



PROJECT LEVEL TRAFFIC FORECASTING

Administrative Procedures Handbook



May 3, 2011

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North Carolina Department of Transportation

Purpose of Handbook

There are two specific purposes of this handbook.

- The first purpose is to give the public, traffic forecast customers, and decision makers a general synopsis of the NCDOT traffic forecasting process and procedures.
- The second purpose is to provide staff who perform traffic forecasts and persons who request traffic forecasts a high level idea of what can be expected during each phase of the process.

To achieve these goals, this handbook includes background information concerning project-level traffic forecasts and a synopsis of general methodology for performing forecasts. The traffic forecasting process is ever evolving as we develop new tools and provide expanded services. We expect this handbook to change as this process matures.

This document does not provide sufficient details to be used as a technical manual – it does not describe specific steps, requirements, or resources necessary to develop a project level traffic forecast.

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Administrative Procedures Handbook

Transportation Planning Branch, NCDOT

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This Document replaces the previous Handbook, dated 9/28/05, revised 1/29/07

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WEB LINK

<http://www.ncdot.org/doh/preconstruct/tpb/PLANNING/forecast.html>

CHAPTER 1: INTRODUCTION

1.1 Background

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 Branch and its local partners are responsible for long range transportation planning. While the Transportation Planning Branch focuses on identifying long range needs and potential improvements, staff are also responsible for providing data to support project level decisions. The Transportation Planning Branch provides an efficient delivery of travel demand forecasts for use in implementation of a coordinated transportation system to adequately serve present and anticipated traffic and land development needs for the State. Project-level traffic forecasts are key inputs into feasibility studies, roadway and intersection design, pavement design, and environmental studies which lead to construction of transportation improvements. Project-level traffic forecasts estimate future traffic volumes, including intersection movements, for a defined study corridor.

Also fundamental to a project-level traffic forecast is a report that details the data inputs, assumptions, analysis tools, and results of the forecasting process. A well-documented forecast is essential for the approval of the traffic forecast and application of the results in the project development process. In subsequent years, good documentation will facilitate necessary forecast updates and review procedures.

1.2 Uses of the Project-Level Traffic Forecast

Engineers and forecasters in the Planning and Traffic Forecasting Units perform and review more than 200 comprehensive, project-level traffic forecasts each year. Comprehensive, accurate, and timely travel demand forecasts are provided to a variety of customers, including:

- (1) the Feasibility Studies Unit of the Program Development Branch to analyze benefits and prepare preliminary cost estimates for use in the development of the Transportation Improvement Program;
- (2) the Project Development and Environmental Analysis Branch for the purpose of documenting Purpose & Need, preparation of preliminary designs, environmental reviews, and selecting and evaluating alternative alignments in NEPA documents;
- (3) the Roadway Design Branch for the purpose of designing and preparing the construction plans;
- (4) the Pavement Management Unit for the purpose of selecting and designing the type of pavement to be used for roadway improvements;

- (5) the Traffic Engineering and Safety Systems Branch for the purpose of evaluating capacity analysis of facilities and designing signal systems and traffic operational improvements;
- (6) the Bridge Maintenance Unit for the purpose of selecting bridge types and preparing construction plans;
- (7) the Fourteen Division Offices for use in making maintenance and minor roadway improvement decisions;
- (8) Consultants working for NCDOT on projects to assure accuracy, cost and consistency with related travel demand studies.

1.3 Output

A traffic forecast is comprised of three elements: a transmittal memo to the requestor; graphical representation of the traffic volumes; and a report. Without all three elements being completed and appropriately distributed, the forecast is not considered complete.

The memo to the requestor contains pertinent information, including basic assumptions made in the forecast. These assumptions would include projects assumed built in the future year in addition to the project under study, basic information as to methodology (if a transportation demand model was used), and other elements as determined by the Forecaster .

The graphical representation (forecast figures) of the traffic forecast indicates 24-hour volumes for through and turning movements including design factors (percent trucks, directional distribution and peak hour factor) for the study area network for both a base year as well as one or more future years. The future year should be at least 20 or 25 years from the base year.

The report for the official file should include the data used in developing the forecast along with an explanation of how the data was used in developing the forecast.

Current procedures call for a hard copy of the forecast cover letter and forecast figures to be provided to the forecast requester. Electronic copies are distributed to other NCDOT business units. Where available, the full forecast documentation is stored electronically in Project Store under the LongRangePlanning folder.

The output of all project-level traffic forecasts is similar; however, the analysis used to arrive at the 24-hour volumes differs from project to project depending on the complexity of the study area, data available, and many other factors. The specific traffic variables forecast for a project-level traffic forecast are shown below.

1. Average Annual Daily Traffic (AADT) – The AADT is the total volume that a roadway link carries during 24 hours on an average day for a given year.

NCDOT Traffic Survey Unit applies seasonal and daily factors to daily traffic count data to estimate an AADT for a roadway link. AADT information by county is distributed by the Traffic Survey Unit. This information can be found in on the internet at

<http://www.ncdot.org/travel/statemapping/trafficvolumemaps/default.html>

2. Intersection Movements – Intersection movements are estimates of through movements, left turn movements, right turn movements, and occasionally u-turn movements which are determined for each pertinent intersection in the study area. Some projects require turning movements for heavily used driveways or parking lot entrances. Forecasts for corridors with truck stops, major distribution facilities, or shopping centers connected to roads by driveway access in the study area may require driveway movements. The intersection movements will typically be represented by quadrant moves. In some specific cases, such as for one way streets or complicated interchanges, individual intersection movements as identified below may be represented. Typically turning movements are only given where the total entering volume is in excess of 1,000 vpd.
3. Design K Factor (K) – The K factor is the DHV expressed as a percentage of the AADT, or $K=DHV/AADT$. K factors differ by location and facility type. NCDOT has automatic traffic recorders located throughout the state which count traffic for all hours of the year. From these counts, the K factor can be calculated. Typically the K factor is estimated by examining traffic counts taken for the specific forecast, and additionally comparing with related sites which do have automated traffic recorder stations.
4. Directional Split (D) – The D factor is the percentage of the DHV traveling in the direction of major flow on two-way roadways. The imbalance of traffic in two-way flows is usually greatest during the peak periods.
5. Direction Arrow – The Direction Arrow on the diagram is pointed in the direction of major flow during the designated peak hour (typically PM peak).
6. Truck Percentage – A truck percentage for a roadway link is the average annual average daily volume of some classification of heavy vehicle divided by the total AADT. Typically, percentages are provided for Dual-tired vehicle classification and the TTST classification. In this context, Duals mean single-unit trucks with typically at least one dual-tired axle. TTSTs (Truck, Tractor, Semi-Trailer) are multi-unit trucks, including both single and twin trailers. Requirements for truck data in the forecasting process will be expanded in the future particularly as the data needs for pavement design become more specific.

CHAPTER 2: THE FORECASTING PROCESS

The process of developing a traffic forecast typically varies by the locale of the project [whether within a Metropolitan Planning Organization (MPO) or Rural Planning Organization (RPO)] and the complexity of the improvement. Although each traffic forecast is unique and the amount of work associated with each step varies based on these primary parameters, the typical process shown below should be followed whenever possible. At all stages of the forecasting process, the assigned forecasting staff must provide sound documentation (e.g. design year for planning, socio-economic and truck data, area development potential, etc.). The typical process is detailed as follows:

1. Prior to requesting a traffic forecast, the requestor shall review the background data for the project. Accurate maps should be obtained and reviewed. Project descriptions should be developed. A project number to charge work to should be obtained. Assumptions should be clearly identified and documented. A reasonable due date target should be identified. The actual forecast request should be prepared on the standard form shown. The form is periodically updated to reflect input and comments received, so the requestor should always check the Transportation Planning Branch web site for the most recent edition of the form.

http://www.ncdot.org/doh/preconstruct/tpb/PLANNING/FORECAST_REQUEST_FORM.doc

The form (a copy of the current form is in Appendix A), and accompanying mapping should be sent to the State Traffic Forecast Engineer (STFE), currently Deborah Hutchings, PE by e mail. Please note that incomplete requests will result in delays of the forecast, as they must be returned to the requestor to get the full information needed to provide the proper product.

2. All requests for traffic forecasts must be sent through the State Traffic Forecast Engineer, and will be recorded in Department's project tracking database by the State Traffic Forecast Engineer. This would include revisions to the scope of a current forecast, or updates of past forecasts.

It should be noted that revisions in scope will require additional time and a new target due date will be established.

3. Within two weeks of receipt, the State Traffic Forecast Engineer will evaluate the request for compliance with the standards as noted in this manual (including project data provided and target due date). For incomplete requests, the State Traffic Forecast Engineer will return the request to the requestor for completion of the information, mapping, or other missing data, prior to entering the project into the Department's project tracking database. When resubmitted, the request will be issued the new date in the project tracking database. The official date of the request shall be the date that the complete request is received by the State Traffic Forecast Engineer.

4. Upon receipt of a complete traffic forecast request, the State Traffic Forecast Engineer will review current workloads and assign the forecast accordingly. Forecasts may be assigned to the regional Planning Group, Traffic Forecasting Group staff or on-call consultant staff (hereinafter referred to as the "Assigned Forecaster"). The State Traffic Forecast Engineer will forward an electronic copy of the request to the assigned engineer / planner / forecaster, and the appropriate Group Supervisor(s).
5. Within two weeks of receiving the assigned request the Assigned Forecaster must initiate discussions with the requestor to clarify the request and assumptions, receive information on scheduled scoping meetings and field reviews and discuss a target due date based on the information known at that time. This discussion could take place informally or formally in a meeting. It is vital that all assigned planning engineers/ forecasting modelers participate, when possible, in scoping meeting, field reviews, etc. in order to become more familiar and stay abreast with the project details under study.
6. Within two weeks of receiving the assigned request the Assigned Forecaster will determine the due date (including providing two weeks for internal Transportation Planning Branch review). If the Requester and Assigned Forecaster are unable to agree on a date, then the State Traffic Forecast Engineer will immediately be notified and work to resolve the issue. The due date is to be established within two weeks of the Assigned Forecaster receiving the request, with the requestor and the State Traffic Forecast Engineer being notified in writing (via e-mail).
7. The process as shown in the Traffic Forecasting Flow Chart in Appendix B begins with the Receive / Initiate Forecast Phase. The project work and research in this phase includes:
 - Initiate discussion with planning project engineer(s) responsible for project area under study to determine all possible data (model volumes, current and future developments, flow patterns, etc.).
 - Identify base and future years. Typically, the base year is the year that the analysis is performed. Usually the forecast year is 25 to 30 years into the future, but it may vary depending on the circumstances such as the horizon year for a transportation demand model.
 - Collection and review of previously completed traffic forecast projects at location or within the area under study.
 - Develop project and area work maps (counties, rural, urban, etc.).
 - Request traffic counts and turning movement counts at appropriate locations (as necessary). Typically, it is not cost efficient or practical to collect turning movements at location with less than 1,000 ADT. Special justification should be given for requesting turning movements at these locations. The Assigned Forecaster will make request(s) via letter or e-mail to the Traffic Survey Group allowing for an eight to ten weeks return rate of the requested product. All traffic counts and

turning movement count requests must include the count classification sheet giving project description, county location, intersections descriptions and sketches, route locations, functional classifications, facility types, truck spur count designations, etc.

8. After receiving an assigned project, the Assigned Forecaster will perform additional background research in order to become knowledgeable with the project specifics. This are considered the Collect Data and Contacts Phases as detailed in the Traffic Forecasting Flow Chart in Appendix B. This includes:

- Develop graphic sketches for project forecast using appropriate software. Graphic sketches of assigned project(s) should be completed prior to performing actual travel forecasting technique(s).
- Perform field investigation(s), to observe travel flow patterns (AM and PM peaks), current land use and potential growth areas (e.g. residential, farm, and industrial uses), trucks routes, identification of traffic data collection locations, etc. A final review or additional field trips may be necessary to collect pertinent data due project requirements or changes.
- Collection of historical travel data trends (short and long term).
- Collection of current and projected socio-economic data (employment, population, land use, etc.).
- Collect and analysis of old volume counts and turning movements.
- The Assigned Forecaster will make contacts as appropriate with city/county planning staff, regional council of governments, economic development directors, development recruiters, consultants, and other NCDOT Division staff to assess growth potentials (population, land use, etc.), flow patterns, environmental concerns, and other travel demand details. When appropriate, the staff will schedule appointments to meet with the transportation officials for further discussion on project details. Document all communications with transportation officials.

9. The Forecast Development and Analysis Phase as detailed in the Traffic Forecasting Flow Chart in Appendix B begins here. The Assigned Forecaster will make preliminary forecast(s) using the following technique(s) as appropriate:

- Graphical Analysis
- Linear and Exponential Regression Analysis
- Travel Demand Models (such as TransCAD, Tranplan, etc.)
- Engineering judgment growth rates, plot, equations based on historical travel trends, socio-economic activity trends, future land use growth potential, availability alternate routes and modes.

- Analyze preliminary forecast estimates by comparing to national, statewide, regional, county, and municipal trends. Check for consistency in travel demand patterns and truck percentages by examining previously completed forecast projects, origin and destination studies, highway statistical reports, and volume counts.
 - Refine traffic forecast estimates with careful consideration of truck percentages (vital to highway and pavement design). Develop K factors, Directional Distribution %, and Truck % for all major routes and y-lines considered in project.
10. The Traffic Forecasting Flow Chart final Phase is Quality Control and Distribution.
- The supervisor of the Assigned Forecaster will perform all final review of projects and accompanying documentation. The Assigned Forecaster will coordinate the review with their supervisor.
 - A minimum of two weeks prior to the due date, the Assigned Forecaster forwards to the State Traffic Forecast Engineer the draft forecast (cover letter, figures and documentation). The State Traffic Forecast Engineer will review the project for consistency with Transportation Planning Branch standards, as well as distribute to other appropriate staff for formal technical review.
 - The forecast is then distributed according to the current Transportation Planning Branch standards. Currently the Requester receives a hard copy in addition to an electronic copy of the cover letter and forecast diagrams. Others, both internal to the Transportation Planning Branch and other NCDOT Business Units, receive electronic copies of the cover letter and forecast diagrams. When available, the State Traffic Forecast Engineer will save in Project Store a copy of those documents, along with the forecast documentation.
11. The State Traffic Forecast Engineer will update the forecasting database to show completion of the project.

CHAPTER 3: FORECASTING RESPONSIBILITY MATRIX

3.1 Responsibility

The traffic forecasting process is long and complicated. This responsibility matrix has been designed to be a quick reference for each person in the process. Simply review the section under your role to gain an understanding of what we expect from you and what you can expect of us.

3.2 Requestor

As the requestor, you are our primary customer. We want to meet your needs, but we need your help to do so. The first and foremost responsibility of the requestor is to be thoroughly familiar with and know the project prior to requesting a forecast. The following items should guide you.

- Prior to requesting a traffic forecast, the requestor shall review the background data for the project. Accurate maps shall be obtained and reviewed. Project descriptions shall be developed, with project termini designated. Better mapping will produce a better and more timely forecast. If hearing maps are available, copies are greatly appreciated.
- The “Project Level Traffic Forecast Request Form” as available on the NCDOT includes information as to standard timelines, assumptions and products in a traffic forecast. It provides locations on the form to specifically note any deviations needed from the standard product.
- The Requester should complete the most current “Project Level Traffic Forecast Request Form” as available on the NCDOT website: <http://www.ncdot.org/doh/preconstruct/tpb/PLANNING/forecast.html>
- Data required on the Form includes:
 - A “WBS” project number (for the Forecaster to charge work to) shall be obtained prior to requesting the forecast, and included on the request form.
 - A forecast shall only be provided for those intersections as specifically requested. A complete listing of intersections where turning movements are needed shall be provided for each alternative / alignment. Be sure to include intersections on the no-build alignment for bypass projects.
 - A reasonable target due date shall be identified. While the Requester can indicate that a forecast is not needed for an extended period of time, the request should allow for a minimum of:
 - A minimum of four months for a routine Bridge Forecast.
 - A minimum of five months for a routine widening traffic forecast.

Complex forecasts, and those on new location, should be allotted more than seven months.

- Requesting “expedited” forecasts - in less time - is strongly discouraged, as to do so will require the Transportation Planning Branch to delay a project currently in queue so as to insert the “expedited” forecast. When an “expedite” is absolutely necessary, the requestor shall obtain appropriate signatures, as well as identify on the form potential forecasts (from the same geographic region of the State) which may be delayed to accommodate the requested expedite. This allows the requesting business unit to make the determination of the priority of their projects relative to one another. The State Traffic Forecast Engineer coordinate a final schedule of forecasts affected by the expedite request.
- The requestor should interpolate intermediate years of a forecast, unless the forecast documentation explicitly says otherwise.
- If at any time during the forecasting process, any information changes or if the project is canceled, the requestor shall immediately notify the State Traffic Forecast Engineer, using the Traffic Forecast Request Form. *It should be noted that changes in the project (additional intersections needed, change in due date, or other changes, even if seemingly minor) will result in a revised, later due date.*
- The Requester will receive written confirmation (e-mail) typically within two weeks of the request, which will notify you of the Assigned Forecaster.

3.3 Transportation Planning Branch Administrative Staff

The Administrative staff plays a role in ensuring that forecasts are handled in a timely manner.

- Traffic forecast requests shall be promptly forwarded to State Traffic Forecast Engineer.
- Processing / copying and other handling of forecasting information.
- Routine filing of traffic forecasting information.

3.4 State Traffic Forecast Engineer (STFE)

The State Traffic Forecast Engineer is responsible for managing the forecasts and assigning the work either internally, or coordinating with the Manager for on-call consultants. The STFE should take into account existing workloads, current vacancies, knowledge of the area, and past experience with particular forecasts when determining the assignment.

- State Traffic Forecast Engineer will review current workloads and assign the forecast accordingly. Forecasts may be assigned to Planning Group staff, Traffic Forecasting Group staff or on-call consultant staff. The State Traffic Forecast Engineer will consult with both the appropriate Regional Planning

Group Supervisor and Traffic Forecasting Group Supervisor prior to assigning the forecast whenever possible.

- Within two weeks of receipt, the STFE will evaluate the request for compliance with the standards as noted in this manual (including project data provided and target due date). For incomplete requests, the STFE will return the request to the requestor for completion of the information, mapping, or other missing data, prior to entering the project into the Department's project tracking database.
- The STFE enters information concerning the Forecast and the status of the Forecast into various files and databases, including: the Transportation Planning Branch database for forecasts: Project Trac; NCDOT's STaRS tracking system; Forecast Status spreadsheet (used for tracking current forecasts and includes data needed for employee reviews); and hardcopy intake files.
- In the case of a traffic forecast request being properly requested to be "expedited" (signed by the appropriate official in the originating Branch) the State Traffic Forecast Engineer shall coordinate with the appropriate staff in the originating Branch to finalize the forecasts to be delayed to accommodate the expedite request.
- If there is a problem with the assigned forecaster arriving at an acceptable date the State Traffic Forecast Engineer will be available to assist the forecaster by attending a meeting set up by the forecaster with the affected parties.
- The State Traffic Forecast Engineer shall review all forecasts for format, and distribute forecasts to appropriate Group Supervisors for technical review by their units.
- Updates on the status of all assigned projects will be periodically provided to the Branch Manager, Unit Heads and Group Supervisors.
- The STFE will review the Scope of Work for Consultants providing Project Level Traffic forecast services to NCDOT (whether directly for the Transportation Planning Branch or under contract to other Business Units). The STFE will work to develop man day estimates as needed.
- The STFE will coordinate review for Consultant forecasts and coordinate a single formal response coming from the reviews.

3.5 Forecasting and Planning Group Staff (Assigned Forecaster)

The Assigned Forecasters are ultimately responsible for the quality and timeliness of the traffic forecast. The accepted process and procedures shall be followed for each forecast received. Particular emphasis should be placed on communication and documentation.

- It is vital that all Assigned Forecasters participate in scoping meeting, field reviews, etc. in order to become more familiar and stay abreast with the project details under study.

- Within two weeks of receiving the assigned request the Assigned Forecaster will provide written confirmation to the requestor of any discussions, and the project due date. This confirmation is via e-mail. Copies of this correspondence should be sent to the supervisor and State Traffic Forecast Engineer.
- The Assigned Forecaster will collect data, develop analysis, and document the forecast in accordance with Branch standards.
- The Assigned Forecaster will provide the draft traffic forecast (the cover letter, forecast diagrams and forecast documentation) to their supervisor for review and acceptance.
- The Assigned Forecaster will forward the draft traffic forecast (the cover letter, forecast diagrams and forecast documentation) to the State Traffic Forecast Engineer at least two weeks prior to the due date to distribute for review and comments.
- The Assigned Forecaster shall prepare and distribute the standard transmittal letter and forecast.
- The Assigned Forecaster shall provide appropriate documentation for the files.

3.6 Traffic Forecasting and Planning Group Supervisors

The Traffic Forecasting and Planning Group Supervisors in the Transportation Planning Branch play a key role in ensuring that the forecasts follow the accepted practice, are suitable for the requested use, take into account any other known applicable information and are delivered on time. In general, the Supervisory staff will meet the following expectations:

- Keep abreast of Branch standards and provide technical and policy guidance when necessary throughout the forecasting process to their staff.
- The supervisor is responsible for reviewing all forecasts in their unit and making sure that the various forecasts throughout their geographic area are consistent.
- The Group Supervisor of the Assigned Forecaster for a given project is directly responsible for:
 - Review and approval of the forecast **before the Assigned Forecaster submits the draft forecast to the State Traffic Forecast Engineer for the formal review process**. This includes insuring that the forecast balances throughout the project; general agreement with the mainline and Y-line volumes, and other forecast information such as truck percentages, directional distribution, etc.
 - Review and approve that the supporting documentation of a forecast is correct. (The format of this documentation is standardized.) This would

include documentation concerning use of model if appropriate and consideration of projects assumed to be constructed in the future year.

- The Regional Planning Group Supervisor. When the Assigned Forecaster is in a forecasting Unit, the forecast and distribution letter will be distributed to the Regional Planning Group Supervisor by the State Traffic Forecast Engineer for a review prior to its release. Typically up to seven days will be allotted for this review, but in expedited circumstances the time may be less.
 - The Group Supervisor or designee shall provide: a check against published AADT for base year volumes; review general magnitude of design factors; and review of the mainline numbers to assure that the forecast is consistent in magnitude with other projects in the area. The primary purpose of the review is for consistency with other projects and planning work, and the general logic of the forecast.
 - Other comments concerning any issues with the forecast are welcome and appreciated.
 - A written response is required to the State Traffic Forecast Engineer and Assigned Forecaster by the time designated even if there are no comments, so that the forecast may be released. This shall be via e-mail. Lack of comment by the due date constitutes formal approval of the forecast.
- The Traffic Forecast Group Supervisor. When the Assigned Forecaster is in a planning Unit, the forecast and distribution letter (only) will be distributed to the Forecast Group Supervisor by the State Traffic Forecast Engineer for a cursory review prior to its release. Typically one to two weeks will be allotted for this review, but in expedited circumstances the time may be less.
 - The Group Supervisor or designee shall provide: a check against published AADT for base year volumes; review general magnitude of design factors; and review of the mainline numbers to assure that the forecast is consistent in magnitude with other projects and forecasts in the area. The primary purpose of the review is for consistency with other projects and the general logic of the forecast. .
 - Other comments concerning any issues with the forecast are welcome and appreciated.
 - A written response is required to the State Traffic Forecast Engineer and Assigned Forecaster by the time designated even if there are no comments, so that the forecast may be released. This can be in memo format or via e-mail. Lack of comment by the due date constitutes formal approval of the forecast.

3.7 Traffic Survey Group

Traffic data from the Traffic Survey Group is crucial to developing accurate forecasts. The Traffic Survey Group can provide Turning Movement Counts

(Manual 16 hour), Vehicle Classification Counts (collected using a counter for 48 hours), or Manual Classification Counts (Manual 16 hour). The Manual Classification Counts are typically used only when the traffic flow is too inconsistent at a location to collect using a counter. All counts need to be factored to generate AADT. All measure peak hour volumes and truck volumes (truck volumes are measured to varying degrees). The expectations for the Traffic Survey Unit are:

- Provide timely confirmation on expected delivery dates of turning movement and other data. This will allow forecasters, in turn, to provide due dates to customers of forecast products.
- Investigate and provide currently available accurate data to the Assigned Forecaster.
- Receive request for additional counts.
- Perform requests in a timely manner.
- Provide guidance on the truck percentages, seasonal data and other significant information from the statewide perspective.

CHAPTER 4: SUMMARY

The project level traffic forecast is the foundation for all TIP projects – from the initial determination of feasibility, to the purpose and need of a project, to the geometric design, to the determination of the pavement thickness itself. Many people provide critical inputs into the forecasting process, and many others later use data provided from the forecast.

When requesting a traffic forecast be developed, it is critical that the Requestor first and foremost be familiar with the project. This will minimize repeated updates, or needless work and wasted resources. A fully thought out, well documented request reduces work time both for the initial forecast as well as others throughout the process; reduces frustration; and ultimately reduces project delay.

It is also critical that the Assigned Forecaster be aware of the number of people and processes that await the completion of the forecast. The Forecaster has the obligation to provide a complete and well documented forecast in a timely manner, and on schedule.

Working together in a cooperative process we can provide this critical foundation for transportation projects.

APPENDIX A



PROJECT LEVEL
TRAFFIC FORECAST
REQUEST FORM

Project TIP Number	
County (s)	
WBS #	

Please submit all requests electronically via e-mail.

Send to: dhutchings@ncdot.gov

- **PDF** of REQUEST FORM (or doc) and
- **SEPARATE PDF** of map(s)

NOTE: See form on web site for review of Consultant work, if applicable.

NCDOT Contact Engineer:	
Supervisor:	
Branch:	
Date Submitted:	

BRIEF PROJECT DESCRIPTION *(facility / limits / type of project)*:

I. TYPE OF FORECAST / REVIEW REQUEST:

Project Forecast – NEW *(There has never previously been a forecast for this project)*

Project Forecast – UPDATE Previous Forecast. Date of previous forecast: _____

REQUIRED State WHY update is needed so that we will be sure to address your requirements:
 _____ Age of forecast: _____ Other - describe below (i.e. new project/limits; specific development)

Project Forecast – Revise forecast currently being developed

II. FORECAST SPECIFICATIONS:

SCHEDULE: The Forecaster will contact you to either confirm or negotiate the due date.

Forecast is requested by: _____

guidelines below apply unless request accompanied by Attachment B - Exceptions Form

Provide **minimum:** 4 months for Simple Bridge Project
 5 months for Simple Widening Project
 7+ months for Complex project (including any or new location)

SCENARIOS: The following will be provided as the standard product

For additional scenarios or special conditions, complete Attachment B - Exceptions Form

- Base Year: Build and No-Build (currently 2010)
- Future Year: Build and No-Build (typically 2035)
- Two way AADT, quadrant moves and design factors (trucks, K and D)
- Future Year forecasts shall be fiscally constrained.

III. INFORMATION to be provided by REQUESTER:

MAP(S) REQUIRED

- Provide mapping which shows / labels the location of all intersections where turning movements are requested. (Separate maps for each alternative)
- Project overview map (if intersection mapping requires more than one sheet)
- Design plans are not appropriate.

ITEMIZED INTERSECTION LIST REQUIRED

- For State facilities, please include BOTH SR numbers and road names.
- The Requester is responsible for verifying requests are ONLY for locations with traffic is > 1000 AADT. See D. Barbour memo:
<http://www.ncdot.org/dot/pre-cons/tuc/tpb/PLANNING/forecast.htm>.
- **For each alternative**, provide an itemized list of requested turning movements. (NOTE: We regret that we may not honor requests which state to provide the same facilities from a previous forecast.)

Itemize below or attach sheets as needed.

- 1.
- 2.
- 3.
- 4.
- 5.

Incomplete submittals may result in notification that full new submittal is required.

Please double-check the above information for accuracy. If you do not receive a response to your request within three weeks of your request date, please contact dutchings@ncdot.gov.

Attachment B – Exceptions Form

EXCEPTION – INTERMEDIATE YEAR NEEDED

_____ Interim Year. (Only provided when a major event- such as construction of major new facility, or development is anticipated to alter traffic.

Please provide additional information that will assist us in providing the Traffic Forecast which meets your criteria.

EXCEPTION – FISCALLY CONSTRAINED SCENARIOS

Please provide full information concerning any scenarios which are required which do not meet the standard product or constraints standards. *(Forecasts within an MPO are fiscally constrained to projects in the MPO's LRTP; forecasts outside MPOs are fiscally constrained to the STTP and include as open all projects with some construction funds.)*

EXCEPTION – REQUEST TO EXPEDITE FORECAST

Date EXPEDITED forecast desired by: _____

The following is the list of potential projects (at least 2) which have a lower schedule priority, and could be delayed if necessary to Expedite the subject project. These projects are either within my Unit, or I have received permission from the affected Unit Head to include them on the list for delay.

-
-
-

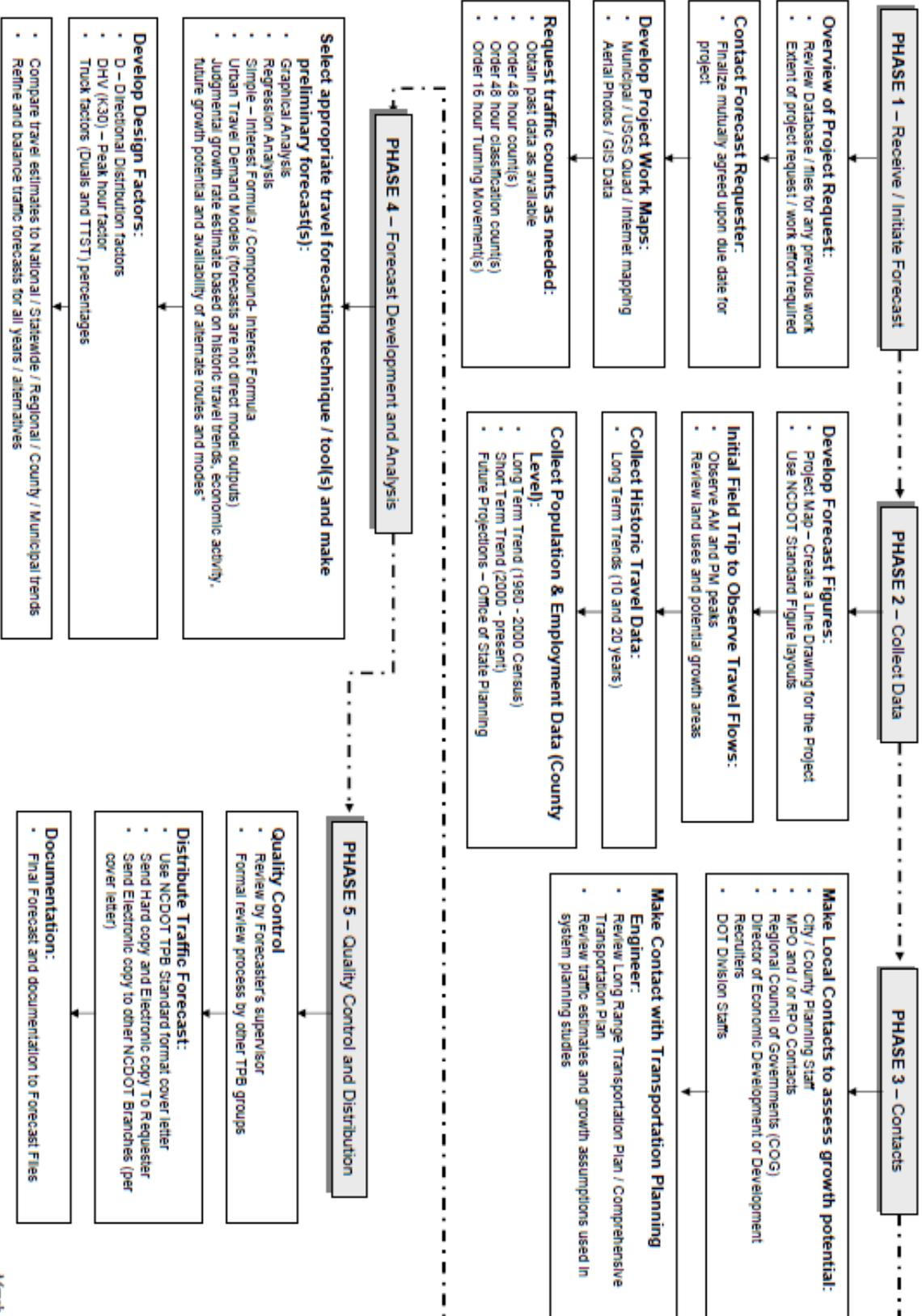
Unit Head Signature: _____ Date _____

EXPEDITE REQUESTS MUST include one HARD COPY (with signature) in addition to standard electronic request.

It is the goal of TP&T to develop Traffic Forecasts as quickly as possible, while respecting the deadlines needed by our customers. In order to advance a project, other forecast(s) that are currently being developed must be delayed to insert the expedited request. Expedited requests are met by reallocating time allocated to projects within the same Business Unit (one Business Unit's requests are not prioritized over the needs of another.)



FLOW CHART FOR PROJECT LEVEL TRAFFIC FORECASTING



APPENDIX B