Design - Project Development - EBASE

EBASE Estimate and Bid Analysis System is an application where the ultimate goal is to provide users with a quick, reliable, flexible, and effective way to manage estimates and contract bid information. This application also helps to eliminate duplicated effort and the need for side systems and databases with local offices. You will find user guides, tools and other helpful information for system users & region administrators.

Self Study Training and Individual Sections
Training Course Student Workbook (pdf 621 kb)
EBASE Exercises (pdf 189 kb)
Groups Tab setup/entry (pdf 31 kb)

EBASE Tools
Export EBASE Item Report
Export EBASE item report to EXCEL (pdf 777 kb)
TAX Rates
Trends in materials cost
Starter Estimates
Estimation Guidebook
Producer Price Index

EBASE Topics
Construction Engineering - Finding a Percentage (pdf 335 kb)
Understanding pro-rate lump sum items (pdf 30 kb)
Taxes Applied (pdf 217 kb)
Understanding Road User Cost (a.k.a. Innovative bidding: A+B bidding)
FHWA Alternative Contracting

Cost Adjustment Items - What & How to Calculate
Asphalt/CRS Info Sheet (pdf 449 kb)

Asphalt Worksheet
CRS Worksheet
Smoothness Compliance Info Sheet (pdf 169 kb)

[Understanding the Funding/Group/Column/Item Relationship](#) (pdf 149 kb)
[Below the Line Items - a.k.a 700 & 800 Items](#) (pdf 147 kb)

Getting access to EBASE
To use the EBASE program, you must first have EBASE installed on your PC. Contact your Workstation Support person or local Help Desk contact.

WSDOT Help Desk Contacts
Headquarters
360-705- 7050

Eastern Region
509-324-6050

North Central Region
509-667-2920

Olympic Region
360-357-2603

Southwest Region
360-905-2038

Ferries
206-515-3800

Mats Lab
360-709-5454

Northwest Region
206-440-4420

South Central Region
509-577-1670

To get access to the EBASE server (DOTDBOLYHQ01P), contact Tomi Hume-Pontius to submit a request for EBASE file permissions for your user ID.

EBASE for Local Agencies and the Private Sector
Unfortunately at this time, due to budgetary constraints, our plans for developing a module of EBASE for Local Agencies and Private entities have been put on hold. However, it remains one of our goals.

Understanding the Bid Items tab
The Bid Items tab is used to enter the Biddable items of work, then to tie these items to the Groups/Columns of work and Funding sources. Please see [Elements of the Bid Items Tab and their functions.](#)

How to set up Funds
The Funding tab is used to setup and manipulate the funding sources for estimates. This tab is comprised of three sub tabs, each of which must contain the proper elements before you may create a viable fund.

Funds, the first tab.
Use this tab to create the numbered set that participants are to be assigned to. You may use any numeric sequence, e.g.. 1, 2, 3...; 5, 10, 15...; 10, 20, 30... These are only identifiers so that you may assign to them participants who will be contributing to the same Groups of work. Later these identifiers will be assigned to the each of the groups of work as they are created on the Groups tab.

Participants, the second tab.
Use this tab to list all of the Participants in the funding of the project. When entering each participant, it is necessary that each is named uniquely so that the estimate will properly calculate and print. e.g. FEDERAL, FEDERAL IM, FEDERAL STP. For Federal Participants, enter the full federal aid number in the space provided.

Fund/Participant Matching, the third tab.
Use this tab to assign the identifiers from the FUNDS tabs to the

PARTICIPANTS on the participants tab. Each Fund may be comprised of as few as 1 participant per fund (No Maximum amount may be assigned to funds with a single participant), or as many as 4. Please see the example below for an illustration of a typical funding scenario.

For more information, please see the EBASE Users Guide (pdf 1 mb).

An easy way to setup funds is to imagine them as buckets that each participant is going to help fill. See the funding situation above, described in the table below.

Fund Number	Participant and Sequence	
Fund 5	3 State	The State will contribute all the $$$ it takes finish paying for the work that is covered by Fund 5. In other words, the State will finish filling up the bucket. Since there are only 3 participants in Fund 5, STATE will be entered as the Tertiary Participant in the fund by entering the number 3 as the funding sequence. 100% is entered under Participation Percentage, indicating the STATE will pay for 100% of what is left to pay in the fund after the first two participants have made their contributions. STATE will be a participant in most funds.
2 Federal	Once the City of Twisp contributed their $10,000, the Feds are willing to pay 80% of the remaining work in this Fund. They are entered as the Secondary Participant in Fund 5 by entering the	

	number 2 as the Funding Sequence, and 80% is entered under Participation Percentage.	
1 City of Twisp	They are contributing up to a maximum amount of $10,000. We want to use up as much of th $$$ they are willing to contribute as we can so they are designated as the primary participant of Fund 5 by entering the number 1 as the Funding Sequence, and a Participation Percentage of 100% So all of the $10,000 will be used.	
Fund 10	2 State	The State will contribute all the $$$ it takes finish paying for the work that is covered by Fund 10. In other words, the State will finish filling up the bucket. Since there are only 2 participants in Fund 10, STATE will be entered as the Secondary Participant in the fund by entering the number 2 as the funding sequence. 100% is entered under Participation Percentage, indicating the STATE will pay for 100% of what is left to pay in the fund after the first participant has made its contributions. STATE will be a participant in most funds.
	1 Federal	Feds are willing to pay 80% of the work this Fund is paying for. They are entered as the Primary Participant in Fund 10 by entering the number 1 as the Funding Sequence, and 80% is entered under Participation Percentage.
Fund 15	1 State	The State will contribute all the $$$ For THIRD PARTY DAMAGES. If STATE is not paying for the entire project, then a separate Fund must be setup to assign to your REIMBURSEMENT FOR THIRD PARTY DAMAGES group. This Fund, shown here as Fund 15 will contain STATE as the Primary, and only participant, Funding sequence 1 and Participation Percentage of 100%. The Reimbursement for third party damages is set up this way so the Contract may be closed even if we have not recovered our costs for any damages repaired from the "Third Party" .

Calculating Mobilization

Mobilization must be calculated as a percentage of the Contract Total (work done Contractor). This is the dollar amount before the addition of tax or additives. The calculation is then entered into the estimate as a Lump Sum Bid Item that is Pro-rated across the applicable Columns of work.

Mobilization is a contract pay item that is used to cover contractor's pre-construction expenses and also the costs of preparatory work and operations. Since there is no clear list to what this work effort is and each contractor has the ability to adjust their bid as needed to cover these

expenses, there are no true rule(s) as what percentage should be used per contract. The following is a suggested guide:

Less than $100,000 Use 8% to 12%
$100,000 to $250,000 Use 6% to 10%
$250,000 to $500,000 Use 6% to 9%
$500,000 to $1,000,000 Use 5% to 9%
$1,000,000 to $2,000,000 Use 6% to 9%
$2,000,000 to $5,000,000 Use 7% to 9%
$5,000,000 to $10,000,000 Use 8% to 10%
$10,000,000 to $20,000,000 Use 7% to 11%
Over $20,000,000 Use 7% to 10%

To more accurately calculate the Mobilization percentage that should be used for each individual project, consideration should also be given to:

- The location of the project
- The complexity of the project
- The need for specialized equipment
- The type of work being performed
- Rural vs. Urban Projects with multiple work sites
- Excessive preparatory removal items
- Large quantities of excavation
- Spanning of constructions seasons when it would become necessary for the contractor to shut down and clear the work site between these seasons.

Entering Third Party Damages

Reimbursement for Third Party Damages is a required bid item for WSDOT projects. Minimum requirements for this bid item are: Planned Quantity = 5.00 Unit Price = $1.00. However, each project should be evaluated to accurately determine it's needs.

Some things to take into consideration when calculating a Planned Quantity for Third Party Damages on your project are: Does the project contain items that are highly susceptible to Third Party Damage? What are the project conditions? Urban or Rural location? High Traffic

Exposure? Length of contract?

Longer contracts have more exposure to the traveling public. Once the determination of what items are likely to be damaged, enter in the Planned Quantity, a dollar value that represents a reasonable cost of repair/replacement for the item. When assigning the bid item, Reimbursement for Third Party Damages, assign it to the largest PIN or the PIN that is most likely to sustain damages. This Bid Item will be paid for with State Funds only. Do not assign this Bid Item to a Column that is attached to a Group with Federal Funding.

Understanding EBASE
Estimate & Bid Analysis System (EBASE) is a SQL server application built in Power Builder. EBASE provides the user with a friendly Windows type environment to create and manipulate project estimates and bid data for Construction Projects.

With this application, one may enter the preliminary data in the Project Definition stage and continue to build on and modify the estimate as the project progresses.

EBASE also makes it easy to share estimates electronically. Anyone with access may view an estimate alone, or simultaneously with others, or access may be granted to users to manipulate and estimate during their involvement in the development process. Once they have completed their contribution, they may once again be limited to "view only" access.

In addition, after the project is advertised and bids are opened, EBASE receives the bids (manually or electronically), compares them to the estimate and creates the necessary management reports to allow the Contract Ad and Award office to select the lowest responsible bidder.

EBASE also maintains the Standard Item Table (S.I.T.) and the Unit Bid Analysis (U.B.A.).

EBASE updates the Mainframe files that populate the CAPS III, CCIS and

PREQUAL systems tables. This data feed process allows for features such as electronic bid item lookup and bid price history at the click of a button.

The ultimate goal of EBASE is to provide users with a quick, reliable, flexible, and effective way to manage estimates and contract bid information, while eliminating duplicated effort and the need for side systems and databases with local offices.

Maintaining EBASE files
The EBASE Administrator within each Region is responsible for keeping their Region EBASE files organized and current.

There are four estimate sets that the Administrators need to be aware of:

Current Versions
This file set displays only the most current version of all estimates within the system. This file set should ideally contain only the most current version of the engineers estimate for projects that are being developed, on Ad or that have been awarded.

All Estimates
This file set displays all versions of all the estimates within the system [excluding version 99]. This file set should ideally contain the most current version of an estimate and perhaps one or two earlier versions.

Deleted
This file set displays all versions of estimates that have been deleted from the current versions and all estimates file sets. This file will occasionally be purged by an EBASE Manager.

This file set is maintained as a back-up file, in case the most current version of an estimate is accidentally lost.

Awarded
This file set displays the version 99 [true bids] version of the estimate that is created when a project has been awarded. This file will be maintained by a system manager.

AS-Built
The estimates in the AS-Built file are created from the version 99 awarded estimate by making a new version.

The AS-Built (version 100) estimate is to be used to modify the awarded contractors estimated item quantities to reflect actual constructed item quantities.

Contact your Region EBASE Administrator when the creation of an AS-Built estimate is needed.

It is recommended that each Region Administrator set up a regular maintenance schedule for deleting estimates in the current versions and all estimates file sets. These deleted estimates will go to the deleted file. An EBASE Manager will notify the EBASE Administrators prior to purging the deleted file.

Loading Estimates
Important Note: Check Estimates thoroughly before pushing the "Load to Bids" button.

EBASE must be locked before the (WOA) and construction contract funding authorizations (CCFA) can be approved. Please read the draft Program Management policy for EBASE and CCFA approval)

When a project is turned in for Advertisement, the project must be locked and loaded to the Bids module. To lock and load an estimate, on the General Info tab, click the button that is labeled MOVE TO BIDS. This will load all the estimate information to the CAPS files and the Bids Module and will lock the estimate.

Should it become necessary to make revisions to the estimate that will affect the bids, use the Duplicate/New Version button on the General Info tab to make a new version of the estimate. Make the revisions to this new version, click the MOVE TO BIDS button to load the revisions to the CAPS files, Bids Module and to lock the estimate.

EBASE performs an automatic cursory review of each estimate to ensure that it is loadable. However, this review is minimal and only checks to see if enough data is entered on each tab to allow the load.

Before locking any estimate a review should be done by the Region Administrator. Things to check for that EBASE will not catch:

- On L.S., CALC. and EST. bid items, check to ensure that the Unit Price has been entered as 1.00 and that the total amount for the item is enter under Planned Quantity. The exception to this rule being Prorated L.S. items.
- A column may not have a total of less than $5.00.
- Zero quantities are not valid and will create erroneous results.
- Non Standard bid items are assigned to a Section Header, and have a Pre Qual Code.
- Non Bid Items are assigned to a column.
- All columns that the bid items are assigned to must have a Planned Quantity entered.
- All Funds, Fund Participants, Bid Items, Groups and columns that are entered into the estimate are used. Do not leave superfluous data in the estimate.
- Funds are matched to participants.
- Data for individual groups on the Groups tab is complete.
- Engineering and contingency % has been entered.
- Section Headers tab must not contain blank lines, if they exist, delete them.

For further information on EBASE Administrator functions, see EBASE Administrator in Chapter 2 – Level of users in the EBASE Users Guide.

Using the filter function
Using the filter function in EBASE to extract data is cumbersome due to the fact that it must actually be coded. Included are some examples that should get you though in most cases.

An existing column must be selected to apply the filter to. When filtering, use the columns box to select what to filter through (i.g. by double clicking on "Title" you will be specifying to look in the Titles Table).

Note that available column selections will vary depending on the screen you are filtering from.

Project by Title
Example - To find all projects that contained "Seismic" in the title
title like '%'+'SEISMIC'+'%' (This is case sensitive, words in the title must be exact).

Find an estimate version
Example - To find versions greater than 10.
version_number >10

Find a contract number
contract_number ='006801'

To find a range
Example - To find a Planned Quantity range
planned_quantity > 5,000 and planned_quantity < 10,000

To filter by 2 sets of criteria
Example - To find a Planned Quantity + an Award Date on or after a specified date.
(planned_quantity > 5,000 and planned_quantity < 10,000) and award_date >= date(yyyy,mm,dd) (enter your date in year, month, day)
To filter by 3 sets of criteria
Example - In Eastern Region, to find a Planned Quantity + an Award Date on or after a specified date.
(region_code= '6') and (award_date >= date(yyyy,mm,dd)) and planned_quantity >=2

Consultant Access
Special User Levels have been setup to accommodate entry into EBASE by consultants who are preparing project estimates. However, this access is available only if there is a WSDOT Consultant Liaison working within the Consultant office who has a WSDOT setup remote connection to the WSDOT network.

If this connection is available
EBASE must be loaded on the PC and the consultant must possess a valid 6+1 WSDOT network ID.

Contact the Region Help desk to have this application installed and request a network ID for the consultant. Once the application has been installed and a Network ID established, contact Tomi Hume-Pontius at 360-705-7456 to obtain access for data entry and guidance in the use of the application.

The consulting office should submit their estimate data to the WSDOT Project Office they are working with. The Project Office will then enter the estimate data into EBASE. There should be no connection available through a WSDOT Consultant Liaison.
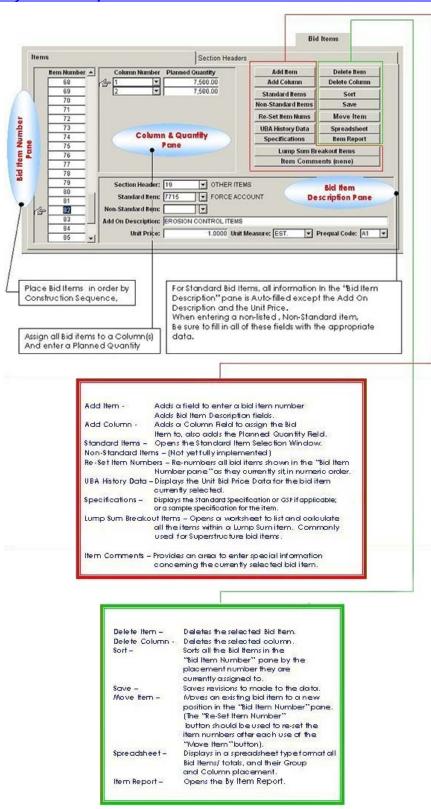
Contact
Kari Beardslee
PS&E Support Engineer
360-705-7599

Tomi Hume-Pontius, CVS
PS&E Engineer
360-480-9055

Project Development - EBASE Help Topics

- [Consultant Access](#) (pdf 294 kb)
- [How to set up funding](#) (pdf 442 kb)
- [How to enter Lump Sum, Estimated & Calculated Items](#) (pdf 216 kb)
- [Pro-Rating Lump Sum Items](#) (pdf 226 kb)

Design - Project Development - Elements of the Bid Items Tab and their Functions

Bid Items

Items | **Section Headers**

Item Number	Column Number	Planned Quantity
68	1	7,500.00
69	2	7,500.00
70		
71		
72		
73		
74		
75		
76		
77		
78		
79		
80		
81		
82		
83		
84		
85		

Bid Item Number Pane

Column & Quantity Pane

Add Item	Delete Item
Add Column	Delete Column
Standard Items	Sort
Non-Standard Items	Save
Re-Set Item Nums	Move Item
UBA History Data	Spreadsheet
Specifications	Item Report

Lump Sum Breakout Items
Item Comments (none)

Section Header: 19 ▾ OTHER ITEMS
Standard Item: 7715 ▾ FORCE ACCOUNT
Non-Standard Item: ▾
Add On Description: EROSION CONTROL ITEMS
Unit Price: 1.0000 Unit Measure: EST. ▾ Prequal Code: A1 ▾

Bid Item Description Pane

Place Bid Items in order by Construction Sequence,

For Standard Bid Items, all information in the "Bid Item Description" pane is Auto-filled except the Add On Description and the Unit Price.
When entering a non-listed, Non-Standard item, Be sure to fill in all of these fields with the appropriate data.

Assign all Bid items to a Column(s) And enter a Planned Quantity

Add Item - Adds a field to enter a bid item number Adds Bid Item Description fields.
Add Column - Adds a Column Field to assign the Bid Item to, also adds the Planned Quantity Field.
Standard Items – Opens the Standard Item Selection Window.
Non-Standard Items – (Not yet fully implemented)
Re-Set Item Numbers – Re-numbers all bid items shown in the "Bid Item Number pane" as they currently sit, in numeric order.
UBA History Data – Displays the Unit Bid Price Data for the bid item currently selected.
Specifications – Displays the Standard Specification or GSP if applicable; or a sample specification for the item.
Lump Sum Breakout Items – Opens a worksheet to list and calculate all the items within a Lump Sum item. Commonly used for Superstructure bid items.

Item Comments – Provides an area to enter special information concerning the currently selected bid item.

Delete Item – Deletes the selected Bid Item.
Delete Column - Deletes the selected column.
Sort – Sorts all the Bid Items in the "Bid Item Number" pane by the placement number they are currently assigned to.
Save – Saves revisions to made to the data.
Move Item – Moves an existing bid item to a new position in the "Bid Item Number" pane. (The "Re-Set Item Number" button should be used to re-set the item numbers after each use of the "Move Item" button).
Spreadsheet – Displays in a spreadsheet type format all Bid Items/ totals, and their Group and Column placement.
Item Report – Opens the By Item Report.

Design - Project Development - Oman Data Errors

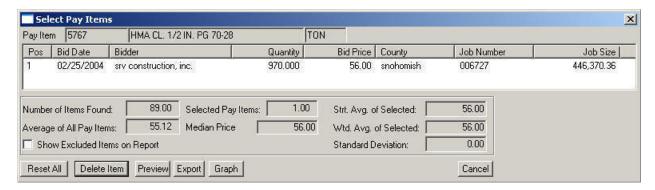To query counties across multiple Regions, you must setup a User Specified Region

Figure 1

You may also use the on-line [WSDOT Unit Bid Analysis](#) tool to view the correct supplemental Item descriptions for all the contracts associated with a Standard Item Number.