

Exception: FYNB scenario The NCDOT Project Manager may stipulate that a FYNB scenario is not needed to support project development. A FYNB scenario is then not required to be part of the Traffic Forecast.

Note: The Forecaster must explain why a FYNB scenario is not needed in the traffic forecast technical report.

Discussion: Why no-build and build scenarios are necessary In order for a planned improvement to satisfy NEPA requirements, it must be demonstrated that the improvement meets the stated Purpose and Need. One way to demonstrate that Purpose and Need is met is to show how traffic is affected by the improvement. The Traffic Forecast may be used as part of the information in establishing Purpose and Need.

Discussion:
When a FY Build scenario may not be required

A future year (FY) Build scenario may *not* be required when:

- construction of the proposed project is not expected to substantially change travel demand on any roadway within the forecast study area, or
- specific improvements have not yet been identified for the project.

Note: The Forecaster must clearly explain why a FY build forecast is not required within the traffic forecast technical report.

Guidance

Further guidance regarding the scoping of future year forecast scenarios may be found in [*forthcoming link*](#) in TPD's *Planning Manual* on the NCDOT Connect website.

7. Previous Traffic Forecasts and Traffic Forecasts for Adjacent Projects

Policy: Previous traffic forecast The previous Traffic Forecast for the project which a new traffic forecast is being prepared must be considered by the Forecaster.

Policy: Other Traffic Forecasts Traffic Forecasts for other projects in the vicinity of the project for which a Traffic Forecast is being prepared must be considered by the Forecaster.

Policy: Disclose differences between Traffic Forecasts Differences between the Traffic Forecast being produced, any previous Traffic Forecast for the project, and any Traffic Forecast for adjacent projects shall be disclosed and explained in the traffic forecast technical report.

Discussion It is important for the Forecaster to understand the history of traffic forecasts for a project. The Forecaster will need to explain any differences between forecasts in anticipation of questions by users of the Traffic Forecast. An update to the travel demand model for an area, which may include changes to inputs such as socio-economic data and transportation facilities, may create the need to update the Traffic Forecast for a project.

Additionally, it is important for the Forecaster to be aware of any traffic forecasts for adjacent transportation projects. It may be highly desirable to coordinate traffic forecasts so as to avoid unreasonable, abrupt changes to roadway design between two projects.

Guidance Further guidance regarding the fulfillment of these policies and what aspects should be compared between adjacent traffic forecasts may be found in [forthcoming link](#) in TPD's *Planning Manual* on the NCDOT Connect website.

8. Use of the Official Travel Demand Model

Policy: Use of the Official Travel Demand Model

The Official Travel Demand Model shall be considered during the development of the Traffic Forecast where one is current and valid.

Policy: Check base year network

Base year (BY) highway network attributes must be checked for consistency with actual BY conditions. This check may be limited to those facilities which affect travel demand within the traffic forecast study area.

Policy: Check future year networks

Future year (FY) highway network attributes must be checked for consistency with all fiscally constrained transportation projects. This check may be limited to those facilities which affect travel demand within the traffic forecast study area.

Policy: Correct inconsistencies

Inconsistencies between the Official Travel Demand Model and associated fiscally constrained transportation plans must be corrected by editing and re-running the model.

Policy: Compare population figures

County-level population figures for the base year and the future year used as input into a model shall be compared to the estimates and projections published by the State Demographer. The Forecaster shall explain in the traffic forecast technical report how any inconsistencies affect the Traffic Forecast.

Policy: Report changes

All changes made to an Official Travel Demand Model must be disclosed and reported in the traffic forecast technical report.

Policy: Use of the NCSTM

The North Carolina Statewide Transportation Model (NCSTM) may only be used to develop traffic forecasts in areas which are not covered by an Official Travel Demand Model.

Definition

The ***Official Travel Demand Model*** is the travel demand model (TDM) for a specific geographical area that has been adopted or endorsed by the respective local board, MPO TAC, or model executive committee. The model will include the Base Year (BY) and all Future Years (FY).

The **official model set** is a compilation of TDM associated files that will provide a potential user the ability to replicate the results of the official model at the time of its adoption. The Official Model Set must include all files and data that are required to successfully run the TDM and reproduce previously obtained results.

Further information about Official Travel Demand Models may be found at the following link on TPD’s *Planning Manual* on the NCDOT Connect website:

<https://connect.ncdot.gov/projects/planning/TransPlanManuals/Official%20Travel%20Demand%20Model%20Guidance-2020Mar6-v2.1.pdf>

Purpose

The purpose of these policies is to ensure that the Forecaster properly considers the output of a valid TDM when preparing the Traffic Forecast.

Discussion: Use of the Official Travel Demand Model

The Official Travel Demand Model – when one exists for an area – is the best available tool to use in developing a traffic forecast, however, it is necessary to check the model for all of the following:

- Consistency with population data produced by the State Demographer. Local officials may have adopted a different set of population data for use as model input.
 - Consistency with transportation projects within the current corresponding MPO Metropolitan Transportation Plan. Errors of omission and commission occasionally occur during model development and use.
 - Fiscal constraint when using small area models initially developed to support a Comprehensive Transportation Plan (CTP). Often models such as these include all transportation projects within the CTP – some of which are not funded at the present time.
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Discussion: Use of the NCSTM

The North Carolina Statewide Transportation Model (NCSTM) is not appropriate to use in developing a traffic forecast when an Official Travel Demand Model is available because of the following substantial limitations:

- the NCSTM is not consistent with population data produced by the State Demographer,
- the NCSTM only includes statewide and regional tiered roadways, and select sub-regional tier roadways that provide connectivity and access,
- the NCSTM is not calibrated at the individual link level, and
- the NCSTM is not fiscally constrained to Metropolitan Transportation Plans.

The NCSTM may be consulted for travel demand information in areas not covered by an Official Travel Demand Model, however, the Forecaster must be cognizant of the limitations presented above.

Exceptions

The Official Travel Demand Model may not need to be considered when:

- the highway network and/or the socio-economic inputs are out-of-date, and cannot be readily updated (this applies only to models outside of an MPO area), or
- the project roadway is not part of the model highway network.

Note: The Forecaster must explain in the traffic forecast technical report why the Official Travel Demand Model was not considered.

Guidance

Guidance regarding how to obtain and use TDMs may be found in [forthcoming link](#) in TPD's *Planning Manual* on the NCDOT Connect website.

9. Contacting Government Agencies and Businesses

Policy Appropriate local government agencies and businesses must be contacted to obtain information about economic development that may affect travel demand within the study area.

Discussion Assumptions regarding local land use and development need to be made in developing the traffic forecast. The Forecaster is expected to reasonably consult with local agencies and businesses to obtain information about land use and development.

Municipal and county planning and building departments are usually the best source of information about economic development such as approved and pending site plans, subdivision plats, and commercial building permits. These agencies may also have information about local events which may temporarily affect the volume and/or pattern of traffic.

NCDOT Highway Division and District offices may have information regarding highway connection permits and the development associated with the permits. Information about traffic detours due to maintenance or construction work is also available.

Businesses which employ a large number of people or create a large demand for shipping may be willing to share their plans for expansion or contraction.

Information obtained from these agencies must be summarized in the Traffic Forecast Technical Report.

Guidance Further guidance regarding local contacts may be found in [forthcoming link](#) in TPD's *Planning Manual* on the NCDOT Connect website.

10. Land Use

Policy: Investigate land use Current land use and planned future land use within the traffic forecast study area must be investigated. Any changes to land use between the base year (BY) and future year (FY) shall be described within the traffic forecast technical report.

Policy: Disclose land use assumptions Assumptions regarding base year and future year land use conditions shall be disclosed within the traffic forecast technical report.

Discussion It is critically important for the Forecaster to understand the land use factors listed below in order to be able to assess their effect on travel demand:

- the nature of current land use and development within the project area,
- future land use plans for the project area;
- socio-economic data inputs for both the BY and the FY in the Official Travel Demand Model; and
- residential, commercial, and institutional development which has been approved or permitted by a local government agency but is not yet constructed or occupied, and is not reflected in the SE data within the local Official Travel Demand Model.

The expansion or contraction of land use activity can be the primary basis of projecting growth in a traffic forecast.

Guidance Further guidance regarding how to fulfill these policies may be found in [*forthcoming link*](#) in TPD's *Planning Manual* on the NCDOT Connect website.

11. Population

Policy: Projections by the State Demographer Population estimates and projections published by the State Demographer shall be considered in the development of the Traffic Forecast.

Policy: Disclose population assumptions Assumptions regarding population shall be disclosed in the traffic forecast technical report.

Discussion Local government officials may adopt population data that is different from the State Demographer for use in land use and transportation planning studies. It is important for the Forecaster to understand the existence of different population estimates for the project area and to recognize that different population estimates may result in different traffic forecasts. This policy does not require the Forecaster to use any one source of population estimates, but to consider the estimates published by the State Demographer when preparing the Traffic Forecast.

The Forecaster is expected to provide the following information in the traffic forecast technical report:

- display and explain any differences in population estimates between local sources and the State Demographer, and
 - disclose what population estimates are assumed for the Traffic Forecast.
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Guidance Further guidance regarding how to fulfill these policies may be found in [forthcoming link](#) in TPD's *Planning Manual* on the NCDOT Connect website.

12. Collecting and Processing Traffic Count Data

Policy: The collection and processing of short-term traffic counts, including the estimation of current year AADT, K-factors, Directional Percentages and Truck Percentages based on such counts, shall be consistent with methods developed by, approved, or published by the NCDOT Traffic Survey Group (TSG).

Discussion Use of a consistent approach to collecting and processing traffic counts, and the conversion of those counts into traffic statistics, is essential for quality assurance. Traffic data that is collected and processed for use in developing a traffic forecast may be shared within NCDOT for other purposes.

Guidance Guidance relating to these policies may be found at the following sources:

- Traffic Monitoring Guide (2016), FHWA
Available for download on the FHWA website
<https://www.fhwa.dot.gov/policyinformation/tmguide/>
- Guide to Traffic Data Programs (2009), AASHTO
Available for purchase at the AASHTO Store <https://store.transportation.org/>
- Traffic Data Collection Specifications (2018-21), NCDOT Mobility & Safety
available for download on the Traffic Safety webpage on the NCDOT website
<https://connect.ncdot.gov/resources/safety/Pages/Traffic-Data.aspx>
- Information regarding Traffic Survey Group methods and processes are available on the group webpage on the NCDOT website
<https://connect.ncdot.gov/resources/State-Mapping/Pages/Traffic-Survey-Group.aspx>
Contact information is provided on that webpage and you can contact TSG staff for additional information.

Further guidance regarding how to fulfill these policies may also be found in [*forthcoming link*](#) in TPD's *Planning Manual* on the NCDOT Connect website.

13. AADT

Policy: Provide AADTs AADT for each segment of the mainline and for intersection turning movements shall be provided in the Traffic Forecast.

Policy: Balanced AADTs AADT must be balanced for individual intersections as well as along the roadway mainline.

Policy: Base Year AADT Historical AADT published by the NCDOT Traffic Survey Group shall be considered, where available, when developing Base Year AADT.

Policy: Future Year AADT Multiple sources of information pertaining to traffic projections and estimates, and future land use, shall be considered when developing Future Year AADT.

Definition: AADT Annual Average Daily Traffic (AADT) is the average of the daily volumes traveling at a location for a year. This volume is estimated from short-term counts by seasonally factoring daily volume totals, typically using monthly day of week factors. If a short-term count was collected as axle pairs, an axle factor must be applied to convert to volume counts.

Definition: Balancing Balancing means that all traffic entering an intersection also exits that intersection (for individual intersections); and that all traffic entering a corridor will exit the corridor.

Discussion The Forecaster is expected to consider more than one source of information when developing AADT.

When developing BY AADT, the Forecaster is expected to consider historical AADT published by the NCDOT Traffic Survey Group as well as short-term traffic counts. BY AADT derived only from short-term traffic counts is not acceptable if additional sources of data are available.

When developing FY AADT, the Forecaster is expected to consider many sources of information including the following:

- historical AADT published by the NCDOT Traffic Survey Group,
- population data published by the State Demographer,
- Official Travel Demand Model output,

- Comprehensive Transportation Plan (CTP),
 - Metropolitan Transportation Plan (MTP), and
 - municipal and/or county land use plans
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Guidance

Further guidance regarding how to fulfill these policies may be found in [forthcoming link](#) in TPD's *Planning Manual* on the NCDOT Connect website.

14. Peak Hour Traffic Forecast

Policy Peak hour traffic statistics shall be provided within the Traffic Forecast. The volume and direction of traffic occurring during both the AM and the PM peak hour of an average weekday shall be provided for each roadway segment within the traffic forecast study area.

Definitions **Peak hour traffic** is the volume of traffic which occurs during the four highest consecutive 15-minute intervals. The AM peak hour typically occurs at some time between 0600 and 1000 hours. The PM peak hour typically occurs at some time between 1600 and 1800 hours. However, the peak hour depends upon local conditions – the character of traffic using a roadway and the land use served by a roadway.

“**K**” is the proportion of AADT occurring in an hour. It is calculated by dividing a count for one hour of traffic by AADT (not the total traffic for that day).

Note: “**K**” is different than K_{30} (the 30th highest hour volume of the year). Sufficient data to determine K_{30} is usually not available.

“**D**” is the Directional Distribution of traffic, which is expressed as the percentage of total traffic flowing in the highest direction during the K hour.

Discussion Peak hour traffic is used by the project development team to analyze current and future traffic performance. Volume and direction for the both the AM and PM peak hour are necessary because it should not be presumed that directional traffic flow for these two periods of a day are reciprocal.

Peak hour traffic is usually presented as K and D factors. These factors will need to be determined for each roadway segment within the traffic forecast study area and presented in the traffic forecast technical report.

Guidance Further guidance regarding how to fulfill this policy may be found in [forthcoming link](#) in TPD’s *Planning Manual* on the NCDOT Connect website.

15. Truck Traffic

Policy The number of trucks, as a proportion of the AADT, shall be provided for each roadway segment included in the Traffic Forecast. This proportion shall be shown as two percentages: the percentage of single-unit trucks, and the percentage of trucks with semi-trailer.

Definitions *Single-unit (SU) trucks* are FHWA Vehicle Classes 4 through 7 combined. *Trucks with semi-trailers (TTST)* are FHWA Vehicle Classes 8 through 13 combined.

Discussion The number and type of trucks using a roadway is important to project planning and design including the following aspects:

- Pavement design. The structural design of pavement is primarily dependent upon the heavy axle loads generated by commercial traffic.
- Level of Service calculations.
- Noise studies.
- Air quality studies.

Guidance Further guidance regarding the definition of trucks and how to fulfill this policy may be found in [forthcoming link](#) in TPD's *Planning Manual* on the NCDOT Connect website.

16. Traffic Forecast Technical Report

Policy A traffic forecast technical report shall be prepared to support the Traffic Forecast. The report shall be submitted to the Traffic Forecasting Group for review and approval.

Definitions A **traffic forecast technical report** presents the data collected for a traffic forecast; an explanation of how the data was used in developing the forecast; disclosure of future-year assumptions relating to land development, population, and transportation facilities; description of analytical tools used; and the results of the traffic forecasting process. A technical report also includes the graphical presentation of the conclusions of a traffic forecast.

Graphical presentation of traffic data may take the form of tables, maps, and/or schematic diagrams, appropriate to the traffic forecast. Traffic data is summarized and presented graphically to make it readily available and understandable for users of a traffic forecast.

Required content The technical report shall include the following background information:

- The purpose of the traffic forecast (see Section 2).
- Name, working title, and organization of the person who is requesting the traffic forecast.
- Travel demand model used and how it was edited (see Section 8).
- Local government agencies and businesses that were contacted and what information was provided (see Section 9).
- Traffic forecasts for adjacent projects that were considered (see Section 7).
- How the traffic forecast compares with previous traffic forecasts for the project (see Section 7).

Presentation and explanation of the following topics are required:

- AADT, including what traffic data was collected and how it was analyzed (see Sections 12 and 13).
- Daily turning movements for all intersections (see Section 13).
- Peak hour volumes (see Section 14).
- Truck factors (see Section 15).
- Future year assumptions regarding population, and land use, and fiscally constrained transportation projects (see Section 3).

Benefits of a technical report

A well-documented and complete technical report is required to support the Traffic Forecast. A technical report provides the following benefits:

- allows the TFG Project Manager to conduct a meaningful review of the draft Traffic Forecast,
 - allows other reviewers to understand the basis of the Traffic Forecast,
 - facilitates the determination of the need to update the Traffic Forecast, and
 - provides potential answers to questions from users of the Traffic Forecast.
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Guidance

Further guidance regarding the form and content of a technical report, including the graphical presentation of data, may be found in [*forthcoming link*](#) in TPD's *Planning Manual* on the NCDOT Connect website.
