

Traffic Forecasting PE Budget Entry

Description

The purpose of this procedure is to provide directions for the PE Budget process for retrieval of the man days charged by TPB to date, and then to enter the man day data.

Responsibility

The TPB Planning Group Supervisor (Supervisor) is responsible for development of the man-day estimate, including time spent to date and remaining time required, and to provide it to the State Traffic Forecasting Engineer (STFE) by the deadline noted.

The State Traffic Forecast Engineer (STFE), currently Deborah Hutchings, has been designated as the initial Point of Contact (POC) for budget development, and is also responsible for entering the data into the standard spreadsheet form.

Scheduling and Time Constraints

Requests will include a target deadline. The STFE will forward the request, and include the date by which the data is needed to allow for data entry by the deadline.

Procedure

Step	Action
1	<p>The State Traffic Forecast Engineer (STFE), currently Deborah Hutchings, has been designated as the initial Point of Contact (POC) for budget development.</p> <p>Requests for development of PE Budgets will be sent directly to the STFE from other NCDOT Business Units. The STFE will review the request to determine the location of the project, and then forward the request to the appropriate Planning Group Supervisor. The STFE will note the information required (and any needed format) as well as indicate the deadline for the information to be provided to the STFE. This deadline will typically be one to two days prior to the deadline established by the requestor, in order to assure sufficient time to enter the Budget Data by the final deadline.</p>
2	<p>Typically, the Supervisor will need to provide three pieces of information for the STFE to enter into the PE Budget spreadsheet:</p> <ul style="list-style-type: none"> a) The number of days charged to date by TPB against the project; b) The date the report was run to obtain item (1) above; and c) If additional forecasts will be needed, the number of days that will be needed by TPB to develop them. <p>Instructions for each of these three items are detailed below.</p>
2a	<p>The number of days charged to date by TPB against the project:</p> <p>To determine the number of days charged to date by TPB against the project, the PE TIP Expenditures report located on the NCDOT Workplace Portal must be run.</p>

To access the [NCDOT Workplace Portal](https://inside.ncdot.gov/Pages/Home.aspx), go to Inside NCDOT (https://inside.ncdot.gov/Pages/Home.aspx) or the Transportation Planning Branch Team Site (https://inside.ncdot.gov/Teams/transportationplanningbranch/pages/default.aspx). Scroll to the bottom of the page, and click on “NCDOT Workplace Portal.”



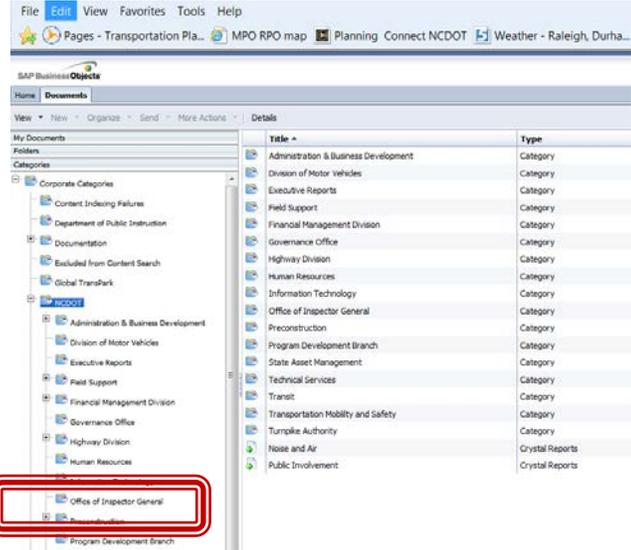
A new page will appear that requires a User ID and a Password.

- User ID – this is the name that goes with Supervisor’s e-mail account (for me, the password would be “dhutchings” and not “dhutchings@ncdot.gov” nor my NC ID name of “dshutchings.”)

Password. The password is set up by the Supervisor. It is not linked to the automatic updates required of Windows or Beacon, but does need to change every 90 days or you will be locked out. Click on Business Objects icon



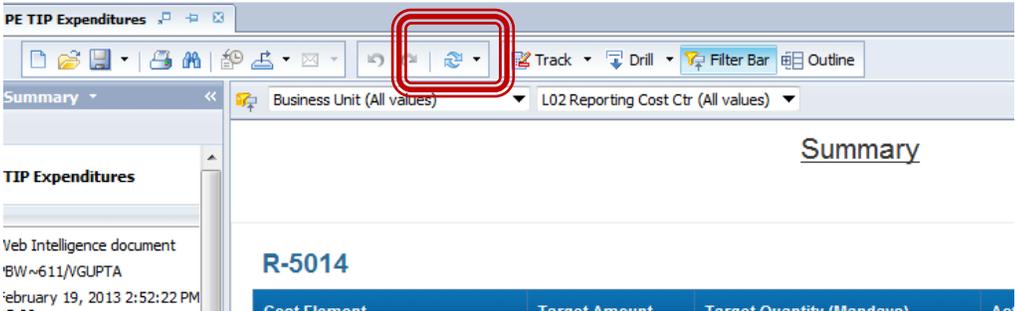
Click on [Preconstruction](#)



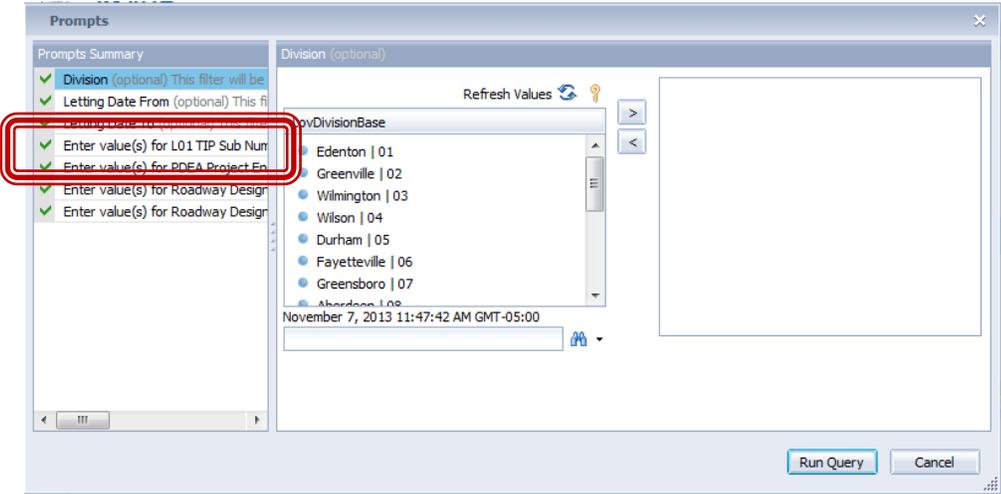
Double Click on PE TIP Expenditures

Title ^	Type
Geotechnical Engineering Unit	Category
Hydraulics Unit	Category
PDEA Unit	Category
Right Of Way Unit	Category
Roadway Design Unit	Category
Utilities Unit	Category
Actual Time charged to old Functional Areas	Web Intelligence
PE Budget Monitor by Unit and Contact	Web Intelligence
PE TIP Budget and Schedule Overview	Web Intelligence
PE TIP Expenditures	Web Intelligence

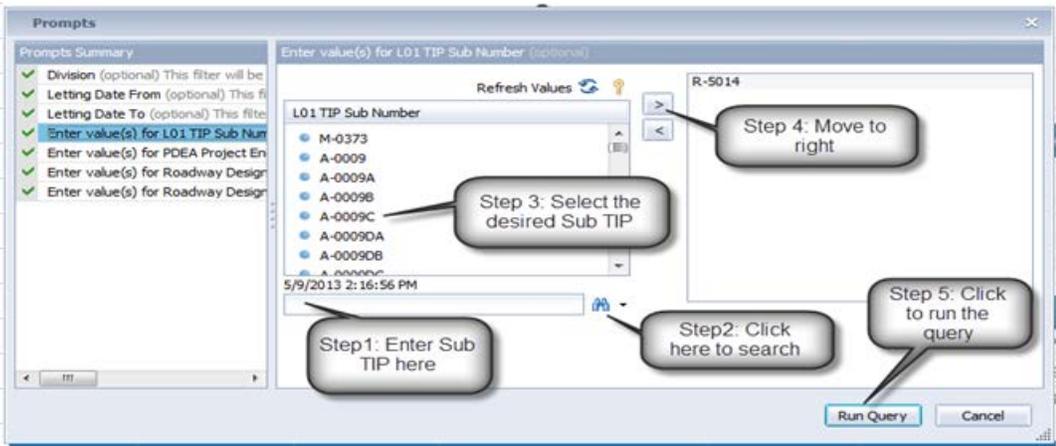
Click Refresh - this is a critical step to assure that old data will not be displayed.



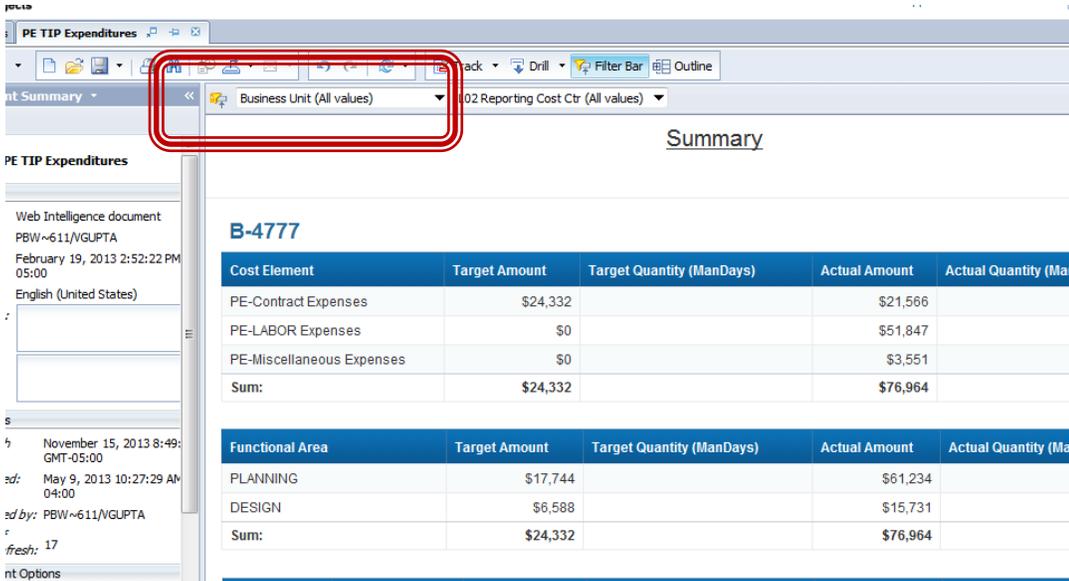
A pop-up window will display, Click Enter value for L01 TIP Sub Number. The window will change.



Enter the project number by following the steps below, and **Run Query**.



After the report completes running, the Summary screen is shown. This screen shows all time charged by all Business Units. To get the information for TPB, Select **“Transportation Planning Branch”** from the drop down box. If the Branch is not shown, then the number of days expended to date will be “0.”



The screen will refresh will man days actual manday values for management, professional, and technical positions within Transportation Planning Branch. Typically, TPB will only have "Professional" as shown below.

In this case, "4.5" days would be reported.

Transportation Planning Branch Summary Refresh Date: 11/15/13

B-4777

Cost Element	Target Amount	Target Quantity (ManDays)	Actual Amount	Actual Quantity (ManDays)	% Expended
PE-LABOR Expenses	\$0		\$2,336	4.5	0%
Sum:	\$0		\$2,336	4.5	0%

Functional Area	Target Amount	Target Quantity (ManDays)	Actual Amount	Actual Quantity (ManDays)	% Expended
DESIGN	\$0		\$2,336	4.5	0%
Sum:	\$0		\$2,336	4.5	0%

Activity Type	Functional Area	Target Amount	Target Quantity (ManDays)	Actual Amount	Actual Quantity (ManDays)	% Expended
Professional	DESIGN	\$0		\$2,336	4.5	0%
Professional I	Sum:	\$0		\$2,336	4.5	0%
	Sum:	0		\$2,336.49	4.5	0%

Fiscal Year	Actual Amount	Actual Quantity (ManDays)
2013	\$2,336	4.5
	\$2,336	4.5

WBS	Description	Target Amount	Target Quantity (ManDays)	Actual Amount	Actual Quantity (ManDays)	% Expended
38548.1.2	B-4777 - PE - BRIDGE NO. 8 & 9	\$0		\$2,336	4.5	0%
	Sum:	\$0		\$2,336	4.5	0%

In some instances, the report system may show "Technical" or "Management" days in addition to "Professional" days. Although this should not happen for TPB, when it does, the days for all categories should be added together and reported back to the STFE as total days charged.

Below is such an example, using the Traffic Management Unit report. In this case, the total number of days reported would be **2.29**.

Professional **0.91** + Technical **1.38** = **2.29** total days

The screenshot shows a 'Traffic Management Unit' report for 'L02 Reporting Cost Ctr (All values)'. The report is titled 'B-4777' and shows a 'Summary' of costs and man days. The 'Refresh Date' is 11/15/13.

Cost Element	Target Amount	Target Quantity (ManDays)	Actual Amount	Actual Quantity (ManDays)	% Expended
PE-LABOR Expenses	\$0		\$894	2.29	0%
Sum:	\$0		\$894	2.29	0%

Functional Area	Target Amount	Target Quantity (ManDays)	Actual Amount	Actual Quantity (ManDays)	% Expended
PLANNING	\$0		\$894	2.29	0%
Sum:	\$0		\$894	2.29	0%

Activity Type	Functional Area	Target Amount	Target Quantity (ManDays)	Actual Amount	Actual Quantity (ManDays)	% Expended
Professional	PLANNING	\$0		\$522	0.91	0%
Professional	Sum:	\$0		\$522	0.91	0%

Activity Type	Functional Area	Target Amount	Target Quantity (ManDays)	Actual Amount	Actual Quantity (ManDays)	% Expended
Technical	PLANNING	\$0		\$373	1.38	0%
Technical	Sum:	\$0		\$373	1.38	0%
Sum:		0		\$894.48	2.29	0%

Fiscal Year	Actual Amount	Actual Quantity (ManDays)
2007	\$847	1.85
2014	\$247	0.44
Sum:	\$894	2.29

WBS	Description	Target Amount	Target Quantity (ManDays)	Actual Amount	Actual Quantity (ManDays)	% Expended
38548.1.1	CLOSED B-4777 - PE - BRIDGE 8	\$0		\$847	1.85	0%

2b The date the report was run:
 The Supervisor will provide to the STFE the date the report was run to obtain the man days in step 2a above.

2c Determine need to develop future forecasts for the project:
 The development of a man day estimate for future forecasts is unique to each project and requires much engineering judgment and knowledge of the local area and plans.

The status of the project is called a **Phase** in the PE Budget process. The PE Budget process requires man day estimates for each of the four Phases of the project. Somewhere within the original request (usually towards the end) it is typically indicated the Phase for which data is being sought.

- ❖ **Man days for earlier Phases are presumed to be captured in the man days spent to date (step 2a above) and do not have to be developed.**
- ❖ **Man days for the requested Phase and subsequent Phases must be developed and reported to the STFE for entry into the spreadsheet.**

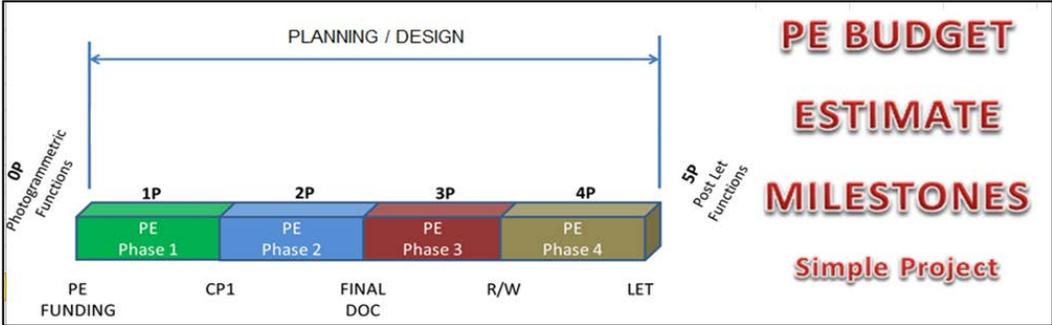
The two examples below were part of actual requests.

- a. Based on Column E of the project list attachment, enter the appropriate predicted/remaining value(s) for the portion of the project indicated (Planning = Phase 2, Design = Phase 3 & 4) in the “Widening and New Location Man-day Estimate” excel sheet. For a reminder of the typical activities that occur in each phase or a reminder as to what needs to occur at that budget estimate point, review the “Phase Detail” tab on the “Widening and New Location Man-day Estimate” spreadsheet.
- b. Enter the Design Phase 3 Remaining / Predicted Mandays and Design Phase 4 Remaining / Predicted Mandays in the “Widening and New Location Man-day Estimate” excel sheet. For a reminder of the typical activities that occur in phases 3 and 4 or a reminder as to what needs to occur at budget estimate point 4, review the “Phase Detail” tab on the “Widening and New Location Man-day Estimate” spreadsheet.

In Example (a), man day estimates for Phase 2 are being requested. Therefore estimates for Phase 2, Phase 3, and Phase 4 must all be provided. In this instance, Phases 3 and 4 are being combined. It is presumed that any man days needed for Phase 1 were captured in the man days to date number provided in step 2a.

In Example (b), the request is for Phase 3. Therefore estimates for Phase 3 and Phase 4 must be provided. In this instance, it is presumed that any man days needed for Phases 1 and 2 were captured in the man days to date number provided in step 2a.

Below is a simple graphic which relates PE Budget Phases to the status of the project.



Phase 1 Request

- Man Days will need to be reported for days spent to date (step 2a); additional days needed in Phase 1, and days for Phase 2, days for Phase 3 and days for Phase 4.
- The Supervisor will need to use knowledge of the specific project, the project status and local area to determine which phases will have time charged for a forecast. Below is a generalized summary of what is needed for a *typical* project. The Supervisor will need to use engineering judgment and adjust for those projects which fall outside the typical range.
- No forecast has been done for the project. The Supervisor will need to determine whether a forecast request is anticipated at this point, or if the Streamlining Process will be utilized.

- Under the Streamlining Process, traffic forecasts will not be required in Phase 1, as CTP Traffic Data is used for traffic data at the initial scoping meeting. Time spent on CTP Traffic Data is charged to general planning, and not the project, therefore, the man days for Phase 1 would be "0." A man day estimate for development of the forecast will be required for Phase 2 (see Step 3).
- If it is anticipated that CTP Traffic Data will not be sufficient, an estimate for mandays to develop a forecast in Phase 1 must be done. For a simple project where no update request is anticipated, mandays for Phase 2 would be "0." For complex projects, an update request should be assumed, and a man day estimate for development of the forecast will be required for Phase 2 (see Step 3).
- Typically additional forecasts are not needed in Phase 3 or 4 (after the final document). Exceptions can occur, such as for projects which have been put on hold for a number of years, and are being revived.
- A forecast is underway for the project.
 - The Supervisor should estimate the mandays required to finalize the forecast, and report this as the mandays remaining for Phase 1.
 - For a simple project where no update request is anticipated, mandays for Phase 2 would be "0." For complex projects, an update request should be assumed, and a man day estimate for development of the forecast will be required for Phase 2 (see Step 3).
 - Typically additional forecasts are not needed in Phase 3 or 4 (after the final document). Exceptions can occur, such as for projects which have been put on hold for a number of years, and are being revived.

A forecast has been completed for the project.

- Only for a very complex or controversial projects should it be assumed that there will be a forecast update during Phase 1. Therefore, typically additional days for Phase 1 will typically be "0."
- For a simple project where no update request is anticipated, mandays for Phase 2 would be "0." For complex projects, an update request should be assumed, and a man day estimate for development of the forecast will be required for Phase 2 (see Step 3).
- Typically additional forecasts are not needed in Phase 3 or 4 (after the final document). Exceptions can occur for projects which have been put on hold for a number of years, and are being revived.

Phase 2 Request may include both a Preliminary Forecast and the Project Level Traffic Forecast under the Streamlining Process. However, at this time, these different products have not been developed, so the following assumes current procedures are still in place.

- Man Days will need to be reported for days spent to date (step 2a); additional days needed for Phase 2, days for Phase 3 and days for Phase 4.
- The Supervisor will need to use knowledge of the specific project, the project status and local area to determine which phases will have time charged for a forecast. Below is a generalized summary of what is needed for a *typical* project. The Supervisor will need to use engineering judgment and adjust for

those projects which fall outside the typical range.

- No forecast has been done for the project (or the past forecast is more than 5 years old).
 - A man day estimate for development of the forecast will be required for Phase 2 (see Step 3). For complex projects, a second update request may or may not be assumed; if an update is assumed additional man days should be added to cover the second forecast.
 - Typically additional forecasts are not needed in Phase 3 or 4 (after the final document). Exceptions can occur, such as for projects which have been put on hold for a number of years, and are being revived.
- A forecast is underway for the project.
 - The Supervisor should estimate the mandays required to finalize the forecast, and report this as the mandays remaining for Phase 2, if no updates are anticipated.
 - For complex projects, an update request may or may not be assumed, and a man day estimate for development of a new forecast will be required for Phase 2 (see Step 3). Days reported for Phase 2 would be the remaining days for the forecast underway, plus days for the update.
 - Typically additional forecasts are not needed in Phase 3 or 4 (after the final document). Exceptions can occur, such as for projects which have been put on hold for a number of years, and are being revived.
- A forecast has been completed for the project.
 - For complex projects, an update request may or may not be assumed, if it is assumed an update will be needed, and then man day estimate should be developed for the update, and reported as additional days for Phase 2.
 - Typically additional forecasts are not needed in Phase 3 or 4 (after the final document). Exceptions can occur for projects which have been put on hold for a number of years, and are being revived.

Phase 3 or Phase 4 Request

- Man Days will need to be reported for days spent to date (step 2a).
- Typically additional forecasts are not needed in Phase 3 or 4 (after the final document). Exceptions can occur, such as for projects which have been put on hold for a number of years, and are being revived.
- It is strongly recommended that for projects in either Phase 3 or 4, the Supervisor contact the person listed in the request to ask if they anticipate another forecast being requested. If not, then "0" days can be assigned to each of these Phases. Consideration should be given to the following conditions:
- No forecast has been done for the project.
 - If there has not been a forecast for the project, and the Supervisor determines that one will ultimately be needed, a man day estimate for development of the forecast will be required. (see Step 3)
- A forecast is underway for the project.

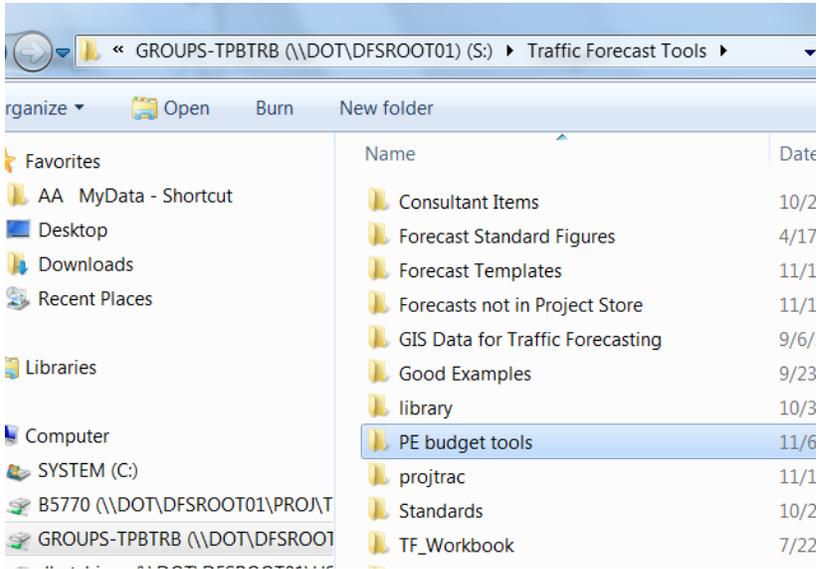
- The Supervisor should estimate the mandays required to finalize the forecast, and report this as the mandays remaining for requested Phase.

3 Developing a Man Day estimate

A tool is available for assisting with the development of a man day estimate. However, as each project is unique, this tool must be modified for each project and used with caution. Note that this is available for use, but there is no requirement that this tool be used in developing the manday estimate.

S:\Share\Traffic Forecast Tools\PE budget tools includes two spreadsheets for assisting with manday development.

- Manday Est DRAFT MODEL Med Large
- Manday Est NO MODEL Sm to Med

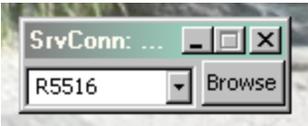


The Supervisor should select the spreadsheet which most closely matches the subject project. Changes should not be made to the spreadsheet on the Share drive, but should be saved to the Supervisor’s computer.

Each of the files is comprised of an “INPUT” sheet and a “FORECAST” sheet.

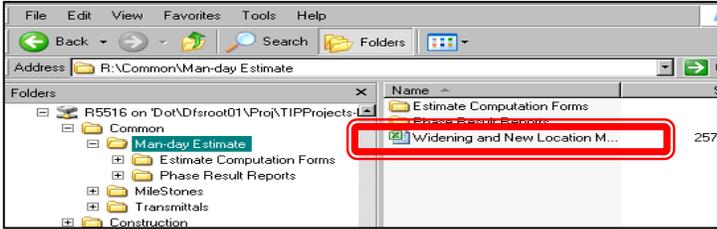
The INPUT sheet includes

- A list of assumptions used in the development of the tool. If project assumptions differ from the spreadsheet assumptions, the Supervisor should make appropriate modifications.
- Instructions on how to use the tool.
- Fields for input, and values to use. The Supervisor is requested to input the type of Project; number of intersections in the forecast; number of turning movements; number of 48 hour counts; and a distance code. Often these values are not known, but must be estimated based on knowledge of the

	<p>project and area.</p> <ul style="list-style-type: none"> The calculated Project Mandays based upon the input. <p>The FORECAST sheet includes</p> <ul style="list-style-type: none"> Line items for manday estimates, and formulae based on the input values A higher level of detail, which may be useful when customizing the estimate for a particular project. <p><u>Manday Est NO MODEL Sm to Med.</u> This spreadsheet makes the following assumptions:</p> <ul style="list-style-type: none"> There is no model available for the area. This spreadsheet should not be used in a modeled area. There is a single alternative, with no new location. Base Year No Build = Base Year Build; and Future Year Build = Future Year No Build. There is no need for an intermediate year forecast. <p><u>Manday Est DRAFT MODEL Med Large</u> This spreadsheet makes the following assumptions:</p> <ul style="list-style-type: none"> There is a model available for the area. This spreadsheet can also be used in an area without a model. The model is generally in good shape. The Supervisor should add time if much modification will be needed for the model. There is ONE project alternative. This estimator provides mandays for four scenarios: BY NB, BY Build, FY Build and FY NB. If there will be multiple alternatives, the Supervisor will need to add time for each additional FY Build Scenario, and each additional BY Build Scenario needed. No interim year is needed. If interim year(s) will be needed (due to the opening of a nearby project, for example) then the Supervisor will need to add time to develop each additional scenario.
<p>4</p>	<p>The Supervisor will send to the STFE the required information by the requested deadline; typically</p> <ul style="list-style-type: none"> Mandays charged to date Date report was run for mandays spent to date Mandays remaining, for requested Phase and any subsequent phases. <p>The STFE will enter the information into the spreadsheet.</p>
<p>5</p>	<p>To enter the data into the spreadsheet:</p> <p>The STFE will go to the Project Store file for the project (use the “SrvConn” button on the computer desktop – do NOT use the dash in the TIP number for Project Store.</p> 

6 Using Explore, go to Project Store file. Open the Common folder, then the Man-Day Estimate folder.

Open the **Widening and New Location Man-Day Comp Sheet** in the Man-Day Estimate folder.



It will look like this:

WIDENING AND NEW LOCATION PROJECT MANDAY ESTIMATING FORM			
PROJECT NUMBER R-5516			
Notes		Mandays	Budget
PDEA Project Development Section			
	(----- Insert "Date" Here) Actual Mandays To "Date" (Technical)		
	Actual Mandays To "Date" (Management)		
	Actual Mandays To "Date" (Professional)		
	Phase 2 Remaining/Predicted - Alternative Analysis and Env. Doc		
	Phase 3 Remaining/Predicted - R/W Plan Development		
	Phase 4 Remaining/Predicted - Final Plan Development		
PDEA Project Development Subtotal (Mandays & Budget)		0	\$0
PDEA Project Development Subtotal (Mandays & Budget) with Contingencies		0	\$0
PDEA Natural Environment Section			
5/31/2012	(----- Insert "Date" Here) Actual Mandays To "Date" (Technical)		
	Actual Mandays To "Date" (Management)	3.09	
	Actual Mandays To "Date" (Professional)		
	Phase 2 Remaining/Predicted - Alternative Analysis and Env. Doc	31	
	Phase 3 Remaining/Predicted - R/W Plan Development	65	
	Phase 4 Remaining/Predicted - Final Plan Development		
PDEA NES Subtotal (Mandays & Budget)		99.09	\$26,000
PDEA NES Subtotal (Mandays & Budget) with Contingencies		114	\$31,000
Location & Surveys			
	(----- Insert "Date" Here) Actual Mandays To "Date" (Technical)		
	Actual Mandays To "Date" (Management)		
	Actual Mandays To "Date" (Professional)		
	Phase 2 Remaining/Predicted - Alternative Analysis and Env. Doc		
	Phase 3 Remaining/Predicted - R/W Plan Development		
	Phase 4 Remaining/Predicted - Final Plan Development		
L&S Subtotal (Mandays & Budget)		0	\$0
L&S Subtotal (Mandays & Budget) with Contingencies		0	\$0
Roadway Design			
5/9/2012	(----- Insert "Date" Here) Actual Mandays To "Date" (Technical)		
	Actual Mandays To "Date" (Management)		

7 Scroll to **Transportation Planning Branch**

- (a) → Enter the date that the report was run.
- (b) → Enter the number of days spent to date as reported by the Group Supervisor.
- (c) → Enter the estimated number of days remaining to complete for each phase.

49	PDEA HES Community Studies Subtotal (Mandays & Budget) with Contingencies		0	\$
50	Notes	Transportation Planning Branch	Mandays	Budget
	(a)	(----- Insert "Date" Here) Actual Mandays To "Date" (Technical)		
		Actual Mandays To "Date" (Management)	(b)	
		Actual Mandays To "Date" (Professional)		
53		Phase 2 Remaining/Predicted - Alternative Analysis and Env. Doc		
54		Phase 3 Remaining/Predicted - R/W Plan Development		
55		Phase 4 Remaining/Predicted - Final Plan Development		(c)
56				
57				
58	TPB Subtotal (Mandays & Budget)		0	\$

Currently, it is expected that the traffic will be provided (and therefore PE Budget) for the following times:

	<p>Phase 1. In this phase, the Traffic Estimate is completed. These are developed by Planning Group Staff. Currently it is expected that this work would be charged to the project general planning WBS and therefore would have 0 man days.</p> <p>Phase 2 includes both a Preliminary Forecast and the Project Level Traffic Forecast. Ultimately the Preliminary Forecast is expected to include mainline volumes and only key intersections, and may be required for multiple build scenarios. The detailed Project Level Traffic Forecast would only be provided for a single alternative after Concurrence Point 3 (CP3) where the preferred alternative is selected. However, at this time, these different products have not been developed, so both will have man days developed assuming the current Project Level Traffic Forecast process.</p> <p>Phases 3 and 4 do not include any development of Traffic Volumes; therefore there are typically 0 man days for each of these Phases.</p>
8	After entering all the data in Step 13, SAVE and close the file.

Policy, Regulatory, and Legal Requirements

None.

Resources

- Inside NCDOT <https://inside.ncdot.gov/Pages/Home.aspx>
- Project Store

Background

NCDOT has developed a “PE budgeting process” for all TIP projects. The purpose of this initiative is to implement NCDOT’s leadership vision of integrating budgeting targets into the preliminary engineering process. This initiative will enhance the tracking of project time charges for all projects. This procedure is triggered by a request for the development of a man-day estimate from other business units (typically PDEA).

It is required that all Business Units performing project related work provide man-day estimates for their areas, as well as information related to time spent to date. TPB is responsible for providing man-day estimates for the development of traffic forecasts throughout the project development process.

Two primary points of contact have been designated for the PE Budget initiative. The Point of Contact (POC) for the PE Budget Management Report will be the Branch Manager (currently Mike Bruff), and the POC for budget development has been designated as the STFE (currently Deborah Hutchings).

All requests for development of PE Budgets will be sent directly to the STFE from other NCDOT Business Units. The STFE will forward the request to the appropriate Planning Group Supervisor and include with the transmittal information concerning the format in which the budget must be provided, as well as a deadline for the information so that there will be sufficient time to enter the Budget Data by the requested deadline.

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
2	Entire Procedure	Procedure's template was modified. Content untouched.	02/5/2013
3	Entire Procedure	The report running process has changed, and information on developing man days was added.	11/18/2013

Flowchart