EBASE
Project Estimating and
Bid Analysis System

Training Course
EBASE

What is it used for?

EBASE Supports Bid Item History based Estimating, although it accepts the use of Non - Standard items and Standard Items with Means style or bottom up style Cost calculations.

WSDOT uses Standard bid items where possible in our contracts. This not only allows for Consistency (no Surprises for the contractors = Lower Bids submitted) but also for the collection of bid history for various types of work. This bid history may be analyzed for where, when, quantity, and who did the work to get the most accurate cost possible.

EBASE Creates and stores a permanent record and History that may be shared by many users Statewide.

EBASE Supports and is a crucial link in the entry of, and as a conduit for estimate Data. EBASE provides reports used in many facets for keeping the Highway Programs on Track, Determining Lowest responsible bidder for Awards, contract Payments, as well as interfacing and providing data to systems such as - CCIS, CAPS, BIDS, TRIPS and the DATAMART.

In its Primary function, EBASE provides department estimators access to Historical cost data for Analysis, enabling the development of accurate estimate Reports for construction Projects.

Other Features provided by EBASE:
- Standard Item Table - accessible thorough EBASE or via the web.
- UBA - Unit Bid History - accessible thorough EBASE or via the web.
- EXCEL Export of bid items - Web feature

Supplemental Programs:
BID TABS PRO, BID TABS PLUS - These applications utilize WSDOT Bid History, Including all Non-Standard items to analyze cost data. They are capable of taking any EBASE estimate and analyzing the items entered For cost by comparing with Statewide, Regional, or Contractor bid Item cost History.

You may also upload data from exported EBASE files or Excel estimates you have created, to build estimates or analysis data.

Tools and Information are available on the internet on the internet @ http://www.wsdot.wa.gov/Design/ProjectDev?Engineering_Applications/default.htm
Information you will need for entry into EBASE and where you can find it

**GENERAL INFO tab**
- Project Title - Plan Review Liaison
- PS&E Job Number - Plan Review Liaison
- Work Order Number - CPMS / Program Management
- Dollars Budgeted - CPMS / Program Management
- Const Eng. % - EBASE User’s Guide or Plans Prep Manual 800.03(2)
- Contingency % - EBASE User’s Guide or Plans Prep Manual 800.03(2)

**TEXT DATA tab**
- Project Remarks - EBASE User’s Guide or EBASE Fundamentals (for type & Format)
- Proposal Description - EBASE User’s Guide or EBASE Fundamentals (for type & Format)
- Text Data - EBASE User’s Guide or EBASE Fundamentals (for type & Format)

**FUNDING tab**
- Plan Review Liaison
- Plan Review Liaison
- CPMS / Program Management
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- EBASE User’s Guide or Plans Prep Manual 800.03(2)
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**FUNDING tab**
- Project Remarks - EBASE User’s Guide or EBASE Fundamentals (for type & Format)
- Proposal Description - EBASE User’s Guide or EBASE Fundamentals (for type & Format)
- Text Data - EBASE User’s Guide or EBASE Fundamentals (for type & Format)

**FUNDING tab**
- Participants (Who is contributing dollars towards the construction of the project)
- Fund Sources can be found by PIN in CPMS on the QC Screen.
- See the listed Finance Code - Federal Share Table at: http://wwwi.wsdot.wa.gov/Planning/CPDMO/FederalAid.htm or Maximum dollar Participation.
- ALSO check agreements for additional funding sources.
- Federal-Aid number - Program Mgmt (sub-program manager)

**GROUPS tab**
- County - TRIPS GEOMETRIC Report
- Control Section - TRIPS GEOMETRIC Report
- Fund Number - FUNDS Tab (create designations per EBASE Users Guide)
- Group Desc. - PROJECT SUMMARY (to determine where breaks occur)
- Sub Program - PROJECT SUMMARY
- Program Item # (P.I.N.) - PROJECT SUMMARY
- Safety Class Code - EBASE User’s Guide
**Information you will need for entry into EBASE and where you can find it**

**COLUMNS Tab**

- **Group number** - Groups Tab
- **Column Heading** - Determine by Work to be completed and Column Break Rules
  
  Plan Prep. Manual 400.06(5)

**BID ITEMS Tab**

- **Bid Items and Quantities** - These will come from the Plans, i.e. Qtabs, Structure Notes, Planting Plans, profiles etc.
  Other Quantities such as Lump Sum, Calc. or Est. items will come from the estimate workbook worksheets.
How the Data entered in EBASE is Related

DATA FROM Funding TAB

FUND 1
• FEDERAL
• STATE

DATA FROM GROUPS TAB

GROUP 1
MP 172 to MP 175

DATA FROM COLUMNS TAB

COLUMN 1
PAVMENT REHAB.

DATA FROM Bid Items TAB

bid Item 1
Bid Item 2
Bid Item 3

GROUP 2
SIGNALS

COLUMN 2
PEDESTRIAN Pavement Warning System

Bid Item 2
Bid Item 4

GROUP 3
Reimb. For 3rd Party Damage

COLUMN 3
SIGNAL TYPE 1

bid Item 2
Bid Item 5

COLUMN 4
SIGNAL TYPE 2

bid Item 2
Bid Item 6
Bid Item 7

FUND 2
• AGMT
• CITY
• FEDERAL
• STATE

FUND 3
• STATE

COLUMN 5
Reimb. For 3rd Party Damage

bid Item 8
Getting Started

To begin, open the EBASE Application:

CLICK Start and Select Programs\ DOT Applications\ EBASE

Read the EBASE Broadcast Message. This will alert you of the latest news or Attention Items.

CLICK Close

Newest Alerts are posted at the Top.
Scroll down to view old postings
Controls

Most Frequently an existing Estimate will need to be Accessed.

Click the “ESTIMATES” Button to view all the Estimates in your Region.

Estimates Window Buttons

Create New Estimate
Filter List
Sort List
Scroll List

Exit Program
Close Window
Open Standard Item Table
Delete Estimate
Lock Estimate

(See Fundamentals Guide for filters)

Open Help Web Site

Lock Estimate
(this Locks the estimate preventing further revisions. To “Lock & Load” use the MOVE TO BIDS button only.)
**New Estimate**

**EXERCISE - Create an Estimate**

**SELECT** the **NEW** icon to create a new estimate

**Enter the Following:**

**Job Number** >> 07S100

**Region** >> Olympia Svc Center

**Click** OK, **Yes**

The Job Number is the Working number for the Estimate, this will be renamed to the PS&E Job Number when the project is ready for AD.

**EXAMPLE:**

07 A 001

Current Year --> Region Code --> Sequence No.

It is **not Necessary** to have a PS&E job number when beginning an estimate, but you should have a 6 character name that uniquely identifies the estimate. i.e use the Work Order Number or WIN Number

Your new Estimate will be created. To begin entering data:

**Click** the **Estimates** icon.

**Scroll** through the estimates list for your Region.

**Double-Click** on your estimate.
General Info Tab

The General Info tab is where the Basic Project Information and contacts are entered.

Enter the title using all 4 lines
First line – Route
Second line – First Line of Title
Third Line – Second Line of title (may be left blank)
Forth Line – Job Number (title will not print on reports if not present)

CONTRACT – This will be filled in by the Contract Ad & Award office at AD.
REGION – Auto-filled (based on your user ID)
WORK ORDER NUMBER – Enter your 6-digit design charge number, (XL number)
MEASUREMENT SYSTEM – ENGLISH (Default)
CONTINGENCY % - This will usually be 4%
ENGINEERING % - Enter appropriate %, a chart may be found in the EBASE Users Guide.

W.I.N. (work item number) Enter this number assigned to your project from CPMS
DESIGN P.E. CONSTRUCTION P.E. ESTIMATOR – Enter the appropriate contacts for this estimate.
Record Post Advertisement
Addendums to Cost and Quantities
Also Enter Plan Sheet Number

Estimate Owners may control Access to their Estimates

* These buttons Available at the Admin. Level
EXERCISE 1

2 - 3 Min.
This screen is for entering special Project level remarks that you want to bring attention to. Any text entered here will be printed on the bottom of the Preliminary Estimate Summary Report.

### AGREEMENTS:
- HR6-0302 WIDE LOAD AGREEMENT WITH TOWN OF ...
- HR6-0303 WIDE LOAD DETOUR WIT COUNTY
- NICKLE FUNDS ONLY
- CONSTRUCTION PERMIT WITH CITY ON FILE

These Are Examples of the type of informational Notes that may be entered in this area. It is always a good idea to place a note For any type Of agreement information that does not Appear, or whose participation Is unclear on the funding tab in this area.

**Proposal Description**

Enter the Route, County, Mile Posts, Project Title and if it is a State or a Federal Project. Always end this paragraph with a comma. This text is inserted into the paragraph at the top of the Proposal report.

**Type of Work**

This contract provides for the improvement of Pullman Road from Mission Avenue to Indiana Avenue and Pines Road at I-90, in Spokane County. This work shall consist of removing asphalt concrete pavement, placing Portland cement concrete pavement, pavement marking, upgrading signal system components, adjusting inlets, and other work.

Use this screen to enter a brief description of the Major items of work being performed. This text is limited to 4 lines, and will be printed at the top of the Preliminary Estimate Summary report.

This Text may be the same as that found in the Contract Special Provisions Under “Desc. Of Work”
EXERCISE 2

3 Min.
Funding Tab

If you would like to enter a special comment about any of the Funds you setup, Double click on the Fund Number and a window will be displayed for text entry. Any text entered here will be printed on the Fund Report.

A Fund Number is simply a placeholder to group Participants together under.

Create your Fund numbers by clicking the ADD button and entering a sequence of numbers, 5, 10, 15; 2,4,6... You may use any sequence that makes sense to you.

One participant per line. Each Participant must have a unique name. A Federal Aid Project Number must be entered for all federal participants.

Some Participants have a set dollar amount they have agreed to pay towards the project - a Maximum Amount.

In most cases a Max Amount Participant should be entered as a Funding Sequence of 1, the Primary participant, with a Participation Percentage shown as 100%. Should it be necessary to remove the Max Amount, either enter a zero, or delete and re-add the participant/fund match line.
**EXAMPLE FUND**

Total dollars of work to be paid for by this example fund $5 = $100,000

<table>
<thead>
<tr>
<th>Participants</th>
<th>Fund Sequence (Order in which Dollars Contributed are spent)</th>
<th>Participation %</th>
<th>Actual $$$ Participant is obligated to contribute based on their Participation %</th>
</tr>
</thead>
<tbody>
<tr>
<td>King County</td>
<td>1</td>
<td><strong>100 %</strong></td>
<td>$20,000</td>
</tr>
<tr>
<td>Agreement for $10,000</td>
<td>2</td>
<td><strong>100 %</strong></td>
<td>$10,000</td>
</tr>
<tr>
<td>Federal</td>
<td>3</td>
<td><strong>86.50%</strong></td>
<td>$60,550</td>
</tr>
<tr>
<td>State</td>
<td>4</td>
<td><strong>100%</strong></td>
<td>$9,450</td>
</tr>
</tbody>
</table>

**FUND #5 Total = $100,000**
EXERCISE 3

5 Min.
Groups Tab

Maximum allowed number of Groups in an estimate is: **99**

Use the "Move Group" button to re-position a Group in the sequence. (i.e. move group 5 to group 3... group 5 becomes group 3, group 3 becomes group 4, and group 4 becomes group 5).

When a Control Section is selected the **STATE ROUTE NUMBER** and the **TAX RATE** are automatically entered by EBASE.

**GROUP BREAKOUT RULES Plan Prep Manual 400.06(5)(a)**

When is a separate Group will be necessary?

- There is a change in the Program Number (PIN).
- A change in the Program or Sub-Program (P1, I2, etc.)
- A change in Funding (participants, rates, source of funding)
- A break in Control Sections.
- A separate Group is required for Third Party Damages.

Adding a New Group:

1. Click "ADD to add a new Group. First select a County for the Group, EBASE will generate a Control Section table based on the County entered.

2. Select a Control Section number that applies to the area where the work is to be performed. When a Control Section is selected the State Route Number and Tax Rate fields will automatically be completed.

3. Assign a Fund to the Group.

4. Enter a Group description, that is descriptive of the type of work being performed and / or the location of the work.

5. Select Program and enter a Program Item Number.

EXERCISE 4

7 Min.
Column Break Rules PPM 400.06(5)(b)

At a minimum a separate column is required for:

• Each Bridge
• Each wall – Unless these are tabulated separately in the plans.
• State Furnished Pit sites

Separate Columns should be used for individual construction lines i.e. Ramps, Mainline, Frontage Road.

Separate Columns can be to setup for work that may be cut from the Project due to possible funding issues. This will make for quick revisions to the estimate by simply deleting Columns of work, rather than time consuming re-calculations of Bid Items.
EXERCISE 5

5 Min.
Bid Items Tab

**Screen Areas**

**Item List**
Used to Sequence to Standard Items

**Column Quantity Assignment**
Designate how much of the Bid Item will be used in each portion of the project

**Function Button Panel**

- Add Item
- Delete Item
- Sort
- Save
- Re-Set Item Name
- Move Item
- NDA History Data
- Specifications
- Spreadsheet
- Lump Sum Breakout Items
- Item Comments (none)

**Bid Item Details**
Enter details for a Standard Item Number, Or Describe a Non-Standard Item

- Use the **PRORATE ITEM** check box to Distribute dollar amount across columns. – Use ONLY for MOBILIZATION.
Bid Items Tab

Adding Bid Items

Use the “ADD ITEM” Button
To insert Bid Items (Standard & Non-Standard) into an Existing bid item list.

Click on the Bid Item directly
Below where you will insert the
New item and click the ADD ITEM
Button.

Click SAVE
And RE-SET ITEMS NUMS to renumber
The Item Number Sequence.

Use the “STANDARD ITEMS” Button to select and
apply Standard Bid Items upon initial item entry,
or to add Standard Bid Items to the end of the
item list.

Click on the STANDARD ITEMS button.
Either

a) for a new list or for item placement at
the end of an existing list, Click the GO
button when the “Select Item Location”
dialog box is Displayed.
Select Standard Bid Items.
Click “Apply Selection”

b) to add Standard Bid Items to an
existing list, Enter the desired item
sequence placement in the “Select
item Location” dialog box is displayed.
Click GO
Select the Standard Bid Item(s)
Click “Apply Selections”
Click “Re-Set Items Nums” on the Button Panel.
Bid Items Tab

Developing the Bid Items

Use the Add Column Button to select columns where the items will be used and how much (planned quantity) will be placed in each location.

Item Measurement and Description Details are automatically imported when standard items are selected.

Quantity, cost, and unique descriptive information must be manually input.

Non-Standard Items require all data to be manually input.

Use the “UBA History Data” button to view the unit bid history for the standard item to help determine the unit price.

When using the Bid History, keep other factors in mind that may affect the averages such as project size, location, and project type. I.e., if this were mainly a signal project, you are going to get more contractors who are focused in that area—so they will bid higher for the concrete work in the project than a paving contractor.

DO NOT FOCUS ON THE SMALL ITEMS

80% of the estimate cost is comprised of 20% or less of the bid items—focus your best efforts on these item costs to insure they are accurate.

Also, round your quantities. Entering figures to the penny implies a level of accuracy that may not exist in the estimate.
Bid Items Tab

Developing the Bid Items - Cont’d

**Specifications**

Use the “Specifications” Button to view the Revision history for the item. Amendments & GSPs are shown here. Specification text or Reference to the Spec Book is listed for many items.

**Item Comments Exist!**

Use the “Item Comments box to note special conditions for the selected Bid Item

**Lump Sum Breakout Items**

Use the “Lump Sum Breakout Items” button to List and calculate cost the individual components that Make up each Lump Sum Bid Item. A Lump Sum Item Report may be printed detailing all Listed Lump Sum items.
The Section Headers Tab lists all available item categories.

Use this tab to:

- Add categories for Non-Standard Bid Items.
- Create New Section Headers for Alternate Bid Items
- Road User Cost – cost-plus-time bidding procedure (incentive) [http://www.wsdot.wa.gov/Projects/delivery/alternative/ABBidding]
EXERCISE 6
Parts 1-3

10 Min.
Non-Bid Items Tab

These are items of work or materials that are paid for as part of the total construction project, but are not performed by, nor furnished by the Contractor.

Numbers in the **700 to 799 range** have construction engineering and contingencies applied to them, but no sales tax. Federal Aid money may be used to fund all, part or none of this work.

**Examples of this type of work may include:**
- Utility Agreements
- County/City Agreements
- State Force Work other than WSDOT i.e. WSP
- Engineering/Consultant Services

Numbers in the **800 to 899 range** have no sales tax, construction engineering, or contingencies applied to them.

**Examples of this type of work may include:**
- State Force Work (WSDOT not to exceed $50k)
- State Supplied Materials (Parcel numbers, labor and payable agreements cannot be charged here)
- Rail Road Flagging (800 – 859 Range)
- Some Permits and Agreements

* Numbers in the **800 to 859 range** are to be used for Federal-Aid participating items.
** Numbers in the **860 to 899 range** are to be used for Federal-Aid non-participating items.

For guidelines in the use of State Force Work and State Supplied Materials, See Chapter 700.05(28) figure 7 of the Plans Preparation Manual.
EXERCISE 7

3 Min.
Alternate Items

There are a couple of different ways we handle Alternate Bids Items, these are defined as:

**Additive Alternate**
A supplemental unit of work or group of bid items, identified separately in the proposal, which may, at the discretion of the Contracting Agency, be awarded in addition to the base bid.

**Either / Or Alternate**
One of two or more units of work or groups of bid items, identified separately in the proposal, from which the Contracting Agency may make a choice between different methods or material of construction for performing the same work.

Most commonly the Either / Or alternative is included WSDOT contracts when alternate bidding is used.

To enter Alternates into EBASE, they are separated from the main set of Base bid items.

Alternate Bid Items are:
- Entered as the last bid items on the Bid Items Tab
- Assigned to an Alternate Section Header.
- Assigned to a separate Column and Group.

An Alternate may include only one or many bid items. If an Alternate is comprised of multiple bid items, all the bid items must be assigned to the same alternate Section / Code

**EXAMPLE: (either/or)**

**BASE BID ITEMS** (no Alt. code, assigned to normal Sections i.e. HMA, GRADING
ALTERNATE 1 [Concrete Br. Items] (Section / Alt Code A1)
ALTERNATE 2 [Steel Br. Items] (Section / Alt Code A2)

**RESULT:**
Base
Base + A1
Base + A2

**EXAMPLE: Multiple (either/or)**

**BASE BID ITEMS** (no Alt. code.)
Concrete br. Items A1
Steel Bridge Items A2
Reinforced Concrete Wall Items B1
Reinforces Earth Wall Items B2

**RESULT:**
Base
Base + A1 + B1
Base + A1 + B2
Base + A2 + B1
Base + A2 + B2
EXERCISE 8
Parts 1 & 2
10 Min.
Internal and external planholders use the Summary of Quantities to grasp the nature and magnitude of the work.

Program Managers use Preliminary Estimates to monitor and balance the overall WSDOT Program.

Accounting uses the Preliminary Estimates to set up construction phase Work Orders (aka Contract #s).

Contract Ad & Award identifies the low bid by comparing bids received on the Proposal Forms against the Preliminary Estimate. And the Work Classification Reports to determine which contractors are eligible to bid on specific contracts.

Pre-qualified Contractors submit their bids on the Proposal Form.

Project Offices compare bids in the Bid Check Report against the By Item Report to justify award or rejection of bids over 10% or $50K.