AASHTOWare Project Estimator 2.16b

Procedures for Consultants

The New York State Thruway Authority publishes on its public website an AASHTOWare Project Estimator catalog for projects called **nystaenglishcatalog.cat**. The catalog is updated by the Thruway Authority, as needed. The catalog contains various support data such as work items and project codes that are approved for use on current projects.

Due to the great fluctuation in market prices over the past few years and the relatively small number of occurrences for most items (other than the typical Lump Sum or Each items), it has been decided not to include historical bid price statistics in future catalogs.

Creating an Estimate

1. Activate AASHTOWare Project Estimator program and log in.

2. Select the 'Catalog Tools command from the toolbar and scroll down to 'Open a Catalog'. Select **nystaenglishcatalog.cat** and click 'OK'.

3. Select the 'New' command from the File menu. Once the New Estimate dialog box opens, choose to open either a Blank Estimate or a Template (see Appendix A - Templates).

4. Enter the **ESTIMATE ID**. The ID for estimates submitted as part of the "Plans, Specification and Estimate" (PS&E) submission shall be the first six characters of the Thruway Authority Project Identification Number (PIN), without any periods (e.g. A72001).

5. The **SPEC YEAR** should have been set automatically when the estimate was created. It is dependent upon which catalog was active during the creation process. The nystaenglishcatalog.cat should set the spec. year to 08. The 08 spec. year item catalog includes approved NYSDOT Standard Specification book items and NYSDOT special specification items also approved for use at NYSTA, as well as approved NYSTA special specification items.

6. Enter the **LETTING DATE.**

7. The **UNIT SYSTEM** should have been set automatically when the estimate was created. It is dependent upon the catalog that was active when the estimate was created. The nystaenglishcatalog.cat should automatically set the Unit System to English.

8. The **LATITUDE OF MIDPOINT** and **LONGITUDE OF MIDPOINT** shall be based upon predefined points for the primary county in which the project is located or predefined points for the Division or State if the project covers much larger areas (see Appendix B - Latitude & Longitude Values for Capital Projects).

9. Enter the **STATE PROJECT NUMBER (TA #).** This shall be the same TA number to be used in the Estimate Description.

10. Enter the **ESTIMATE DESCRIPTION. -** The estimate description field shall begin with the TA number followed by the Short Description from the Thruway Authority's Capital

Program Management System. The entire description should be <u>limited to 60 characters</u> (e.g. TABS 24-2B, Castleton Bridge Rehabilitation).

11. Select the appropriate **WORK TYPE** from the drop-down list (see Appendix C -Estimator Code Values).

12. Select the appropriate **HIGHWAY TYPE** from the drop-down list. The code appropriate for most of the project should be selected.

13. Select the appropriate **URBAN/RURAL TYPE** from the drop-down list. The code appropriate for most of the project should be selected.

14. Select the appropriate **PRIME SEASON** from the drop-down list. The code selected should reflect when construction on the contract will begin in full (i.e. more than just prep work such as clearing and grubbing).

15. Select the appropriate **COUNTY** from the drop-down list. The County selected should be the county in which most of the work will be performed. Also included are codes for each Thruway Authority Division, which should be used if the project covers an entire Division (e.g. Albany Division Bridge Where and When contracts or Division Wide Pavement Striping Contracts).

16. The **DISTRICT** shall be based upon the Thruway Division in which the project is located:
    - 21 – New York
    - 22 - Albany
    - 23 - Syracuse
    - 24 - Buffalo

17. The **CONTINGENCY** % field can be used to automatically account for mobilization early in the project. Simply enter 4% in that field and the project total will be increased four percent. However, in the estimate submitted to the Thruway Authority as part of the "Plans, Specification and Estimate" (PS&E) submission the Contingency % field should be set to zero and a Mobilization item, with set dollar amounts, added to the appropriate group.

18. Select the 'Save' command from the File menu. The first time the project is saved, the program will use the ESTIMATE ID as the default file name. The program does save backups by default every 15 minutes. It also saves up to 4 previous versions of the estimate.

19. Add a GROUP. At the Thruway Authority, Estimator Groups are equivalent to Fiscal or Engineering Shares**. Contact the Thruway Project Manager to obtain information regarding how many groups to create and their descriptions.** It is important **not** to leave the description field blank for any Group. Estimator automatically creates the first group. Use the 'Add Group' command on the Edit menu to add additional groups, as needed. Estimator displays a subtotal cost for each Group on the Group Header screens, as well as a total for the entire project on the Project Header screen. If a project will have multiple groups with many common items, it is quicker to create one group and use the 'Copy' and 'Paste" commands on that group to create the other groups. The copies will have all the items, quantities and prices from the original group (however with unique line numbers). Users can then remove or add items as appropriate, as well as edit quantities.

20. Add an item to a group. Either use the 'Add item' command from the Edit menu or click a blank Item Number box in the Grid view to enter an item.

When entering data in the Item Number box on the Add Item screen, the program will display the closest valid item number in the Estimator catalog. Entering more characters will eventually cause the correct item to display. If the item does not appear, then either there was something wrong with the entry or the item is not in the current catalog. For example, entering a 502 causes the program to fill the rest of the field with the closest valid spec number, Entering an additional character 502.1 results in the display changing to 502.1001 18. Estimator is also configured to allow users to enter items not yet in the catalog. However, these items should be replaced by ones from the Estimator catalog once they have been added to the Estimator catalog by the Thruway Authority (See Appendix D - Verifying Estimate and Placeholder Items).

21. While items are usually added in sequential order to display in ascending order in the tree view, additional items can always be added out of sequence at the end of the Group and subsequently re-sorted. This is accomplished by selecting a Group in the Tree view and clicking on the Item Number header in the Grid view. The first click will sort the items in ascending order, while a second click will sort them in descending order. Once in ascending order, select the 'Renumber Using Current Order' command from the Edit menu to make the sort permanent and to update the display in the Tree view.

22. Enter a Quantity and Unit Price for each item. If the item has a Reference Price or historical Bid Price associated with that item in the Estimator catalog, then that price will be displayed by default. The user may override the default price by simply entering one manually in the Unit Price field. Consultants can use the Average Weighted Bid Price Book (AWBPB) the Thruway Authority has developed to help estimate an item's cost. Besides general statistical data on each item, the AWBPB lists all the contracts the item has been used on (for the period of time covered by the book) and specific bid statistics for each contract.

23. Once all the items have been entered, the user should verify the estimate by clicking the Yellow Check Mark on the Toolbar or selecting the 'Verify Estimate' command from the Edit menu. Estimator will check the estimate and identify errors. One of the key checks is for any items missing from the Estimator catalog or items that have been improperly entered. See Appendix D for more information.

Verifying an estimate **does not** flag the following:
- Lump sum quantities that do not equal 1.
- Dollar and Cent Unit Item prices not equal to $1.00.
- The same items in different groups and having differing unit prices.
- Data in fields that are not used by New York State Thruway Authority. The following fields should not contain any data:
  - Item Level Supplemental Description
  - Group / Engineering Share level Alternate Code

24. AASHTOWare Project Estimator can employ alternate items, which requires bidders to eventually choose between certain predefined contract items. To identify items as being

alternatives to each other, the same prefix code must be entered into the ALT CODE field for each alternate along with a unique suffix number for each alternate (e.g. AA1, AA2, AA3, AA4 are all alternatives to each other). Different sets of alternate items can be created by specifying different prefixes (e.g. AA2 and AA3 are alternatives to AA1, while AB2 is an alternative just to AB1).

To create pairs or groups of alternate items, simply enter the exact same prefix and suffix in the ALT CODE field of each item that belongs to a particular pair or group (e.g. enter AA1 into the ALT CODE field for each of the items that should be bid on together, if chosen, and AA2 in the ALT CODE field of each of the items in the alternate group). Estimator will utilize the lowest priced alternative(s) when calculating the total Group and Estimate Totals.

Printing

Select the 'Print' or "Print Preview" command from the File menu or click the printer icon on the Toolbar. An option box will appear asking the user to select what format to use and what info is to appear on the report.

- The default report lists each group, and all the items in each group. The shortest version of this report is run by leaving all boxes unchecked. The report will include line number, item number, quantity, pay units, unit price, and extended amount. The next level of detail is available by selecting the option to show item descriptions. This essentially doubles the size of the report by including the item description along with the other previously listed details. Other variations can be printed by selecting the option to hide prices, show notes for Groups/Items and/or show price bases details.

- Total item Quantities across Groups – This report lists the total quantity of an item across groups.   It is sorted by item number, and prints item number, total estimate quantity (sum of item quantities from all groups), units, total unit price and total extended amount. Other variations can be printed by selecting the option to show item descriptions or hide prices.

- Summary of Quantities by items and Groups - This report lists each item and each group where that item is used. It is sorted by item number then group, and prints item number, group, quantity in each group, unit price in each group and extended amount in each group. Other variations can be printed by selecting the option to show item descriptions or hide prices.

Final Estimate

As part of the standard "Plans, Specification and Estimate" (PS&E) submission, the Consultant should email the Thruway Project Manager the Estimator file along with the following information:
- The Project Identification Number (PIN)
- The Project Description
- A list of each Group and their cost (Group Total)
- The total Estimate Cost generated by Estimator.

Appendix A - Templates

A template contains a list of items commonly used on a particular type of project (i.e. Structures, Truck Parking Expansion, etc…). It may also contain general quantity and pricing information to assist users in estimating their particular project. A user can then remove any items not needed, as well as add any extra items not in the template. They can then add or edit the quantities and prices for each item, as appropriate.

The AASHTOWare Project Estimator program allows any user to create a template using an existing Estimator file by simply selecting the 'Save As' command from the File menu and selecting the 'Estimate Template (*.etm)' as the type of file to save to. Once created and stored in the Template directory, whenever a user selects the 'New' command from the File menu a dialog box will appear asking the user to select one of the available templates or create a standard blank estimate.

Appendix B - Latitude & Longitude Values for Capital Projects

On all capital projects use the predefined values listed below. The coordinates input into AASHTOWare Project Estimator will be used in the future to analyze bid data and generate location-specific bid history prices and trends.

County-wide Projects

Albany	Lat: 42°38'00"	Long: 073°47'00"
Cayuga	Lat: 43°02'50"	Long: 076°37'00"
Chautauqua	Lat: 42°24'40"	Long: 079°25'40"
Columbia	Lat: 42°24'20"	Long: 073°31'30"
Dutchess	Lat: 41°32'00"	Long: 073°49'30"
Erie	Lat: 42°49'40"	Long: 078°47'30"
Genesee	Lat: 43°01'10"	Long: 078°11'10"
Greene	Lat: 42°18'30"	Long: 073°52'20"
Herkimer	Lat: 43°00'50"	Long: 074°58'20"
Madison	Lat: 43°05'40"	Long: 075°49'10"
Monroe	Lat: 43°02'30"	Long: 077°41'40"
Montgomery	Lat: 42°55'10"	Long: 074°26'20"
Oneida	Lat: 43°07'30"	Long: 075°24'30"
Onondaga	Lat: 43°07'00"	Long: 076°14'20"
Ontario	Lat: 42°58'40"	Long: 077°13'30"
Orange	Lat: 41°23'00"	Long: 074°06'10"
Putnam	Lat: 41°25'50"	Long: 073°37'50"
Rensselaer	Lat: 42°29'10"	Long: 073°41'50"
Rockland	Lat: 41°06'10"	Long: 074°04'30"
Schenectady	Lat: 42°49'30"	Long: 074°00'50"
Seneca	Lat: 42°58'00"	Long: 076°50'20"
Ulster	Lat: 41°52'50"	Long: 074°03'30"
Westchester – I-87	Lat: 40°59'40"	Long: 073°51'10"
I-287	Lat: 41°01'50"	Long: 073°45'00"
I-95	Lat: 40°57'20"	Long: 073°44'30"
Bronx	Lat: 40°52'50"	Long: 073°50'00"

Division-wide Projects

Albany	Lat: 42°34'00"	Long: 073°47'00"
Buffalo	Lat: 42°55'00"	Long: 078°46'00"
New York	Lat: 41°08'00"	Long: 074°10'00"
Syracuse	Lat: 43°06'00"	Long: 076°00'00"

Statewide Projects

	Lat: 43°10'00"	Long: 075°40'00"

For projects with work being performed at multiple discrete locations, the Latitude and Longitude for the location with the highest cost work should be reported.

APPENDIX C - Estimator Code Values

AMIS	Miscellaneous Buildings	BWWC	Bridge Where and When Contract
AROF	Roofing		
ASMB	Section Maintenance Buildings	HCUL	Major Culverts
ASPB	State Police Buildings	HMIS	Miscellaneous Highway
ASSH	Salt Sheds	HONR	1R Highway Resurfacing
AWWT	Wastewater Treatment Plant	HPMK	Pavement Markings
BFEN	Bridge Fencing	HREC	3R Highway Rehab/Reconstruction
BMIS	Miscellaneous Bridge		
BPAI	Bridge Painting	HSAF	Highway Safety Only
BREH	Major Bridge Rehabilitation	HTWR	2R Highway Rehabilitation
BRPL	Bridge Replacement	ITS	Intelligent Transportation Systems
BSRS	Bridge SRSO		
BWAS	Bridge Washing		

Highway Type Codes

ASPH	Asphalt	CONC	Concrete
COMB	Combination Asphalt & Concrete	NONE	No Highway

Urban/Rural Codes

R	Rural	U	Urban

Prime Season Codes

FALL	Fall (9/22 to 12/22)	SUMM	Summer (6/22 to 9/22)
SPRI	Spring (3/22 to 6/22)	WINT	Winter (12/22 to 3/22)

County Codes

C01	Albany	C35	Oswego
C05	Cayuga	C37	Putnam
C06	Chautauqua	C38	Rensselaer
C10	Columbia	C39	Rockland
C13	Dutchess	C41	Saratoga
C14	Erie	C42	Schenectady
C18	Genesee	C45	Seneca
C19	Greene	C51	Ulster
C21	Herkimer	C52	Warren
C25	Madison	C53	Washington
C26	Monroe	C54	Wayne
C27	Montgomery	C55	Westchester
C29	Niagara	C61	Bronx
C30	Oneida	D21	New York Division
C31	Onondaga	D22	Albany Division
C32	Ontario	D23	Syracuse Division
C33	Orange	D24	Buffalo Division
C34	Orleans		

APPENDIX C - Estimator Code Values

Unit Codes

ACRE	Acre		INTM	Intersection Month
BAG	Bag		LB	Pound
BF	Board Ft.		LF	Linear Ft.
CDAY	Calendar Day		LS	Lump Sum
CF	Cubic Ft.		MGAL	Thousand Gallons
CW	Calendar Week		MNTH	Month
CY	Cubic Yard		PCNT	Percent
DAY	Day		PDD	Pressure Distributor Day
DC	Dollars and Cents		QU	Quality Unit
EACH	Each		SF	Square Ft.
ELOC	Each Location		SY	Square Yard
F	Feet		TON	Ton
FQU	Quality Unit			
GAL	Gallon			
HOUR	Hour			
INCH	Inch			

Appendix D - Verifying an Estimate and Flagging Errors

1. When a user adds a blank item to an estimate, it is automatically flagged in the Tree view. If a user clicks on the *Item Number* field and either selects an item from the catalog dropdown or enters an item number that exists in the catalog, then the error flag is automatically removed. If the user enters an item number that is not in the catalog, the error flag will remain.

2. When a user adds an item to an estimate, the *Quantity*, *Unit Price* and *Extension* fields are by default set to zero. If the user blanks out any of these fields, rather than entering values, the item will automatically be flagged in the Tree view.

3. The Verify command not only reports specific information on the errors Estimator has currently flagged, but also re-scans the entire estimate, flagging and reporting items that are no longer in the catalog (i.e. recently disapproved), as well as removing the flags on items that were not in the previous catalog, but are now in the current catalog. The latter are particularly important since those error flags do not update automatically when the estimate is opened but do so only when the Verify command is run again or as specified in next Section.

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- Dollar and Cent Unit Item prices not equal to $1.00.
- The same items in different groups and having differing unit prices.
- Data in fields that are not used by New York State Thruway Authority. The following fields should not contain any data:
  - Item Level Supplemental Description
  - Group / Engineering Share level Alternate Code

Working with Placeholder Items in an Estimate

When an item does not exist in the official Thruway catalog, the user may enter a placeholder in Estimator in the *Item Number* field, along with temporary entries in the *Description*, and *Units of Measure* fields. They may then enter estimated values in the *Quantity* and *Unit Price* fields. The placeholder number and description should be the user's recommendations for the item they are proposing be added to the official Thruway catalog. When replacing the placeholder, Estimator will interpret this action as selection of a completely new item number and update all the item information, as described in the first scenario below.

Note that when the user clicks on the item selection list in the *Item Number* field, in order to replace the placeholder number, the list will automatically jump to the closest match. If the official item number is similar to that originally proposed, the user will only need to scroll back a few numbers to find the appropriate replacement item. This will be the case if the letter 'a' was used in the placeholder number as described above.

1. If a user clicks on a placeholder item's *Item Number* field and selects an item from the catalog list that is different than the placeholder item number, it updates the *Item Number*, *Description*, and *Units of Measure* fields, leaving the *Quantity*, *Unit Price* and *Extension* fields untouched (assuming Unit Price was based on Ad-hoc pricing, otherwise changing the item number will zero out the *Unit Price* and *Extension* fields or apply that new items default price basis (i.e. Reference Price, Bid History, etc…). The error flag is automatically removed.

2. If a user clicks on a placeholder item's *Item Number* field and selects an item from the catalog list that is exactly the same as the placeholder item number, Estimator **does not** update the *Description* or *Units of Measure* fields, even if those values in the catalog are different than what was originally entered in the estimate for the placeholder item. It does leave the *Quantity*, *Unit Price* and *Extension* fields untouched. However, the error flag is automatically removed, even though the item still contains incorrect information.