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 contactors = 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**

<table>
<thead>
<tr>
<th>Field</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Title</td>
<td>Plan Review Liaison</td>
</tr>
<tr>
<td>PS&amp;E Job Number</td>
<td>Plan Review Liaison</td>
</tr>
<tr>
<td>Work Order Number</td>
<td>CPMS / Program Management</td>
</tr>
<tr>
<td>Dollars Budgeted</td>
<td>CPMS / Program Management</td>
</tr>
<tr>
<td>Const Eng. %</td>
<td>EBASE User’s Guide or Plans Prep Manual 800.03(2)</td>
</tr>
<tr>
<td>Contingency %</td>
<td>EBASE User’s Guide or Plans Prep Manual 800.03(2)</td>
</tr>
</tbody>
</table>

**TEXT DATA tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Remarks</td>
<td>EBASE User’s Guide or EBASE Fundamentals (for type &amp; Format)</td>
</tr>
<tr>
<td>Proposal Description</td>
<td>EBASE User’s Guide or EBASE Fundamentals (for type &amp; Format)</td>
</tr>
<tr>
<td>Text Data</td>
<td>EBASE User’s Guide or EBASE Fundamentals (for type &amp; Format)</td>
</tr>
</tbody>
</table>

**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](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**

<table>
<thead>
<tr>
<th>Field</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>County</td>
<td>TRIPS GEOMETRIC Report</td>
</tr>
<tr>
<td>Control Section</td>
<td>TRIPS GEOMETRIC Report</td>
</tr>
<tr>
<td>Fund Number</td>
<td>FUNDS Tab (create designations per EBASE Users Guide)</td>
</tr>
<tr>
<td>Group Desc.</td>
<td>PROJECT SUMMARY (to determine where breaks occur)</td>
</tr>
<tr>
<td>Sub Program</td>
<td>PROJECT SUMMARY</td>
</tr>
<tr>
<td>Program Item # (P.I.N.)</td>
<td>PROJECT SUMMARY</td>
</tr>
<tr>
<td>Safety Class Code</td>
<td>EBASE User’s Guide</td>
</tr>
</tbody>
</table>
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

GROUP 1
MP 172 to MP 175

COLUMN 1
PAVMENT REHAB.

DATA FROM GROUPS TAB

GROUP 1
MP 172 to MP 175

GROUP 2
SIGNALS

COLUMN 2
PEDESTRIAN Pavement Warning System

COLUMN 3
SIGNAL TYPE 1

COLUMN 4
SIGNAL TYPE 2

DATA FROM COLUMNS TAB

DATA FROM Bid Items TAB

FUND 2
- AGMNT
- CITY
- FEDERAL
- STATE

GROUP 2
SIGNALS

Bid Item 1
Bid Item 2
Bid Item 3

Bid Item 2
Bid Item 2
Bid Item 4

Bid Item 2
Bid Item 5

Bid Item 2
Bid Item 6
Bid Item 7

Bid Item 8

FUND 3
- STATE

GROUP 3
Reimb. For 3rd Party Damage

COLUMN 5
Reimb. For 3rd Party Damage

DATA FROM Funding TAB

FUND 1
- FEDERAL
- STATE

GROUP 1
MP 172 to MP 175

COLUMN 1
PAVMENT REHAB.

FUND 2
- AGMNT
- CITY
- FEDERAL
- STATE

GROUP 2
SIGNALS

COLUMN 2
PEDESTRIAN Pavement Warning System

COLUMN 3
SIGNAL TYPE 1

COLUMN 4
SIGNAL TYPE 2

FUND 3
- STATE

GROUP 3
Reimb. For 3rd Party Damage

COLUMN 5
Reimb. For 3rd Party Damage
Getting Started

To begin, open the EBASE Application:

Click \(\text{Start}\) and Select \text{Programs\DOT Applications\EBASE}\n
Read the EBASE Broadcast Message. This will alert you of the latest news or Attention Items.

Click \text{Close}\n
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

- Exit Program
- Close Window
- Sort List
- Scroll List
- Create New Estimate
- Filter List
- Open Standard Item Table
- Delete Estimate
- Lock Estimate

(See Fundamentals Guide for filters)
SELECT the **NEW** icon to create a new estimate

You would select the ESTIMATES button to view or edit existing estimates.

**ENTER THE FOLLOWING:**

```
JOB NUMBER >>> 11S___
REGION >>> (this will default to your Region)
```

CLICK **OK**
And **Yes**

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

CLICK, the **ESTIMATES** icon.

SCROLL, through the estimates list for your Region.

DOUBLE-CCLICK, 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.
General Info Tab

Additional Function Areas.

These buttons Available at the Admin. Level

Record Post Advertisement
Addendums to Cost and Quantities
Also Enter Plan Sheet Number

Estimate Owners may control Access to their Estimates

9
EXERCISE 1

2 - 3 Min.
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.

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.

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.

<table>
<thead>
<tr>
<th>Funds</th>
<th>Participants</th>
<th>Fund / Participant Matching</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fund Number</td>
<td>Participant Name</td>
<td>Federal Aid Project Number</td>
</tr>
<tr>
<td>5</td>
<td>FEDERAL</td>
<td>ID-0106(211)</td>
</tr>
<tr>
<td>10</td>
<td>STATE</td>
<td>4912</td>
</tr>
<tr>
<td>20</td>
<td>GCA-4912</td>
<td></td>
</tr>
</tbody>
</table>

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.

- Add one Fund/Participant line at a time and complete before adding another.
- A Funding sequence must be entered to show who pays first, second etc. (Each fund may have up to four participants.)
- It is ok for a participant contribute to more than one fund.
- A Participation Percentage must be entered for each - in decimal format.
## EXAMPLE FUND

<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>100%</td>
<td>$20,000</td>
</tr>
<tr>
<td>Agreement for $10,000</td>
<td>2</td>
<td>100%</td>
<td>$10,000</td>
</tr>
<tr>
<td>Federal</td>
<td>3</td>
<td>86.50%</td>
<td>$60,550</td>
</tr>
<tr>
<td>State</td>
<td>4</td>
<td>100%</td>
<td>$9,450</td>
</tr>
</tbody>
</table>

FUND #5 Total = $100,000
EXERCISE 3

5 Min.
**Groups Tab**

**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.
Columns Tab

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

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

**Bid Items Tab**

**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

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 Req. all data 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

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.

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

Enter any Special Conditions Here that may have an impact on Construction cost of the item.

• These notes may be printed for inclusion in the project file.

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](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.

<table>
<thead>
<tr>
<th>Number</th>
<th>Column</th>
<th>Item Description</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>700</td>
<td>1</td>
<td>700 MOTORIST ASSISTANCE PATROL (WSP) 1-91-31</td>
<td>1,500,000</td>
</tr>
<tr>
<td>701</td>
<td>1</td>
<td>701 ELECTRICAL SERVICE AGREEMENT SCD-2252</td>
<td>360,000</td>
</tr>
<tr>
<td>702</td>
<td>3</td>
<td>702 SERVICE AGREEMENT SCK0643</td>
<td>10,000,000</td>
</tr>
<tr>
<td>801</td>
<td>3</td>
<td>STATE SUPPLIED SIGNAL SYSTEM COMPONENTS</td>
<td>4,000,000</td>
</tr>
<tr>
<td>802</td>
<td>4</td>
<td>STATE SUPPLIED SIGNAL SYSTEM COMPONENTS</td>
<td>4,000,000</td>
</tr>
<tr>
<td>860</td>
<td>8</td>
<td>BRIDGE RAILING PROCUREMENT</td>
<td>30,000,000</td>
</tr>
</tbody>
</table>

Total: 49,850.00
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)

<table>
<thead>
<tr>
<th>BASE BID ITEMS</th>
<th>ALTERNATE 1</th>
<th>ALTERNATE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>(no Alt. code, assigned to normal Sections i.e. HMA, GRADING)</td>
<td>[Concrete Br. Items] (Section / Alt Code A1)</td>
<td>[Steel Br. Items] (Section / Alt Code A2)</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>BASE BID ITEMS</th>
<th>Concrete Br. Items</th>
<th>Steel Bridge Items</th>
<th>Reinforced Concrete Wall Items</th>
<th>Reinforced Earth Wall Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>(no Alt. code,)</td>
<td>A1</td>
<td>A2</td>
<td>B1</td>
<td>B2</td>
</tr>
</tbody>
</table>

**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