Commonwealth of Virginia

Virginia Department of Transportation (VDOT)

Construction Division

PCES User Manual

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PCES Overview

VDOT's Project Cost Estimating System (PCES) is designed to:

- Collect and store cost estimates for specific projects in the Six Year Improvement Plan (SYIP) and the Secondary Six Year Improvement Plan (SSIP).
- Enable project managers to generate, update, and view project cost estimates for projects that have been scoped.
- Import cost estimates from Preconstruction, as well as allows for manual entry of costs.

Note:	*PCES is linked to IPM, POOL, PWA, and Cardinal through the Data Warehouse and some data fields throughout the system are automatically populated by pre-existing data or as soon as UPC numbers are assigned. For example, any VDOT project with a UPC number will appear in the system as a POOL project within the purview of a VDOT district, whether or not it has been assigned to a project manager once created in POOL the UPC will show a POOL estimate in PCES in the Pre-Scoping phase.*

<u>Mandatory PCES usage by Project Managers</u>

VDOT's Project Managers (PM) are responsible for entering and updating project cost estimates in PCES and managing the resulting budgets for their projects. All project cost estimates must be reviewed and updated by the PM at every project milestone. Project Managers decide, based on input from supporting VDOT divisions, when Preconstruction should be selected for the cost estimates, with the exception of the Final Submission cost estimate. Before selecting Preconstruction make sure that all portions of the estimate have been included (bridge, drainage, traffic etc.) and a prime project identifier has been created for the project. PCES estimates should not be "forced" to match Preconstruction figures. Final submission cost estimates should always be based on the fully detailed Preconstruction construction estimate. If there is a wide gap in the cost figures between PCES and Preconstruction before advertisement; the PM should determine and document the reason for the variance and adjust his/her recommended project estimate accordingly. When Preconstruction is selected as the estimate source PCES data will still be accessible by choosing PCES on the Summary page of the workbook.

It is critical to VDOT's project management program that the PCES program is fully understood and utilized thoroughly and correctly. PCES is not a complementary or supplementary program. Rather, it is an integral component VDOT's project management program - providing a central repository of project cost data for budgeting and funding purposes, as well as tracking projects and managing information needed for an efficient and cost effective construction program.

Sensitive and Confidential Information

All PCES program rights as well as the data contained within and linked to and are the exclusive property of VDOT. In addition, due to the sensitive and confidential budgetary and cost estimate information contained in PCES, access to the information contained in PCES is intentionally and specifically limited to VDOT employees and local government employees and representatives granted access to the system by VDOT.

Warning:	*Use of the system implies that the user will safeguard the information to the advantage of VDOT and its local government partners.*

PCES Assistance

The Construction Division is responsible for maintaining and updating PCES. Comments/questions regarding the utilization and performance of PCES may be addressed to Corey Bourne at (804) 786-2538.

Local government users with access problems may call the IT Help Desk at 1(866) 637-8482 for assistance.

User Access and Rights

Any person listed with an e-mail address on VDOT's intranet should be able to access PCES. VDOT users may access the system via the VDOT intranet at: http://isyp/scoping/ces_search.asp.

Local government users may access the system via an external access portal at: https://ss/vpn.vita.virginia.gov/vdot.

Note:	*Access by local government users requires issuance of a user name and password by VDOT's Information Technology Division, each time the user accesses the system.*

To enter, upload, approve, or change project information in PCES, a training class must be attended by the user prior to being granted additional "user" rights. These users are either assigned as project managers on specific projects and/or assigned an "Estimator Level" on a district-by-district basis which allows the user to modify the project information. VDOT users must fill out form ITD-35A (Appendix A) requesting permission for PCES User rights and the level desired. They also must request access from their PM through SARA when seeking permissions higher then Guest or Estimator. External (local government users) must fill out form ITD-35E and ITD-36E (Appendix B).

Access Levels and Permissions in AUMS (Automated Users Management System)

Local Access or External User Access

view project details download blank

project estimates download documents,
images and videos
upload project estimates for VDOT Project Manager review/approval
download documents, images and videos

District Administration View project
details Assign project managers
download estimates and upload estimates
download documents, images and videos

Estimator
View project details download
and upload estimates, initiate
PD-1 process, select
recommended estimate, update
split estimate screen,
download and upload documents, images and videos,
document division comments update Award
Estimate initiate PD-1 process, delete documents,
images and videos, edit project information, manage
schedule.

District Approval View project
details download and upload
estimates, initiate PD-1 process,
select recommended estimate,
update award estimate,
download and upload documents, images and videos,
document division comments, delete documents,
images and videos, edit project information, manage
schedule,
build team (internal and external
members), assign action items, setting 5
CEP milestone meetings,

Super User
Includes project manager (individual & district) rights
Includes administrator rights
Includes estimator rights
Includes managing access level rights.
Assigns users rights in AUMS

PCES View

Header

The top of the Project List page is the header:

Figure 1: Project List Header

- Clicking the VDOT logo will take the user to the official external VDOT web-site.
- Clicking on the **Project Cost Estimating System** link of the header will take the user to the main page of the application (the project list).
- Clicking on **IT Support** link will not work contact Corey Bourne at (804) 786-2538.
- Clicking on the **User's Guide** link will route user to the most current version of this manual.
- Clicking on the **About** link will list version information about this application.

Initial Screen

The initial screen lists available projects and allows the user to limit the list by use of filter or search criteria.

The initial page of PCES is the Project Search screen. From here, you can locate any project within the system using the filters and search criteria at the top of the page.

The search results show the information about the State Project number, Description, Route, UPC, District, Project Manager, and estimate source.

The project filters include the standard District, Counties, Residencies, Cities/Towns, Road System, project status, projects and roles.

The system also has filters by Project and Role.

Table 1: Projects status filters options:

Project Status	Description
All Projects	All projects
Development	Projects under development (status code < 30) (default)
SYP	Projects included in the Six-Year Program
Construction	Projects under construction
Non CN	(future use)
Expired Est.	Provides a listing of expired est. based on business rules
24 month ad	Projects in the 24 month ad window
3 year STIP	Projects in the FHWA required State Transportation Improvement Plan

In addition, the project list can be reduced down using the Projects/Roles filters.

Table 2: Roles filter options:

Filter	Description
All Roles	All Roles
Approver	Projects where you are the individual assigned to approve an estimate
Project Manager	Projects where you are the assigned Project Manager (PM)
Contact	Projects where you are a contact

The search criteria include Route/State project number/UPC Code.

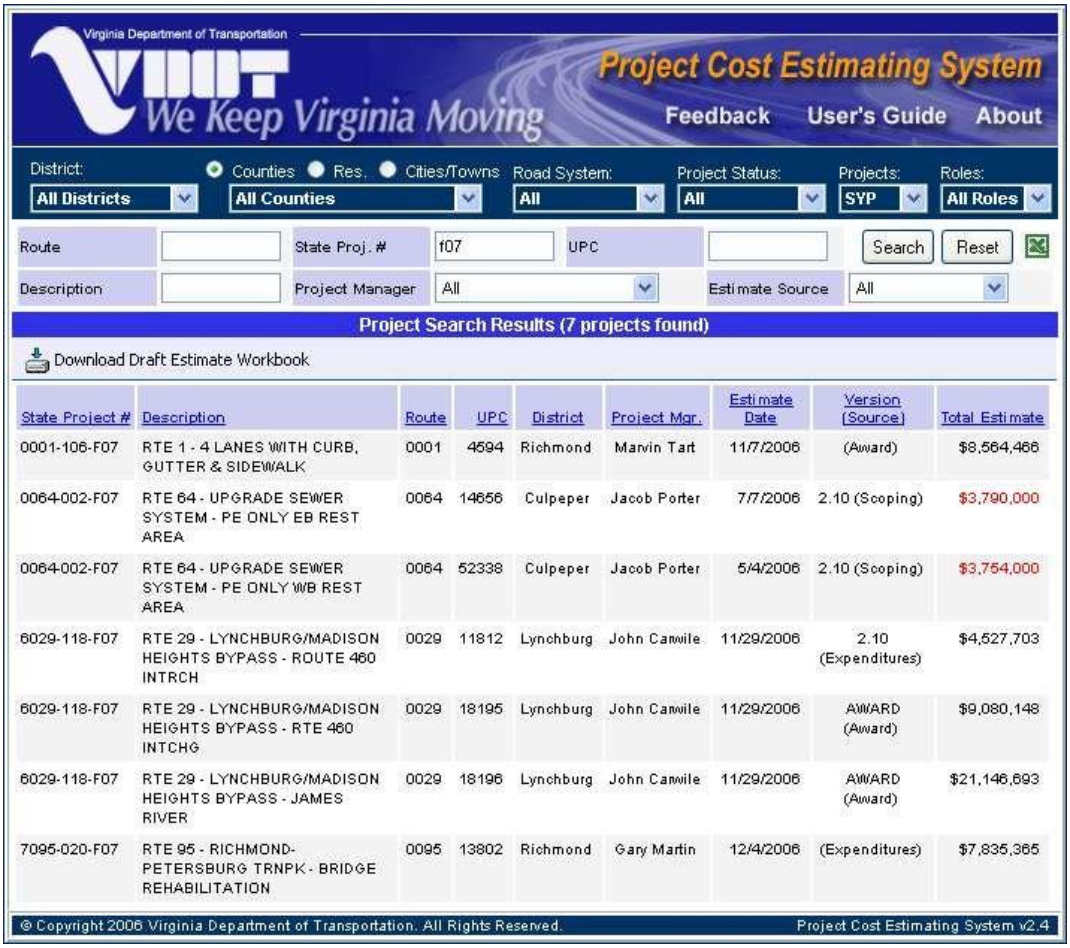
Note:	*UPC is the identification number that the Cardinal system assigns to projects. This number is used across the enterprise to identify projects. It is unique to the project, and will never be assigned to any other project.*

Figure 2: PCES Search Criteria

You may search by Route number, State Project number, or UPC code by entering data in the appropriate fields, and press the Search to view the result. Clicking the Reset will clear all entries from the search fields.

Project Search Results

The next part of the page is the Projects Search Results, comprised of a, Totals Bar, Listing, and Page Navigation.



State Project #	Description	Route	UPC	District	Project Mgr.	Estimate Date	Version (Source)	Total Estimate
0001-106-F07	RTE 1 - 4 LANES WITH CURB, GUTTER & SIDEWALK	0001	4594	Richmond	Marvin Tart	11/7/2006	(Award)	$8,564,466
0064-002-F07	RTE 64 - UPGRADE SEWER SYSTEM - PE ONLY EB REST AREA	0064	14656	Culpeper	Jacob Porter	7/7/2006	2.10 (Scoping)	$3,790,000
0064-002-F07	RTE 64 - UPGRADE SEWER SYSTEM - PE ONLY WB REST AREA	0064	52338	Culpeper	Jacob Porter	5/4/2006	2.10 (Scoping)	$3,754,000
6029-118-F07	RTE 29 - LYNCHBURG/MADISON HEIGHTS BYPASS - ROUTE 460 INTRCH	0029	11812	Lynchburg	John Canwile	11/29/2006	2.10 (Expenditures)	$4,527,703
6029-118-F07	RTE 29 - LYNCHBURG/MADISON HEIGHTS BYPASS - RTE 460 INTCHG	0029	18195	Lynchburg	John Canwile	11/29/2006	AWARD (Award)	$9,080,148
6029-118-F07	RTE 29 - LYNCHBURG/MADISON HEIGHTS BYPASS - JAMES RIVER	0029	18196	Lynchburg	John Canwile	11/29/2006	AWARD (Award)	$21,146,693
7095-020-F07	RTE 95 - RICHMOND-PETERSBURG TRNPK - BRIDGE REHABILITATION	0095	13802	Richmond	Gary Martin	12/4/2006	(Expenditures)	$7,835,365

Figure 3: Search Results

Totals Bar

A blue bar listing the total number of projects in the list after all searches and filters are supplied is displayed before the list of search results.

Figure 4: Projects Search Results - Totals Bar

Draft Estimate Workbook

Clicking

enables the user to download an empty PCES Worksheet where they may create a draft estimate.

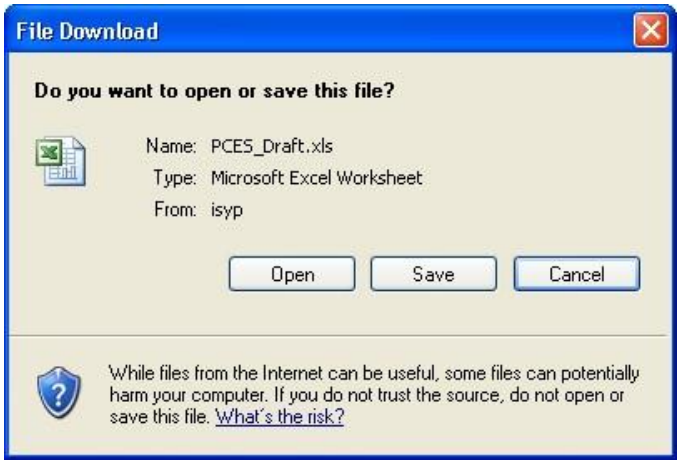


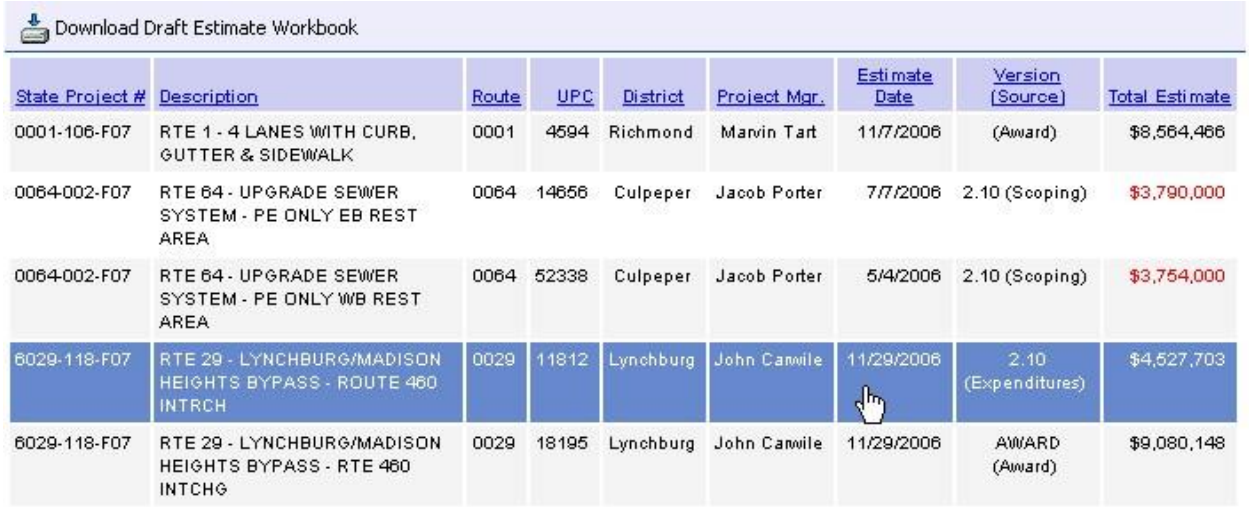
Figure 5: Draft PCES Worksheet Select Open, Save or Cancel as appropriate.

Note:	*If you encounter problems while trying to upload estimates from an earlier version of PCES, it may be helpful to:* 1. *download a blank workbook in Version 7.1,* 2. *enter the project information, and* 3. *upload the workbook*

Project Search Results

This page element is a list of all the projects that satisfy the filter criteria set in the controls above. Please note that the default (opening page) is filtered by SYIP and sorted by state project number.

The list can be sorted by clicking on any of the column headings, which allows the user to sort the list by column in ascending or descending order. Only one field may be sorted at a time.



State Project #	Description	Route	UPC	District	Project Mgr.	Estimate Date	Version (Source)	Total Estimate
0001-106-F07	RTE 1 - 4 LANES WITH CURB, GUTTER & SIDEWALK	0001	4594	Richmond	Marvin Tart	11/7/2006	(Award)	$8,564,466
0064-002-F07	RTE 64 - UPGRADE SEWER SYSTEM - PE ONLY EB REST AREA	0064	14656	Culpeper	Jacob Porter	7/7/2006	2.10 (Scoping)	$3,790,000
0064-002-F07	RTE 64 - UPGRADE SEWER SYSTEM - PE ONLY WB REST AREA	0064	52338	Culpeper	Jacob Porter	5/4/2006	2.10 (Scoping)	$3,754,000
6029-118-F07	RTE 29 - LYNCHBURG/MADISON HEIGHTS BYPASS - ROUTE 460 INTRCH	0029	11812	Lynchburg	John Carwile	11/29/2006	2.10 (Expenditures)	$4,527,703
6029-118-F07	RTE 29 - LYNCHBURG/MADISON HEIGHTS BYPASS - RTE 460 INTCHG	0029	18195	Lynchburg	John Carwile	11/29/2006	AWARD (Award)	$9,080,148

Figure 6: Project Search Screen - selecting the project

The following details are displayed:

State Project # ..... The state project number is 10 alphanumeric characters long, with a format of XXXX-XXX-XXX (Route, County/City, and Section).

Description ..... A textual narrative briefly describing the project (for quick identification and reference purposes)

Route ..... The Route number of the road where the project will take place. This value is used in determining the state project number.

UPC ..... The identification numbers the FMSII system assigns to projects. This number is used across the enterprise to identify projects. It is unique to the project, and will never be assigned to any other project.

District ..... The primary construction district responsible for a project.

Project Mgr. ..... The person named to be responsible for the management of the project

Estimate Date ..... Date estimate was selected

Version (Source) ..... PCES version or system previous to PCES

Total Estimate ..... A dollar amount representing the total PE, RW and CN amounts needed to complete the project.

Warning:	*Total Estimate numbers in RED indicate the project estimate needs immediate attention. The project expenditures exceed the recommended estimate for PE, RW or CN totals.*

You may export the results of the search to MS Excel by clicking on to the right of the search bar. A dialog box similar to the one below will appear.

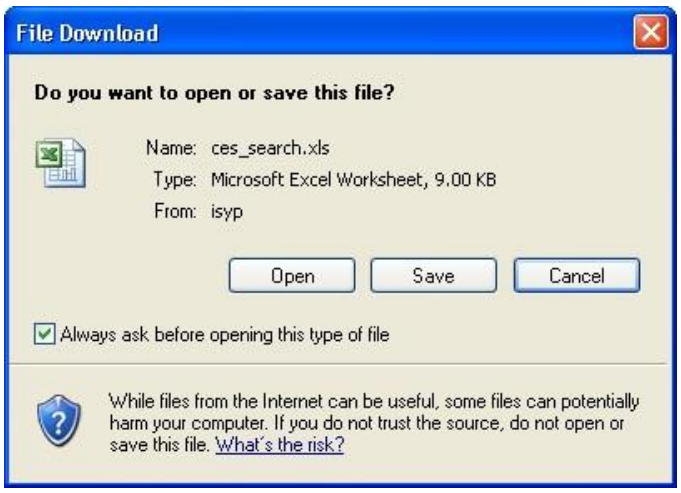


Figure 7: Export to MS Excel Select

Open, Save or Cancel as appropriate.

Page Navigation

Long lists of projects are broken up into pages to make it easier for the user to browse. Below the project list is a paging control which will allow the user to navigate through the project result set.

Figure 8: Page Navigation

Project Screen

From the Project Search Results (see page 5) select a project by moving the cursor over the project on the list (project is highlighted) and clicking on the row.

State Project #	Description	Route	UPC	District	Project Mgr.	Estimate Date	Version (Source)	Total Estimate
0001-106-F07	RTE 1 - 4 LANES WITH CURB, GUTTER & SIDEWALK	0001	4594	Richmond	Marvin Tart	11/7/2006	(Award)	$8,564,466
0064-002-F07	RTE 64 - UPGRADE SEWER SYSTEM - PE ONLY EB REST AREA	0064	14656	Culpeper	Jacob Porter	7/7/2006	2.10 (Scoping)	$3,790,000
0064-002-F07	RTE 64 - UPGRADE SEWER SYSTEM - PE ONLY WB REST AREA	0064	52338	Culpeper	John Doe	5/4/2006	2.10 (Scoping)	$3,754,000
6029-118-F07	RTE 29 - LYNCHBURG/MADISON HEIGHTS BYPASS - ROUTE 460 INTRCH	0029	11812	Lynchburg	John Carwile	11/29/2006	2.10 (Expenditures)	$4,527,703

Figure 9: Select Project

The PCES Project Estimates screen displays with the Project Estimates Tab selected as a default.

Figure 10: PCES

Application Bar

Figure 11: Application Bar

The PCES Project Estimates Screen has an application bar located just below the VDOT logo to indicate to the user the current application

. Clicking on any other application button will navigate the user to the application selected.

Search Bar

Figure 12: Project Details Screen - Search Bar

The search bar contains an area for Project Search and UPC. By clicking on

, the user is taken to the Initial PCES Project Screen (see Initial Screen, page 4) where a more detailed search may be performed.

Users can perform a UPC search from the Project Details screen by entering the UPC

and click the small arrow to the right of the field.

Project Details Tab

The project details are divided into two screens:

Project Information
Project Estimates

Use the tabs at the top of the page (under the PCES tab) to navigate between these screens.

Figure 13: Project Details Tabs

Common to all screens accessed by the Project Details Tabs are the Project Summary, and the Show/Hide Feature

Show/Hide Section details

The default view of each section is in the expanded view to show all details as indicated by the upward pointing arrow to the right of all blue section title bars.

The user may expand or collapse all sections by clicking on

.

Each section may be collapsed, or again expanded by clicking the arrow. A collapsed section will display a downward pointing arrow. This functionality allows the user to show or hide each section.

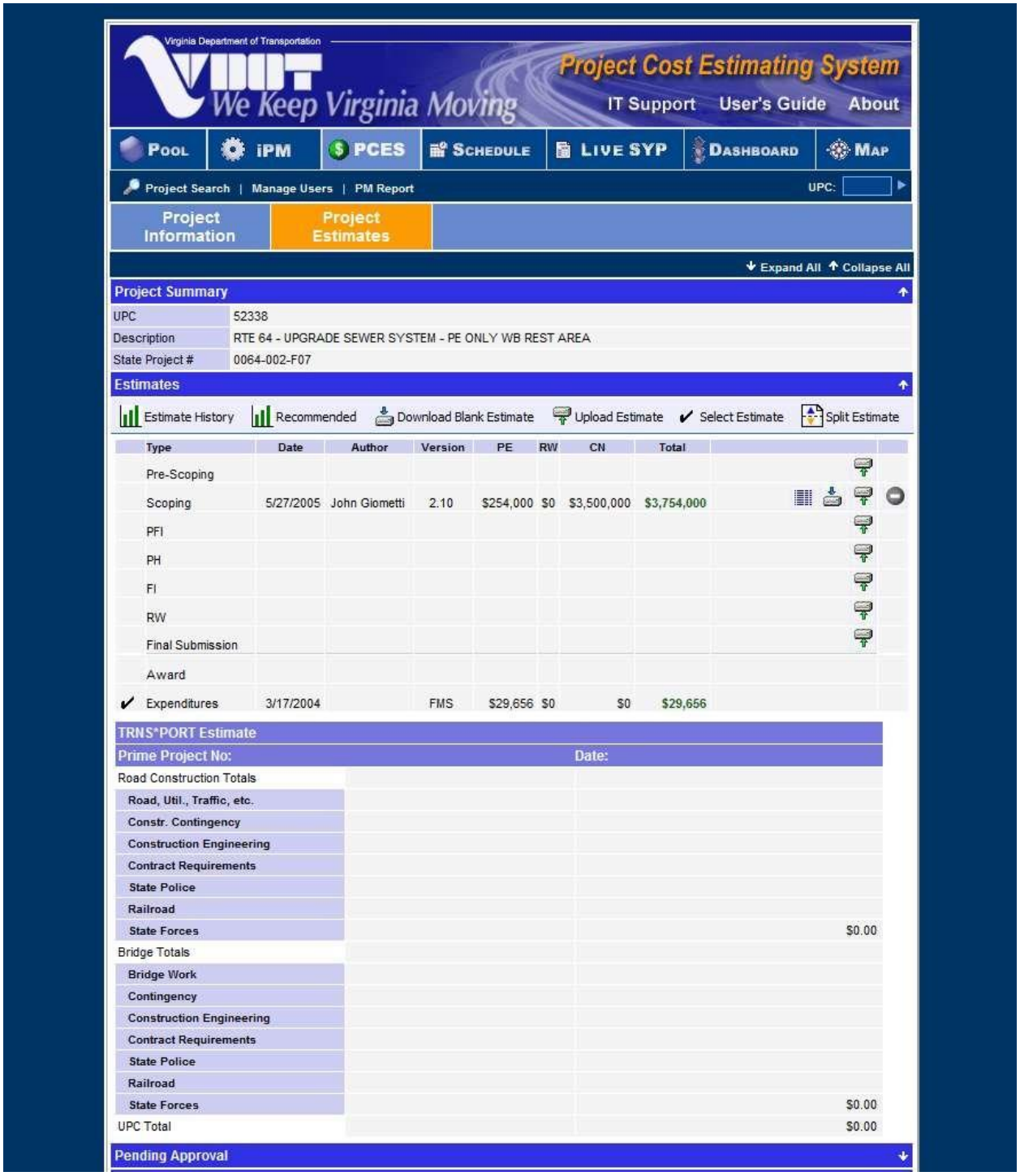


Figure 14: Show / Hide functionality

Project Information Tab

Project Information has project specific information grouped in the categories:

Summary
Details
Location
Status

Summary

The summary provides a summary to remind the user of the project currently being viewed.

Summary	
UPC	11812
Description	RTE 29 - LYNCHBURG/MADISON HEIGHTS BYPASS - ROUTE 460 INTRCH
State Project #	6029-118-F07
Scope of Work	NEW CONSTRUCTION

Figure 15: Project Information – Summary

UPC .....The identification numbers the FMSII system assigns to projects. This number is used across the enterprise to identify projects. It is unique to the project, and will never be assigned to any other project.

Description .....A textual narrative briefly describing the project (for quick identification and reference purposes)

State Project # .....The state project number is 10 alphanumeric characters long, with a format of XXXX-XXX-XXX (Route, County/City, and Section).

Scope of Work .....Broad category describing the work proposed in the project.

Details

Details	
Project Type	PRIMARY - TWO HEARING DESIGN
Job Number(s)	P101, R201
Project Manager	John Doe
VTA GF	
VTA PTF	
Comments	GOES WMD #1318(P100). ID #18196(CN).
Primary Consultant	

Figure 16: Project Information – Details

Project Manager ..... The person named to be responsible for the management of the project

Project Type ..... Schedule Type from Project Pool

Job Number(s) ..... Numbers identifying jobs that relate to each of the phases of a project

VTA_PTF ..... Y or N indicator that the project is funded by an action of the general assembly using funds earmarked for priority projects

VTA_GF ..... Y or N indicator that the project is funded by an action of the general assembly using general funds

Comments ..... Comments related to the project entered via Project Pool by an authorized person
Primary Consultant ..... Name of the primary consultant, from Project Pool, Misc. Tab, Misc. section

Change Project Manager

Users with Administrator rights can assign the Project Manager from the Project Information screen. To change the Project Manager do the following:

1. Press the [Select Manager].
2. Find the person from the list of VDOT employees by navigating through the list or by entering a name in the Name search field at the top of the page, and [Search]

click .

Figure 17: Change Project Manager

3. Click on the row to select and assign the Project Manager.

Location

Location as the name implies, provides project location related information.

Location	
District	Lynchburg
Residency	Appomattox
County	Campbell
County Priority	NA
Road System	Primary
Route	0029
Road Name	
Start Location	0.139 MILE SOUTH EXISTING ROUTE 460 (ECL LYNCHBURG)
End Location	0.354 MILE NORTH EXISTING ROUTE 460 (NCL LYNCHBURG)
Length (mi.)	0.49

Figure 18: Project Information – Location

District .....The primary construction district responsible for a project

Residency .....The VDOT Residency, in whose jurisdiction the project takes place

County .....The County, which represents the jurisdiction in which the project takes place

County Priority.....From Project Pool

Road System .....Drop down division of funding groups e.g. primary, urban, secondary, etc

Route .....The Route number of the road where the project will take place. This value is used in determining the state project number

Road Name.....Street Name from Project Pool

Start Location .....Description of the physical starting point for the project

End Location .....Description of the physical end point for the project

Length ..... A measurement expressing the distance between the starting point (From Location) to the finish point (To Location) (Miles, Kilometers, Feet, Meters, etc.)

Status

Status	
Project Status	CONSTRUCTION STARTED
Accomplishment	NOT APPLICABLE
Ad Date	

Figure 19: Project Information – Status

Project Status ..... ACTIVITY DATES SET
ADVERTISED
AWARDED
BUDGET ITEM ONLY
CLOSED (CLAIMS PAID)
CONSTRUCTION COMPLETED
CONSTRUCTION STARTED
FILE MICROFILMED
INDEF DEFER (DECISION)
MAINTENANCE ONLY
MISC FUNDS/MONITORING
NO DATES SET YET
NOT IN CURRENT SYP
PPTA PROJECT
PRELIMINARY WORK COMPLETED
RAILROAD FORCE AUTHORIZATION
RW MONITORING ONLY
STORAGE (INACTIVE)
STUDY ONLY
TEMP DEFER (DECISION)
TRAINING PROJECT ONLY
UNSCHEDULED CONSTRUCTION

NEED PROG & PLAN DIR ACTION ZEROED

Accomplishment ..... CAPITAL OUTLAY
CITY CONTRACT
CONTRACT
COUNTIES, DEVELOPERS, ETC
DESIGN BUILD
DISTRICT CONTRACT
HIRED EQUIPMENT
NOT APPLICABLE
RAILROAD FORCES
REGIONAL CONTRACT
SAAP CONTRACT
STATE FORCES/HIRED EQUIPMENT
WORKORDER

Ad Date ..... The Ad date is the date that the project advertises. This date must be the same as the Pool – CN Start date, and the same as the Schedule – planned end date for Activity 80 unless an actual end date exists. If an actual end date for Activity 80 exists, then this date becomes the ad date.

Project Estimates Tab

Selecting Cost estimate figures by Project Managers

Note:	*PCES estimates should not be "forced" to match Preconstruction figures. If before advertisement there is a wide gap (greater than 20%) in the cost figures between PCES and Preconstruction, the Project Manager should determine and document the reason for the variance and adjust his/her recommended project estimate accordingly.*

Note:	*Final Submission cost estimates should always be based on the fully detailed Preconstruction construction estimates.*

Warning:	*Before selecting PCES as estimate source, all applicable tabs of f the PCES estimate workbook must be fully completed. If Preconstruction is then selected, PCES data will still be accessible by selecting PCES on the Summary Page.*

Project Estimates has project specific information grouped in the categories:

Project Summary
Estimates
Preconstruction Estimates Pending
Approval
Estimate Supporting Documents
PD-1
Funding and Authorizations

Project Summary

Project Summary	
UPC	52338
Description	RTE 64 - UPGRADE SEWER SYSTEM - PE ONLY WB REST AREA
State Project #	0064-002-F07

Figure 20: Project Estimates – Summary

UPC .....The identification numbers the FMSII system assigns to projects. This number is used across the enterprise to identify projects. It is unique to the project, and will never be assigned to any other project.

Description .....A textual narrative briefly describing the project (for quick identification and reference purposes)

State Project # .....The state project number is 10 alphanumeric characters long, with a format of XXXX-XXX-XXX (Route, County/City, Section).

Estimates

Estimates section is divided into four areas:

Menu bar
PCES Estimates List
Preconstruction Estimates

Menu Bar

Figure 21: Project Estimates – Estimates: Menu Bar

Estimate History

Clicking the Estimate History button will open up a window listing worksheets.

Note:	*All estimate workbooks (MS Excel format) entered by Project Management are placed in the project's "Estimate History" files. These estimates cannot be changed. They are for read only.*

By clicking on to download a listed worksheet; or click OK to close the window.

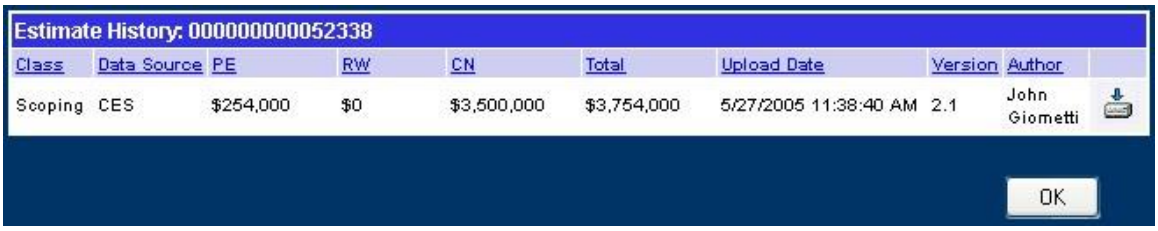


Figure 22: Estimate History list

Download Blank Estimate

Clicking Download Blank Estimate will download a blank worksheet pre-populated with some project information.

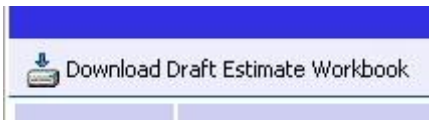


Figure 23: Download Blank Estimate

The alternate RW/Utility work sheets can be downloaded by checking use alternate R/W Utility worksheet when you download a workbook.

Select PCNs to use for Preconstruction estimate. Default is all PCNs and current coding requires a "prime" project be build in Preconstruction before any estimate can be imported.

Upload Estimate

Warning:	*Before a new project estimate is uploaded for recommendation, the Project Manager needs to consider whether or not the funding for the project is adequate. If the project phase is within the 36 month advertisement window, and the total estimate is greater than $50,000 or 10% the user uploading the estimate will be immediately routed to the Project Pool to create a PD-1.*

Clicking the Upload Estimate button will open form to select an Estimate Worksheet to upload.

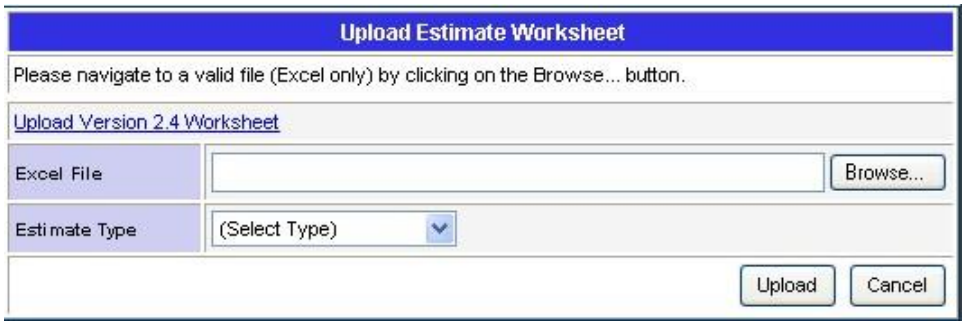


Figure 24: Upload Estimate Worksheet

1. Click Browse..., navigate to the location of the appropriate worksheet, and select it.
2. Select the Estimate Type:

Pre-scoping	PH	Final Submission
Scoping	FI	
PFI	RW	

3. Click Upload to upload the worksheet or Cancel the to cancel and close the window.
4. After uploading an estimate, the user will encounter the following status window asking the user whether to **Recommend this Estimate**, **Upload Supporting Docs,** and finally **Finish**.

Figure 25: Estimate Upload Status window

5. If Recommend this Estimate is selected, a Revision Detail screen will be displayed and the user will be asked to provide comments and answer questions prior to submitting the revision.

✔ Select Estimate

Clicking the Select Estimate button will open form to select a Recommended Estimate.

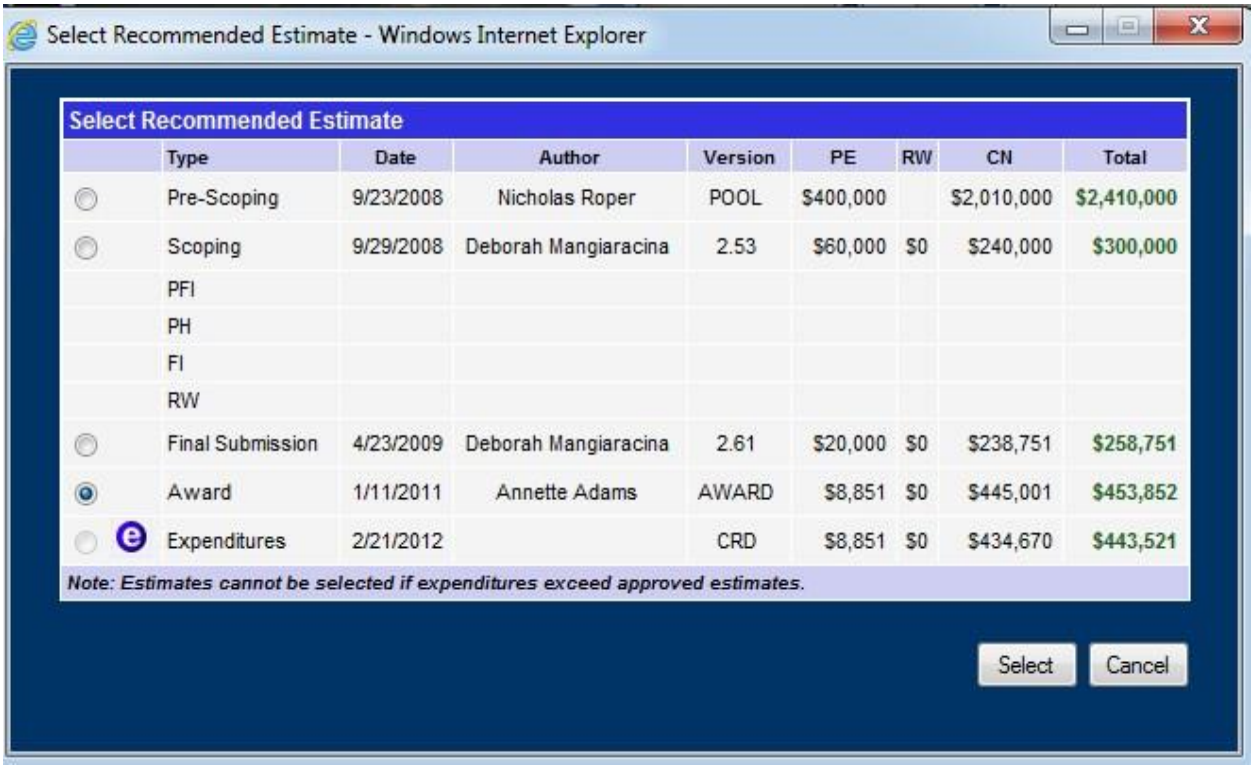
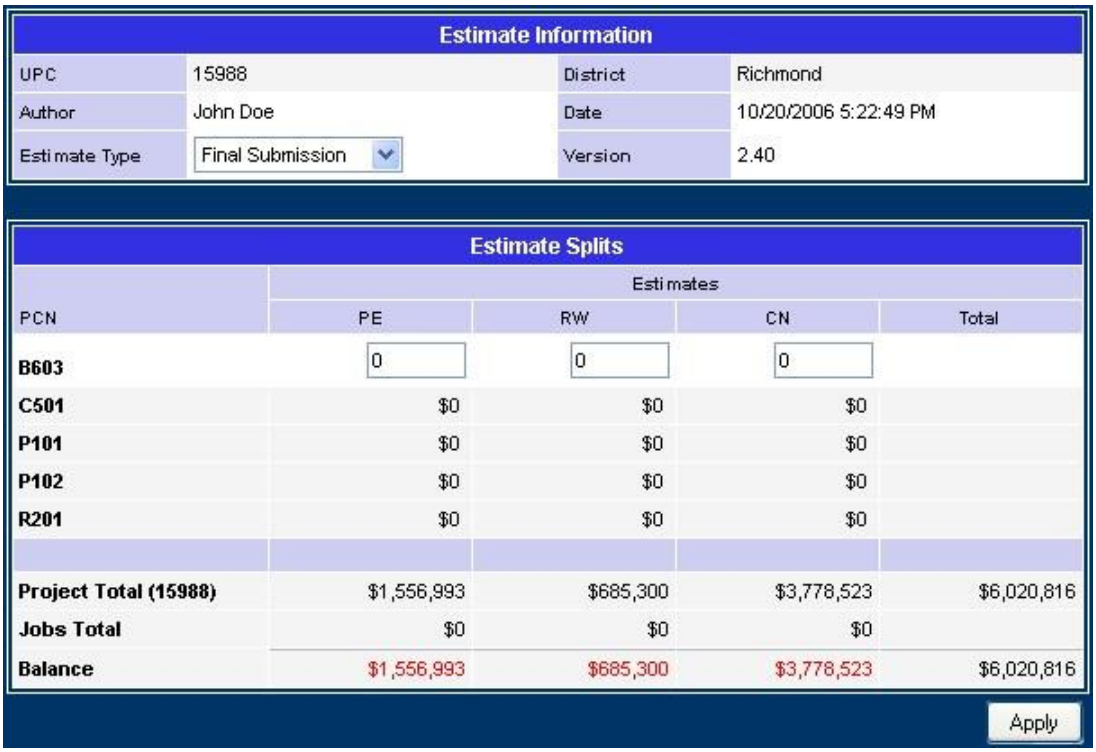


Figure 26: Select Recommended Estimate

1. Click selection ○ to the left of the estimate you desire, and click Select, or click Cancel close the window with no changes.

Note:	*To keep an estimate "in the black" without revising it, click* ✔ **Select the Estimate**, *do not change the selected estimate, and click* Select. *The estimate date will not change. But the date on the search screen will change to indicate the date the estimate was last selected.*

Split Estimate



Estimate Information			
UPC	15988	District	Richmond
Author	John Doe	Date	10/20/2006 5:22:49 PM
Estimate Type	Final Submission	Version	2.40

Estimate Splits				
	Estimates			
PCN	PE	RW	CN	Total
B603	0	0	0	
C501	$0	$0	$0	
P101	$0	$0	$0	
P102	$0	$0	$0	
R201	$0	$0	$0	
Project Total (15988)	$1,556,993	$685,300	$3,778,523	$6,020,816
Jobs Total	$0	$0	$0	
Balance	$1,556,993	$685,300	$3,778,523	$6,020,816

Apply

Figure 27: Split an Estimate 1.

Select the Estimate Type:

Pre-Scoping	PH
Scoping	Final Submission
PFI	

2. Enter the appropriate information, and click Apply.

PCES Estimates List

Note:	*A check mark ✔ to the left of an estimate indicates it has been selected as the "Recommended" Estimate.*

	Type	Date	Author	Version	PE	RW	CN	Total
	Pre-Scoping							
	Scoping							
	PFI							
	PH							
	FI							
	RW							
	Final Submission							
	Financial Plan	7/31/2006	Avery McClellan		$1,770,430	$0	$44,021,766	$45,792,196
✔	Award	11/29/2005	Chris Blevins	AWARD	$1,770,430	$0	$43,267,750	$45,038,180
	Expenditures	12/8/2006		FMS	$1,770,430	$0	$44,248,234	$46,018,664

The type of estimate selected is defined by the concurrent engineering process.

Figure 28: Project Estimates – Estimates: PCES Estimates List

Type .....Type of estimate
Date .....Date estimate was uploaded into the system
Author .....Name the individual uploading the estimate
PE .....A dollar amount representing the Preliminary Engineering amount needed for the project.
Version .....PCES version or system previous to PCES
RW .....A dollar amount representing the Right of Way amount needed to complete the project.
CN .....A dollar amount representing the Construction amount needed to complete the project.
Total .....A dollar amount representing the total PE, RW and CN amounts needed to complete the project.

Edit an Estimate

You may edit an estimate by clicking on the Edit. A form is displayed similar to the one below that enables the user to edit relevant information.

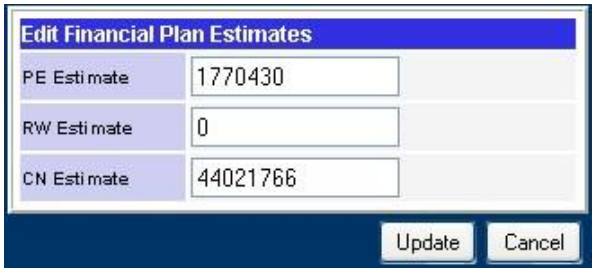


Figure 29: Edit Estimate

Click Update to save changes, or Cancel to cancel and close the window.

Preconstruction Estimates (Numbers in this section will not reflect Preconstruction after the estimate is transferred to the Construction control group)

TRNS*PORT Estimates	
Date	
Constr. Total	$0
Constr. Contingency	$0
Bridge Total	$0
Bridge Contingency	$0
CEI Road	$0
CEI Bridge	$0
Total	**$0**

Figure 30: Preconstruction Estimates

Date ..... date Preconstruction "prime" project identification is reported to the Datawarehouse for this UPC. Date changes each and every time any values change.

Const. Total ..... Construction Total – total L&D construction contract estimate for all Preconstruction PCNs in prime excluding bridges. Includes total value of all line items.

Const. Contingency ... Construction Contingency – usually 10% of the Const. Total

Bridge Total ..... Total L&D contract estimate for only Preconstruction bridge PCNs in prime.

Bridge Contingency .. Usually 10% of the Bridge Total

CEI Road ..... An estimate of VDOT's internal construction engineering costs during construction for all Preconstruction PCNs in prime with the exclusion of bridges

CEI Bridge ..... An estimate of VDOT's internal construction engineering costs during construction for all Preconstruction bridge PCNs in prime.

Contract Requirements Whatever amount is entered into Preconstruction as item 25885
Not in production yet

State Police Amount in Preconstruction for this item. Not in production yet

Railroad Amount in Preconstruction for this item. Not in production yet

State Forces Amount in Preconstruction for this item. Not in production yet

Total ..... All Construction costs (Bridge and other), Contingency (Bridge and other), and CEI (Bridge and Other)

Note:	*Preconstruction estimates reflect changes input before the close of business on the previous day.*

Pending Approval

Pending Approval is used by localities to upload estimates for VDOT review and approval

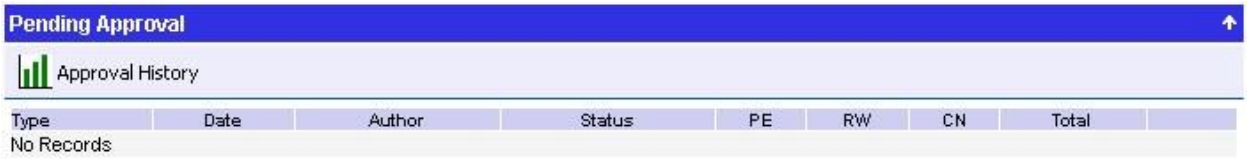


Figure 31: Pending Approval

Figure 32: Locality Estimate Upload Status window

1. After uploading an estimate, the user will encounter the following status window asking the user whether to **Recommend this Estimate**, **Upload Supporting Docs,** and finally **Finish**. If the upload was successful the Result should display "Success".

Estimate Supporting Documents

This is a repository of documents, quotations, independent estimates, notes, etc. to support estimates

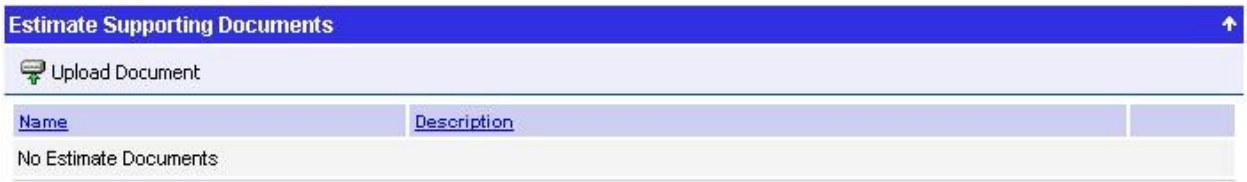


Figure 33: Estimate Supporting Documents

1. Click Upload Document, an upload form similar to the one below opens

Figure 34: Document Upload

2. Click Browse..., navigate to the location of the appropriate document, and select it.
3. Select the appropriate Category:

Asset Management	Local Assistance	Structure & Bridge
Construction	Location & Design	Survey
Correspondence	Materials	System Operations
Environmental	Operations Management	TBA
Estimate Supporting Document	Programming	Traffic Engineering
General	Public Hearings	Transportation & Mobility Planning
Hydraulics	Residency Office	Utilities
Image	Right of Way	Video
L&D TE Design	Scheduling & Contract	

4. Select the appropriate Phase:

iSYP	Field Inspection
Scoping	Pre-Advertisement Conference
Preliminary Field Inspection	Construction Engineering
Public Hearing or Involvement	

5. Select the appropriate Status:

Completed
New
Revised

6. Click Cancel to upload the document or Cancel to cancel and close the window.

PD-1

The PD-1 Process should work like the following:

1. An estimate is uploaded into PCES.
2. The estimate is ‘selected’
3. The system automatically approves the change.
4. If the estimate change is under $50,000 or 10% threshold plus or minus then no three step process is required.

5. If the estimate is over the $50,000 or 10% threshold then POOL requires a three step process on why the funding is needed, what UPC the funding is coming from, and if the CTB needs notifying.

6. Once the PD-1 is generated, submitted and approved, the recommended estimate becomes the approved estimate.

If for any reason the PD-1 is not generated because it was blocked (or if there was a bug) or if the PD-1 is never submitted, or if it is deleted before being submitted, the new estimate is allowed to be selected, but it is not approved.

The key event in PCES is the selection of the estimate, whether it is a new estimate or an existing estimate. That is what is supposed to drive the PD-1 generation. If it is not happening, or happening intermittently, then there may be a problem.

PD-1 section contains Status List and PD-1 detail information.

Status	Request Date	Requested By	
Rejected	12-05-2006	Steven.McNeely	
New	12-18-2006	Franklin.Shue	

Figure 35: PD-1 Status List

To view a printable version of the PD-1, click on on the right side of screen.

Note:	*The PD-1 area, when expanded, automatically includes the Project Manager's "Selected" or "Recommended" Estimate. If the Project Manager's Recommended Estimate has triggered a PD-1 in the Pool, the status of the PD-1 will be listed. If a PD-1 or other revision request is pending approval in the Pool, no changes can be made to the Recommended Estimate until the PD-1 or other revision request is approved or rejected.*

Recommended vs. Approved Estimates					Difference
	Expenditures (FMS)	Budget Estimate (SYIP)	Approved Estimate (PPMS-E)	Recommended Estimate (Scoping)	Estimate Increase/Decrease
Date	3/17/2004	7/1/2006	10/20/2004	5/4/2006	
PE	$29,656	$254,000	$254,000	$254,000 *(MANUAL)*	$0
RW	$0	$0	$0	$0 *(MANUAL)*	$0
CN	$0	$3,500,000	$3,500,000	$3,500,000 *(MANUAL)*	$0
Total	**$29,656**	**$3,754,000**	**$3,754,000**	**$3,754,000**	**$0**

Figure 36: PD-1 Detail

Fundings and Authorizations

Fundings and Authorizations

Fund Source	previous	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	TOTAL
Interstate	$1,309,000	$0	$0	$0	$0	$0	$0	$1,309,000

	PE	RW	CN	TOTAL
Authorized	$564,000	$0	$0	$564,000
% of Authorized Expended	5.26%	0.00%	0.00%	5.26%

Figure 37: Fundings and Authorizations

Project Award

Once a project is awarded and entered into Site Manager it is the responsibility of the Project Manager or Area Construction Engineer to enter the Award date and Award amount in POOL. This process will initiate the E or edit button in PCES. The PM or ACE will choose manual next to CN and enter the actual Award amount. Choose submit and this becomes the estimate of record. The estimate can then be updated in the same manner while the project is under construction. Work orders and any other estimate changes must be entered here until the project is closed out.

Project Award

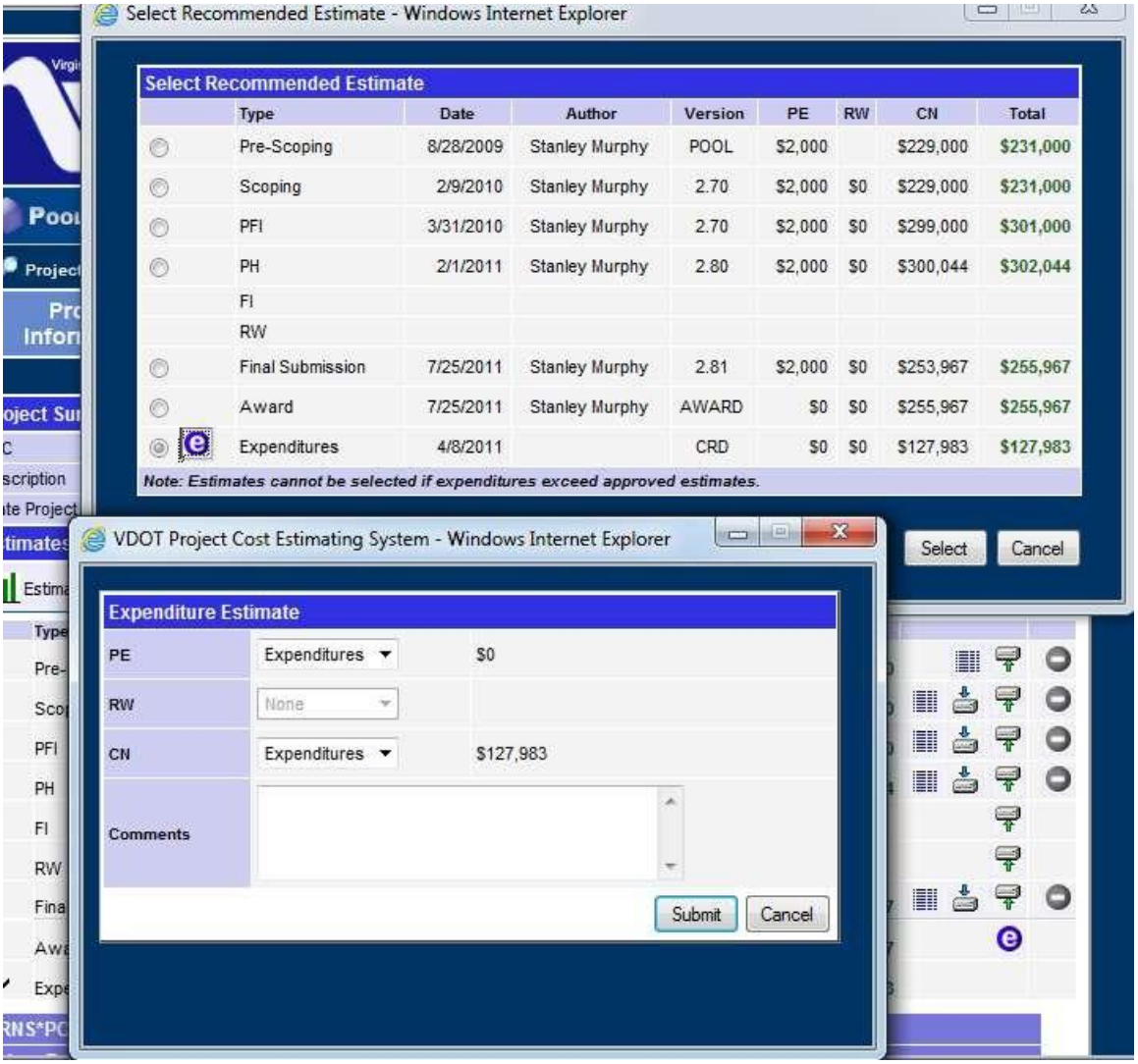
Project Closeout

The final stage of a PCES estimate is project closeout. Once a project has reached an end where there are no more charges anticipated, the ACE or PM must select the estimate and choose Expenditures.

Since the project is completed and "Expenditures" is the recommended estimate, please select expenditures using this process included in the "Project Closeout" section on page 31 of the PCES User Manual:

1. Find the project in PCES; click "Select Estimate."
2. To select Expenditures as the Recommended Estimate, on the Expenditures line, select the "E" button.
3. A new window should open and then from the dropdown select Expenditures for the phase(s) you are updating. Include any documentation in the Comment block and click "Submit." 4. Then click "Select." Be sure the check mark is beside Expenditures.

Also, don't forget to check the project in Cardinal to be sure it's closed to charges. If it is still open, contact CO Programming Openings and Closings.



Project Closeout (Expenditures)

For more information pertaining to the Project Closeout process, here is the link to the Project Closeout Manual.

https://insidevdot.cov.virginia.gov/div/km/COP/PC/Financial%20Management%20of%20Projects%20Documents/PCPv7.pdf

PCES Worksheets

Objective

The purpose of the Project Cost Estimating System or PCES is to collect data for a specific project and, based on the data entered; determine a budget for that project. This budget is to be used for the Six Year Plan (SYP) until a detailed estimate can be generated using actual project quantities and unit prices. PCES is a budgeting tool not a detailed project estimate! The data entered needs to be based on a good project scoping. Think of PCES as a budget placeholder until such time a detailed estimate can be created. The following information about the individual worksheets is based on PCES version 7.1.

Project Budgeting Considerations

Persons assigned to manage projects are responsible for maintaining the project budgets for those projects. Project estimates should be reviewed and updated every 90 days or at every project milestone, whichever is less. It will be the project manager's discretion, based on input from other divisions, when Preconstruction should be the selected estimate with the exception of the Final Submission stage. Final Submission estimates should use Preconstruction as the source for the construction estimate. Before selecting Preconstruction, make sure all portions of the estimate have been included (i.e. bridge, drainage, traffic, etc. for Preconstruction and right of way and utilities). Once Preconstruction is selected, it will override the data in PCES.

PCES Contacts

The Construction Division has been assigned the responsibility of maintaining and updating PCES. Anyone having comments/questions about PCES can contact Corey Bourne at (804) 7862538.

Summary Worksheet

The purpose of the Summary worksheet is to summarize the costs of each phase of the project (construction, right of way & utilities, and preliminary engineering). In addition, it provides the reviewer with other essential information such as District, Project number, UPC number, and project manager. These fields are automatically populated from other systems and cannot be changed. The Estimate Year is automatically populated but the AD year and Construction End Year can be changed. These "Years" are based on the State Fiscal Year. If the project has an advertisement date of March 2014, the fiscal year is FY2015. If the project has an advertisement date of October 2014, the fiscal year is FY2015. Inflation is added to the AD year as well as the Construction End year. Construction End year inflation is calculated when a project is under construction for more than two years.

Note:	*It is recommended the advertisement year is not to be changed and uploaded onto the website until a schedule change is approved*

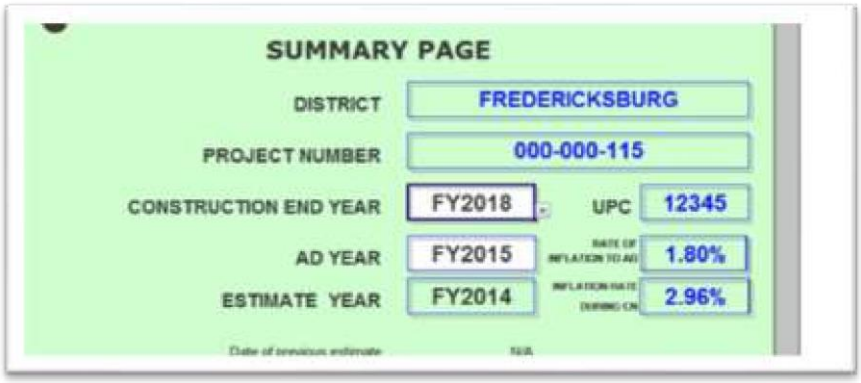
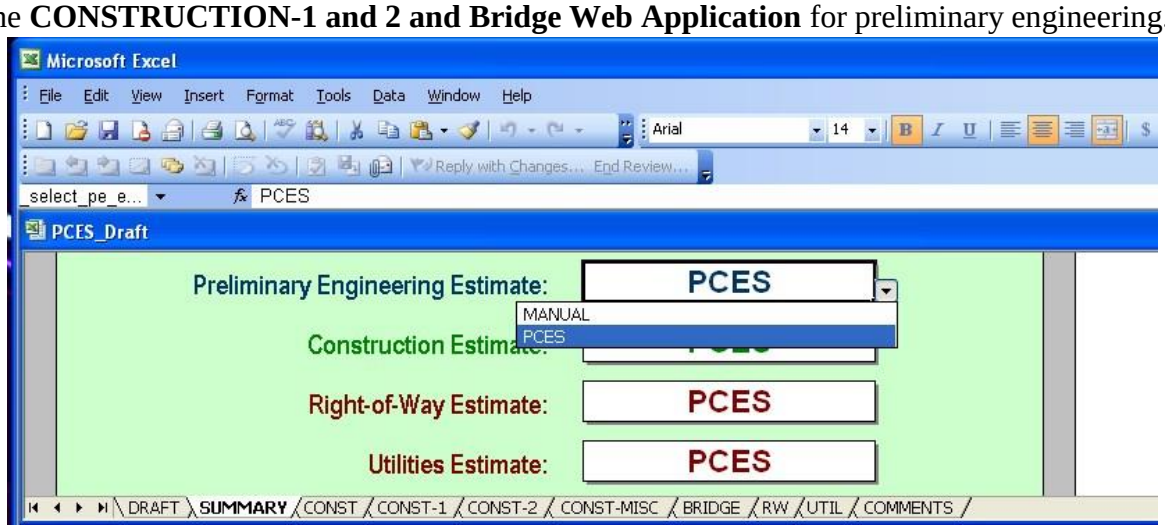


Figure 38: Summary Worksheet - Summary Tab

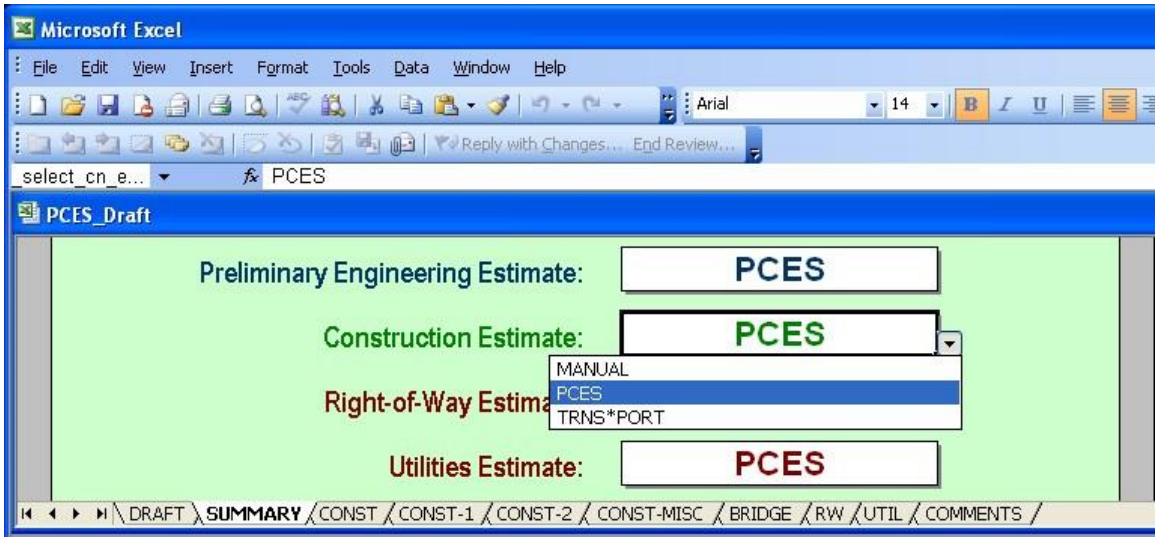
There are four estimate fields on the summary sheet - preliminary engineering, construction, right of way, and utilities. The project manager can select the appropriate estimate source to use for each field.

The preliminary engineering field has two data sources to select from, **MANUAL** which will collect the data from the Manual worksheet in PCES, and **PCES** which will use the data created in the **CONSTRUCTION-1 and 2 and Bridge Web Application** for preliminary engineering.

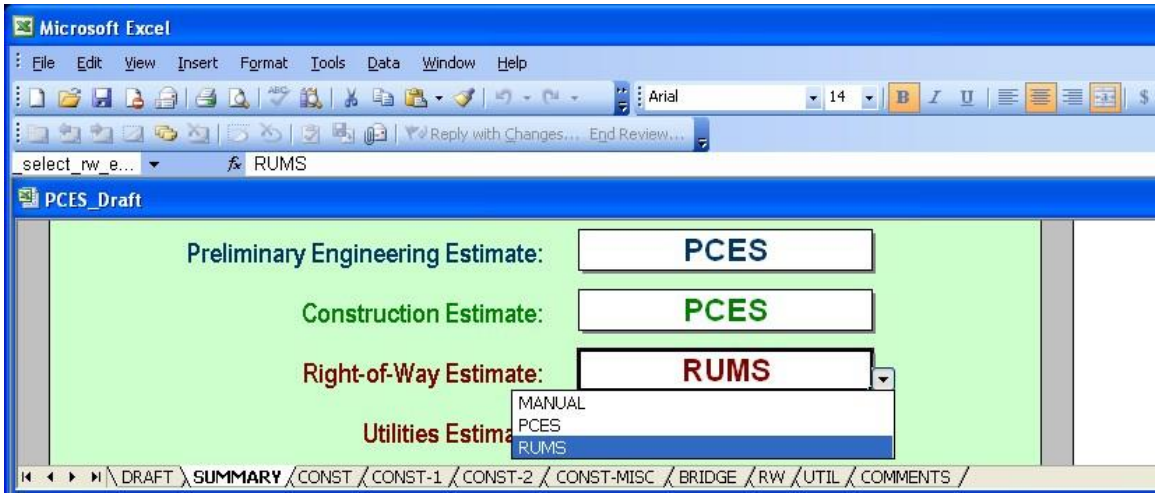


The construction field has three data sources in which to choose estimates - **Manual**, **PCES**, and **TRNS*PORT**.

Manual will collect the data from the Manual worksheet in PCES. If **PCES** is selected it will use the data entered in the **CONSTRUCTION-1 and 2 worksheet** and **Bridge Web Application** in PCES. When **Preconstruction** is the selected source, PCES will compute the construction estimate based on the total of the bid items plus the contingency in Preconstruction (usually 10%). The Construction Engineering estimate (CEI) will come in from your Preconstruction estimate. This can be a % of Construction or a Lump Sum.

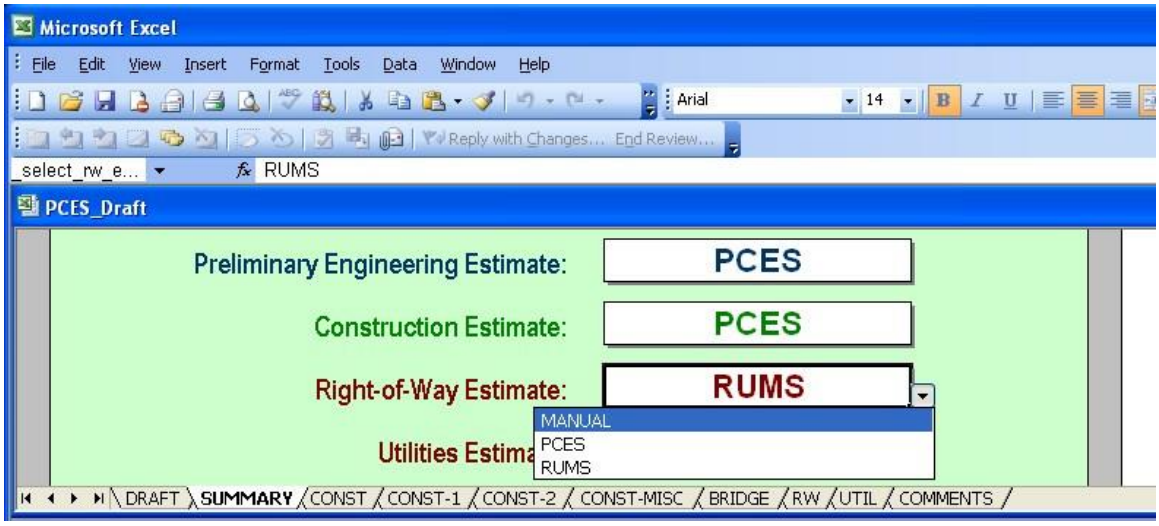


The Right of Way estimate is selected from three data sources; *PCES*, *Manual* and *RUMS*. **PCES** data source gathers data entered into the Right of Way PCES workbook. **Manual** will collect the data from the Manual worksheet on PCES. The last source, **RUMS**, gathers data from the RUMS program.



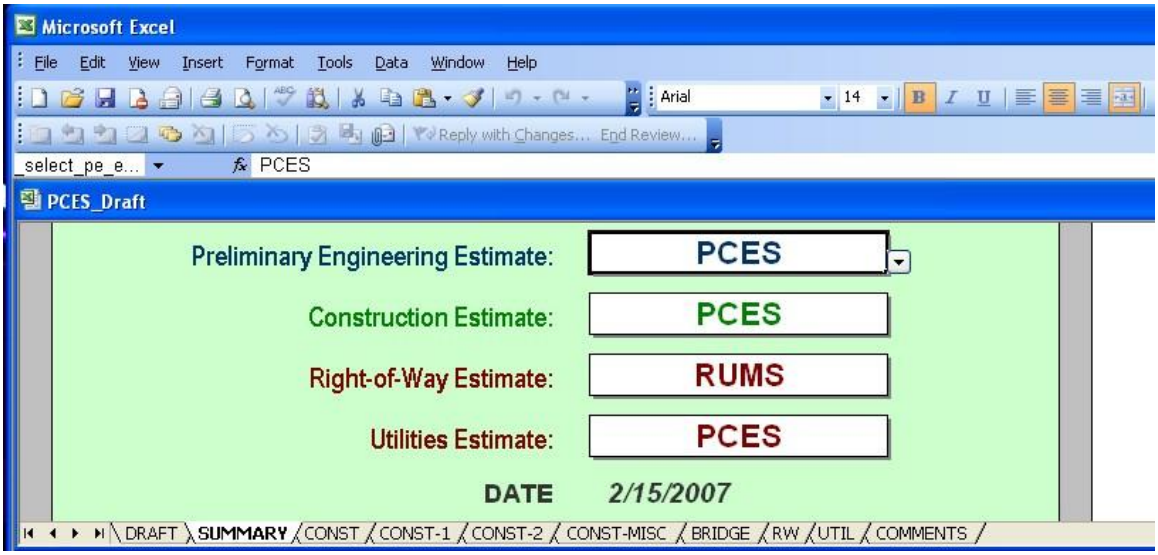
Note:	*When using Preconstruction or RUMS as the estimate source, please allow 24 – 48 hours for this information to be backed up by the Data Warehouse.*

The Utilities estimate is selected from three data sources; *PCES*, *Manual* and *RUMS*. **PCES** data source gathers data entered into the latest PCES workbook. **Manual** will collect the data from the Manual worksheet on PCES. The last source, **RUMS**, gathers data from the RUMS program.

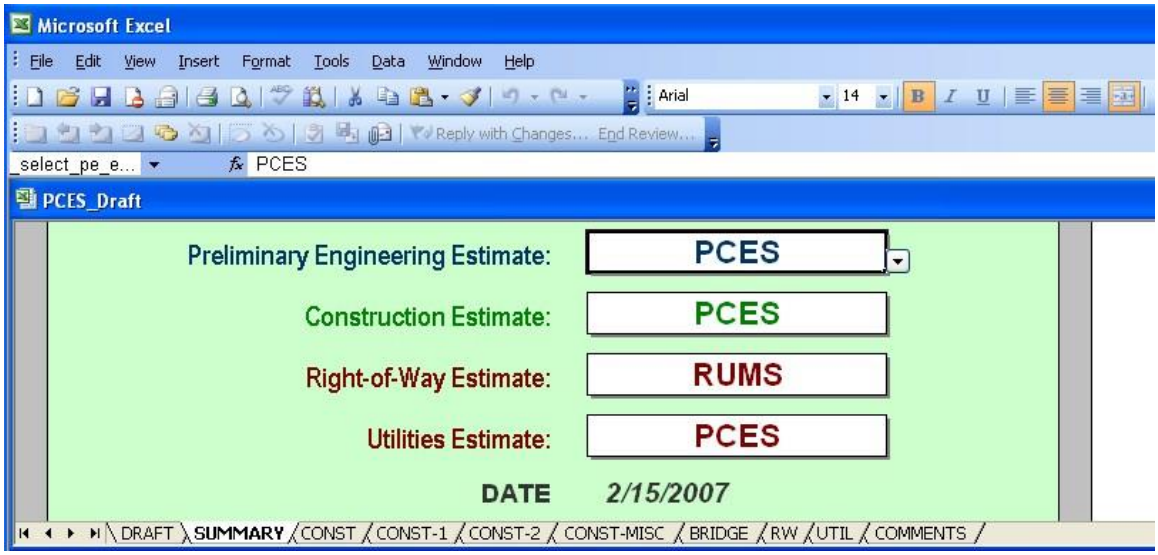


Note:	*When using Preconstruction or RUMS as the estimate source, please allow 24 – 48 hours for this information to be backed up by the Data Warehouse.*

The date shown under the data source blocks is the current date, not the date in which the estimate data was entered and uploaded. The actual date of the estimate upload can be found on either the PCES website or in the project data history window.



The estimate values at the bottom of the summary sheet are determined by the source from which the data is collected and multiplied by a set inflation factor to the anticipated advertisement date for the construction and acquisition date for Right of Way and Utilities. These individual estimates are tallied to determine the project estimate. (See the breakdown in the Const. tab) The advertisement date can be selected on the Summary Worksheet.

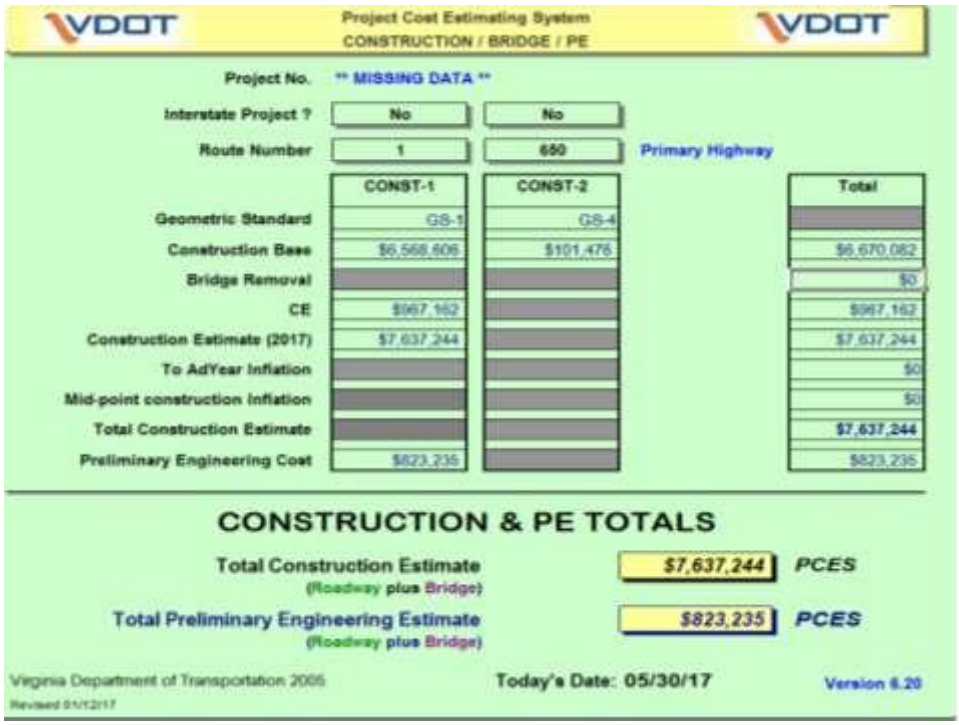


Note:	*When using Preconstruction or RUMS as the estimate source, please allow 24 – 48 hours for this information to be backed up by the Data Warehouse.*

Construction Worksheet

This worksheet summarizes all cost information from the **Constr.1**, **Constr.2**, and **Misc. Constr.** worksheets. Its table format is self-explanatory.

At the bottom of this sheet the total Construction Estimate and Total Preliminary Engineering Estimate are summarized. These are the same numbers that are reported on the Summary Worksheet.



Constr.1, Constr.2, and Misc. Constr. Worksheet

The purpose of the construction worksheet is to collect data about the project to determine the road construction estimate. Some data fields are automatically populated based on data PCES has collected from other systems such as iPM, iSYP, or Project Pool while other fields need data entered by the project manager/designer. A brief explanation of each field is provided below.

Project / UPC

Automatically populated from other sources.

Interstate Project

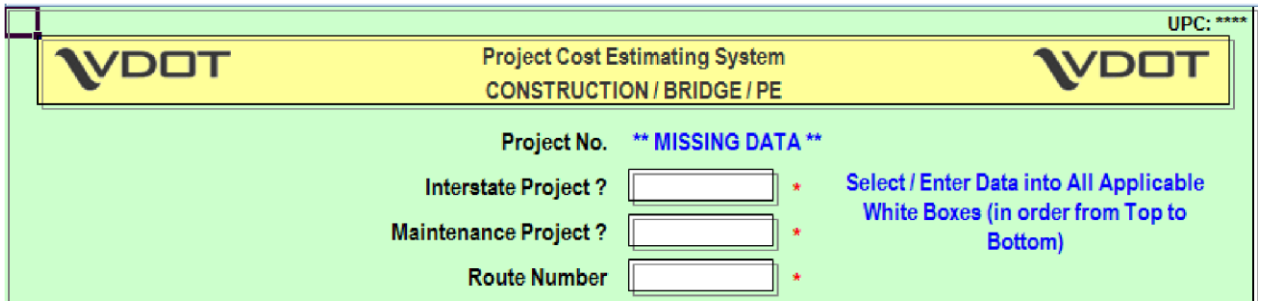
Project Manager must select yes or no. This cell may be yes even if the roadway will not carry an Interstate designation. If physical features of construction mimic Interstate design standards (i.e. limited access grade separated interchanges etc.) the interstate standard should be selected.

Maintenance Project

Maintenance Project is selected when a project such as emergency contract is entered into PCES but is only in the system for a short period of time. Selecting Maintenance removes any estimate year inflation on that project.

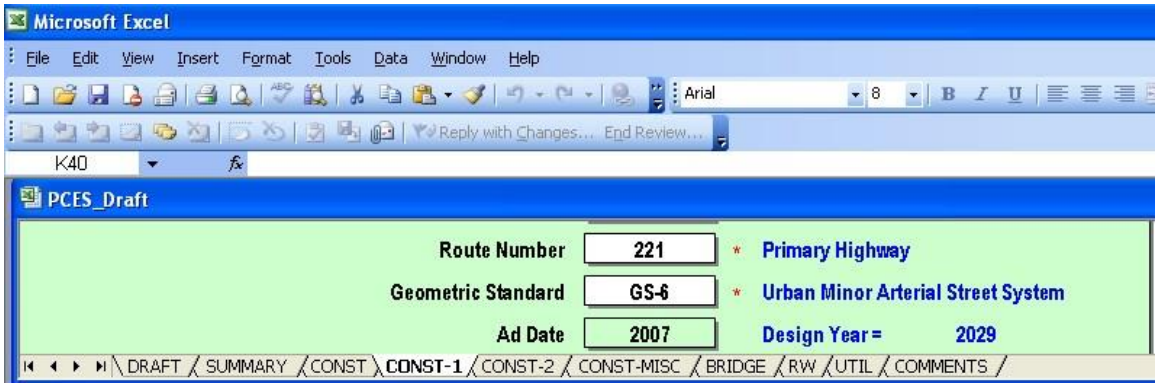
Route Number

Project Manager must populate the fields.



Geometric Standard

Uses the roadway geometric standard selected to; determine the lane mile cost of the project. Consists of the nine geometric standards (Interstate, GS-1 to GS-8) found in the Road Design Manual. This block has a drop-down menu to allow the project manager/designer to select the appropriate Geometric Standard for the project.

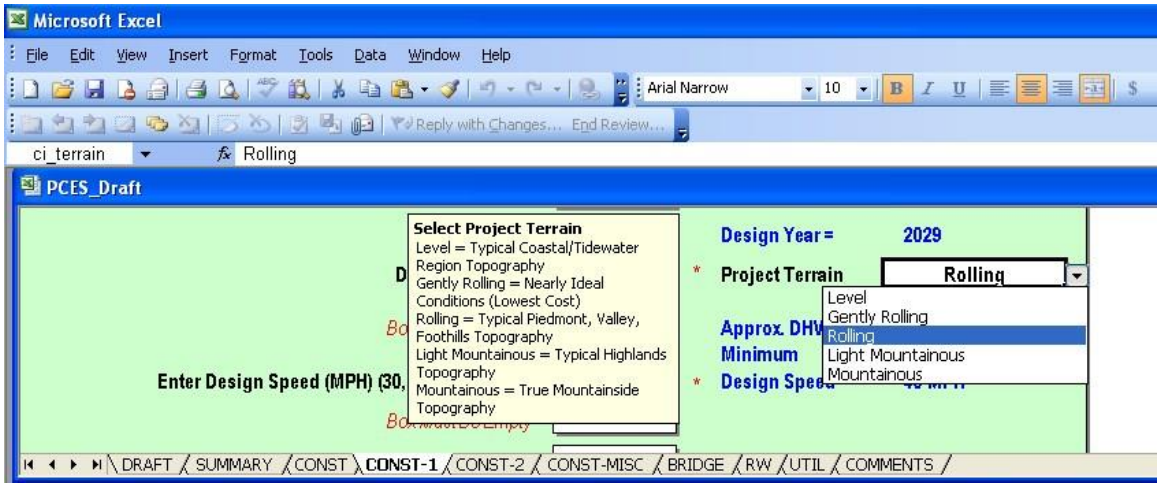


Ad Date

This will automatically populated from the FY advertisement year shown on the PCES Summary worksheet. It is used to determine the inflation for the project. The ad date shown is the Fiscal Year the project will go to advertisement. For projects with unscheduled construction, the Project Manager should select an advertisement year based on funding and other applicable constraints. This Ad Date will be used to determine the number years to inflate the construction estimate.

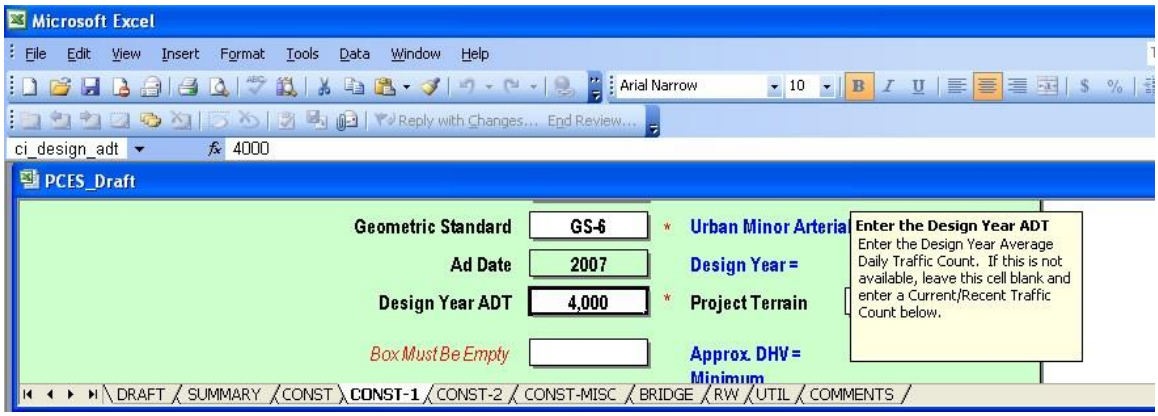
Project Terrain

This feature allows the project manager/designer to select the appropriate terrain for the project through a drop-down menu. In addition to the standard level (flat), rolling, light mountainous and mountainous terrain options found in the Road Design Manual, this feature includes gently rolling and light mountainous. Rolling terrain is the base cost factor and will automatically default to this if no terrain is selected.



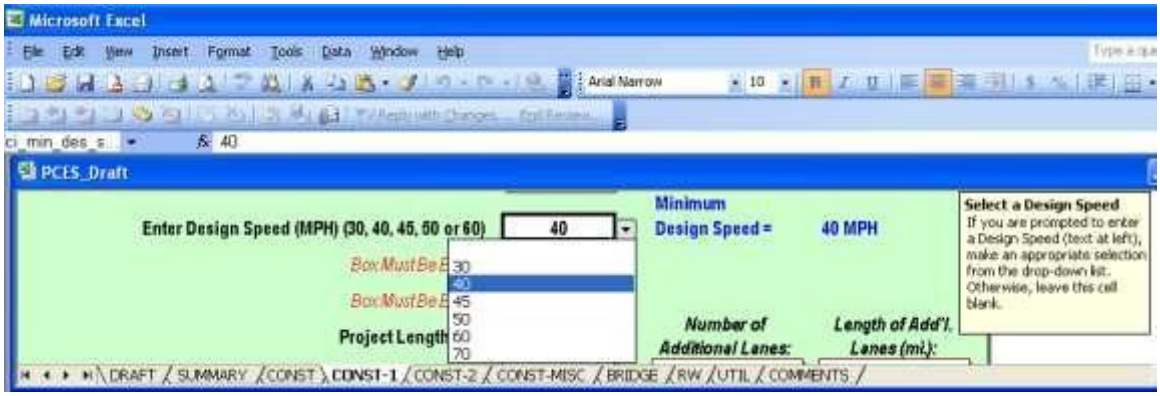
Design Year ADT or Current (Recent) ADT

If no design year ADT is available, the project manager/designer can manually enter current ADT for the project. Data entered into either of these fields will determine the defaults for design speed and lane width.



Enter Design Speed (MPH)

If the designated speed computed from the ADT's is not correct, the project manager/designer can select the appropriate design speed from the drop-down menu.

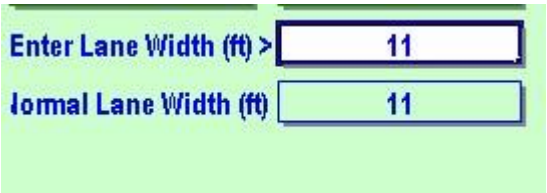


Normal Lane Width

This field is determined by the geometric standard and design speed selected.

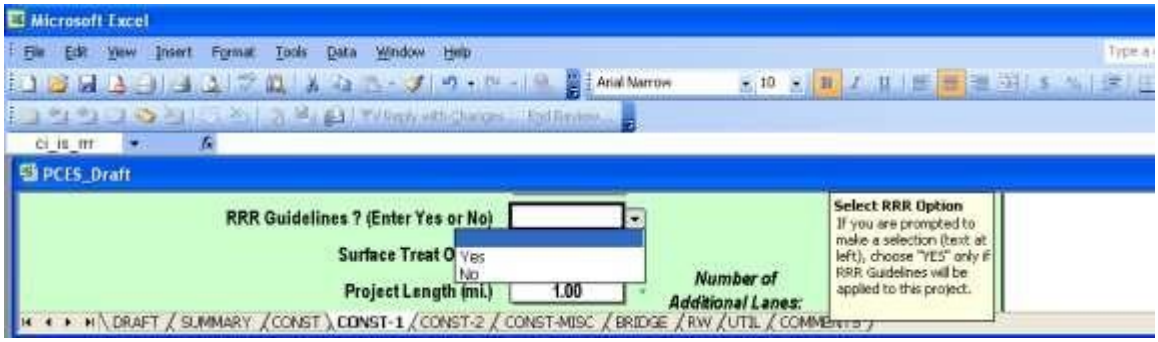
Enter Lane Width

This allows Project Managers to override the lane width associated with the Geometric Standard, ADT, and Design Speed.



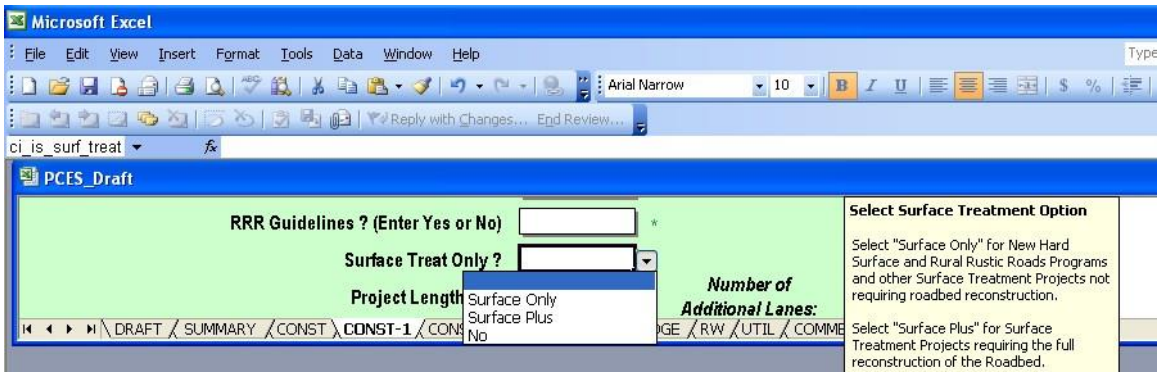
RRR Guidelines (Enter Yes or No)

In this field, project manager/designer is to select **Yes** or **No** from the drop-down menu. When **Yes** is selected a different cost factor is associated with the project. This feature only works with geometric standards GS-3, GS-4, GS-7, and GS-8.



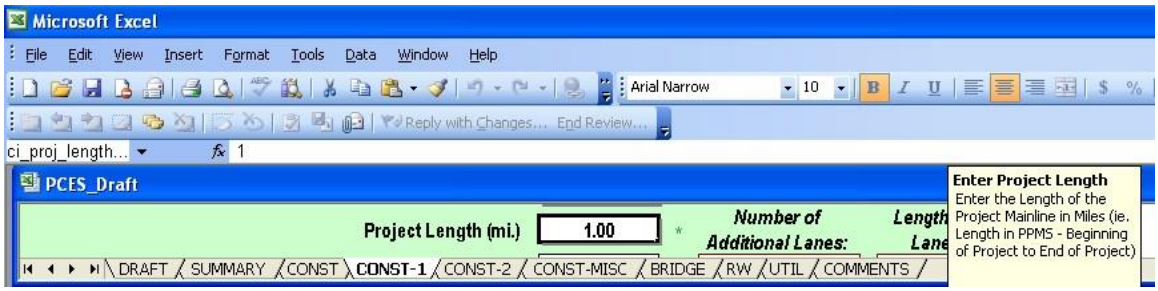
Select Surface Treatment Options

This block will prompt the project manager/designer for type of roadway surface. If **Surface Only** is selected this is considering no or minimal roadbed construction is needed and is the appropriate selection for projects that fall into the Rural Rustic Roads category. **Surface Plus** is for projects requiring full depth pavement construction. Selecting **Surface Only** or **Surface Plus** takes into account minimal grading for the project (grading of shoulders and ditches).



Project Length (mi.)

The project manager/designer is to enter the length of the project in miles. This length is typically associated with the project length found on the title sheet.

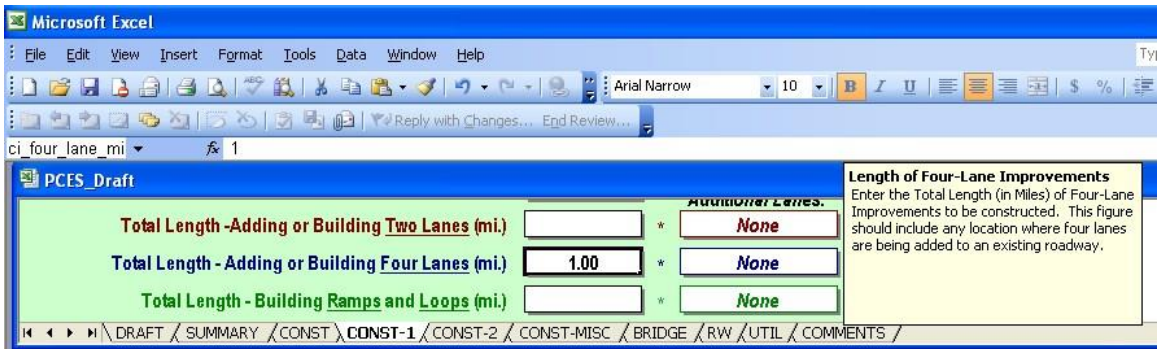


Total Length – Adding or Building Two Lanes (mi.)

This field is for the project manager/designer to enter the length, in miles, of two-lane roadway to be constructed. For example, if a project has a section in the middle of the project that will be overlaid, this section should not be included in the length but the cost for the overlay area should be entered on the **Misc. Const.** field.

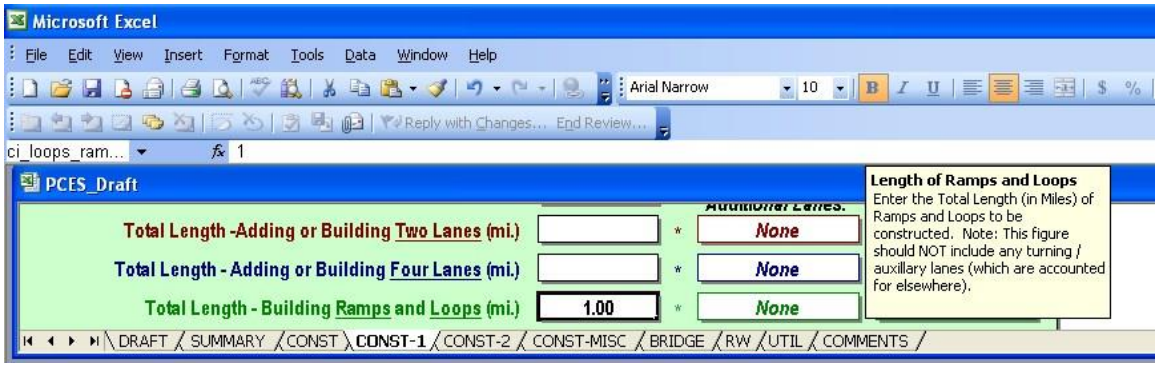
Total Length – Adding or Building Four Lanes (mi.)

This field is for the project manager/designer to enter the length, in miles, of four-lane roadway to be constructed. For example, if a project has a section in the middle of the project that will be overlaid, this section should not be included in the length but the cost for the overlay area should be entered on the **Misc. Const.** field.



Total Length – Adding or Building Ramps and Loops (mi.)

This field is for the project manager/designer to enter the length, in miles, of ramps and loops to be constructed.



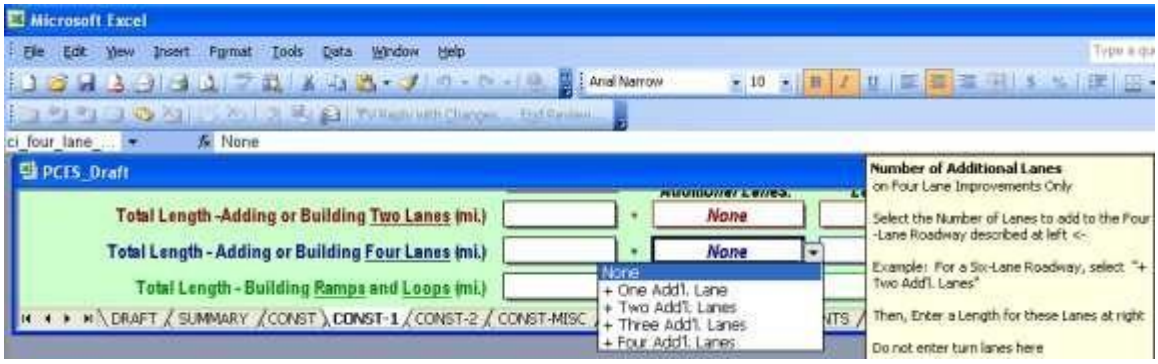
Number of Additional Lanes & Length of Additional Lanes (mi.)

The project manager/designer can enter additional lane information and the length in these fields for the two-lane, four-lane, and ramps & loops. For the two-lane and ramps & loops, the project manager/designer can only select one additional lane. For the four-lane, the project manager/designer can select up to four additional lanes. The length is to be entered in miles. The length of additional lanes is used to multiply by the total number of additional lanes selected. See additional lane illustrations below for two-lane, four-lane and ramps & loops choices.

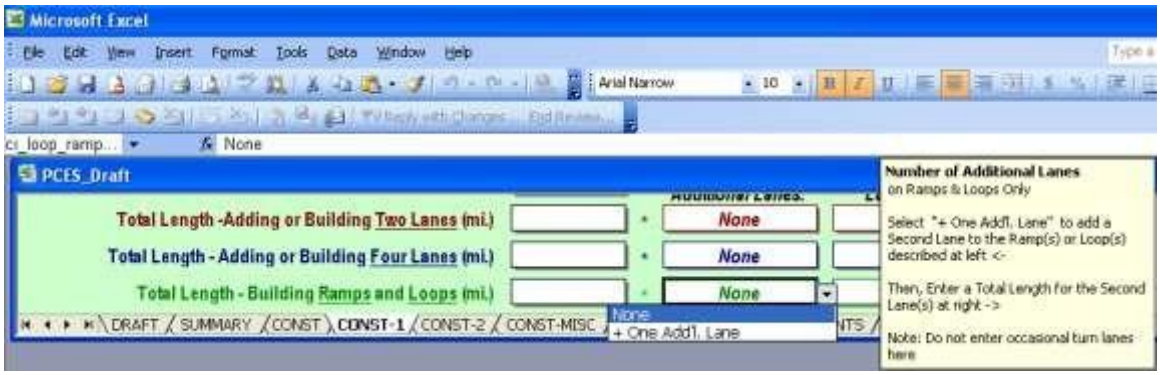
Note:	*The additional lane costs are not adequate for stand-alone projects. These costs are to be used in conjunction with Adding or Building 2 or 4-lanes and ramps & loops.*

Two Lanes – Additional Lanes

Four Lanes – Additional Lanes



Ramps & Loops – Additional Lanes

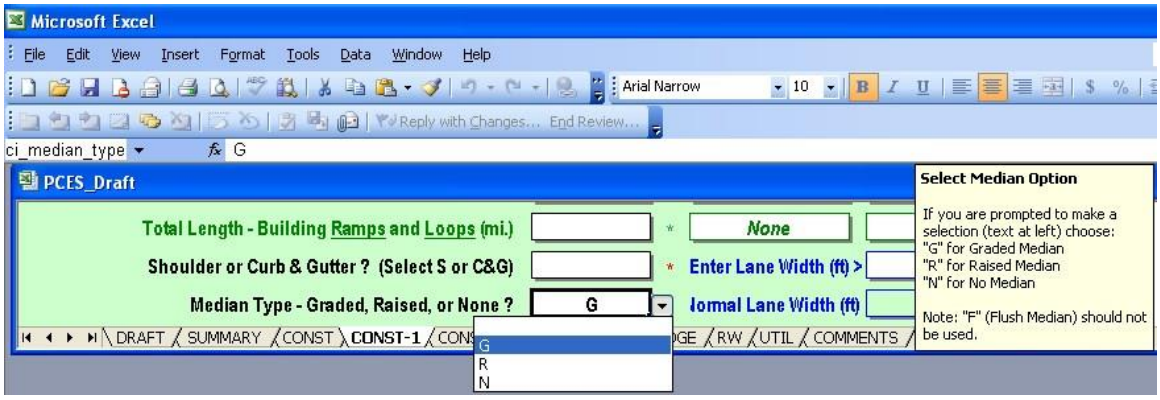


Shoulder or Curb & Gutter (Select C&G)

This feature prompts the project manager/designer to select whether this project is utilizing curb & gutter or shoulder on any of the project. If project is rural but has some curb & gutter, populate the length of curb and gutter in the field below to incorporate this cost into your estimate.

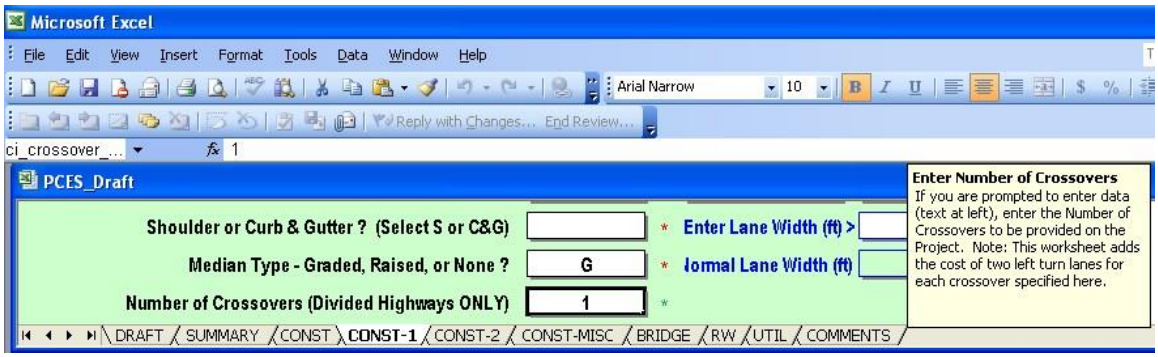
Median Type – Graded, Raised, or None

The project manager/designer should always select the type of median being used for the project. The project manager/designer shall select the appropriate type of median from the pull down menu. Also, when raised median is selected the user should populate for the total length of median.



Number of Crossovers (Divided Highways Only)

This box prompts the project manager/designer for the number of crossovers needed for the project. This cost is averaging the cost of two left turn lanes plus the cost of the crossover. The left turn lanes on a cross-over are not to be included as normal left turn lanes in the workbook.



Length of curb & gutter – Left Plus Right Side (Ft.)

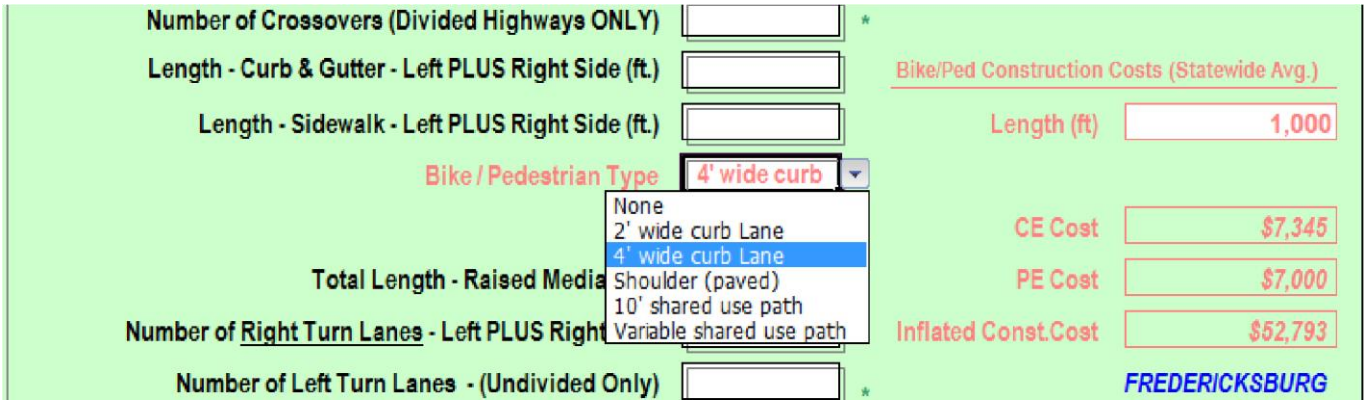
This field should include the total C&G or curbing on both sides of the roadway. Cost for curb & gutter includes average storm sewer system costs and urban design entrances. This length is to be shown in feet.

Length of Sidewalk – Left Plus Right Side (ft.)

This field should include the total length of sidewalk on both sides of the roadway. Cost for sidewalk includes the average cost of concrete for sidewalk and additional excavation for sidewalk benching. This length is to be shown in feet.

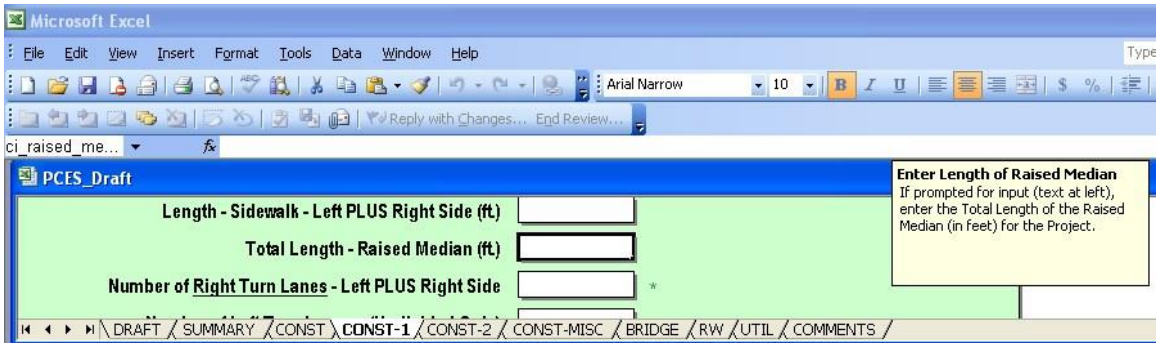
Bike/ Pedestrian Type

Project manager/designer is to enter the type of Bike/ Pedestrian facility on the project. Two and four foot wide curb lanes extend the existing roadway to accommodate these features. Shoulder types use the same material that would be used for a shoulder on the project plus the costs for striping and signing. Shared use paths are typically aggregate base and surface course unless otherwise specified.



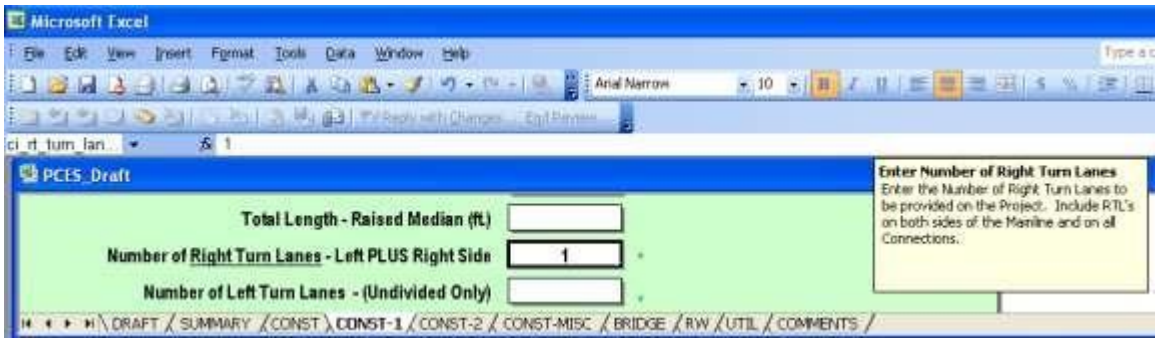
Total Length – Raised Median (ft.)

Project manager/designer is to enter the length of raised median in this field. This length is to be shown in feet.



Number of Right Turn Lanes – Left Plus Right Side

The project manager/designer is to enter the total number of right turn lanes on both sides of the mainline including right turn lanes on connections. Do not include turn lanes associated with crossovers unless the project includes new turn lanes at an existing crossover.



Number of Left Turn Lanes – (Undivided Only)

Project manager/designer is to enter the total number of left turn lanes for <u>undivided</u> roadways only. The cost of this feature takes into consideration the transitions (based on design speed criteria); the necessary taper and storage of the left turn lane and average costs associated with connection reconstruction.

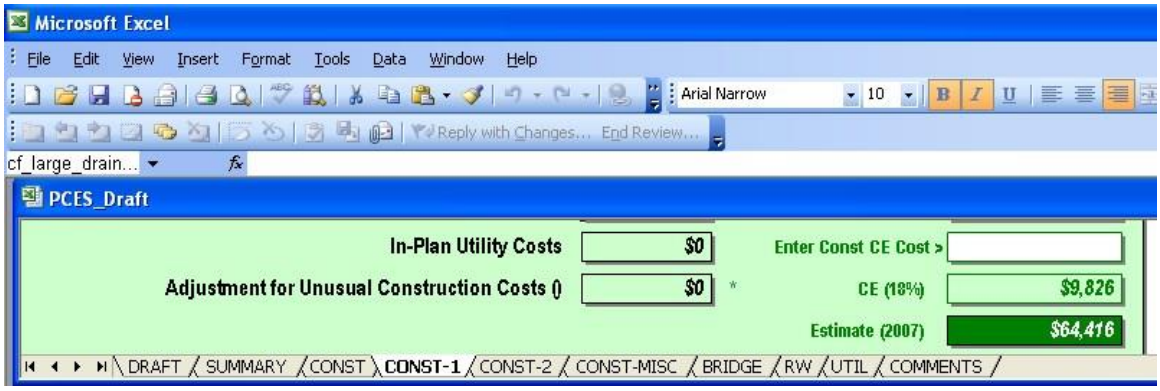
Cost of Large Drainage Structures ($)

This field is to capture the lump sum cost of large drainage structures. The "per mile" cost of roadway has captured the "average" drainage cost. This lump sum cost should include drainage structures in excess of 60-inches in diameter. This includes drainage structures requiring a separate project number (i.e. D-601). These costs should include pay items associated with the drainage structure (i.e. bedding material, minor structure excavation, endwalls, headwalls, etc.). The project manager/designer should communicate with the drainage engineer/designer to collect any additional and unusual drainage costs. Good engineering judgment is to be used in determining if drainage costs should be included in the "per mile" roadway cost or added to the **Large Drainage Structures** lump sum cost. Documentation of large drainage costs should be

addressed on the **Comments** worksheet or uploaded to the PCES website as supporting documentation. (This is captured under the Misc. Const. tab)

In-Plan Utility Costs

In-plan utility costs can be captured and shown on the **Construction** worksheet two ways. The first is to have the utility engineer complete the **Utilities** worksheet in PCES. PCES should be the data source selected on the **Summary** worksheet. The other is to select RUMS on the **Summary** worksheet as the data source if Right of Way estimate has been completed and entered into RUMS.

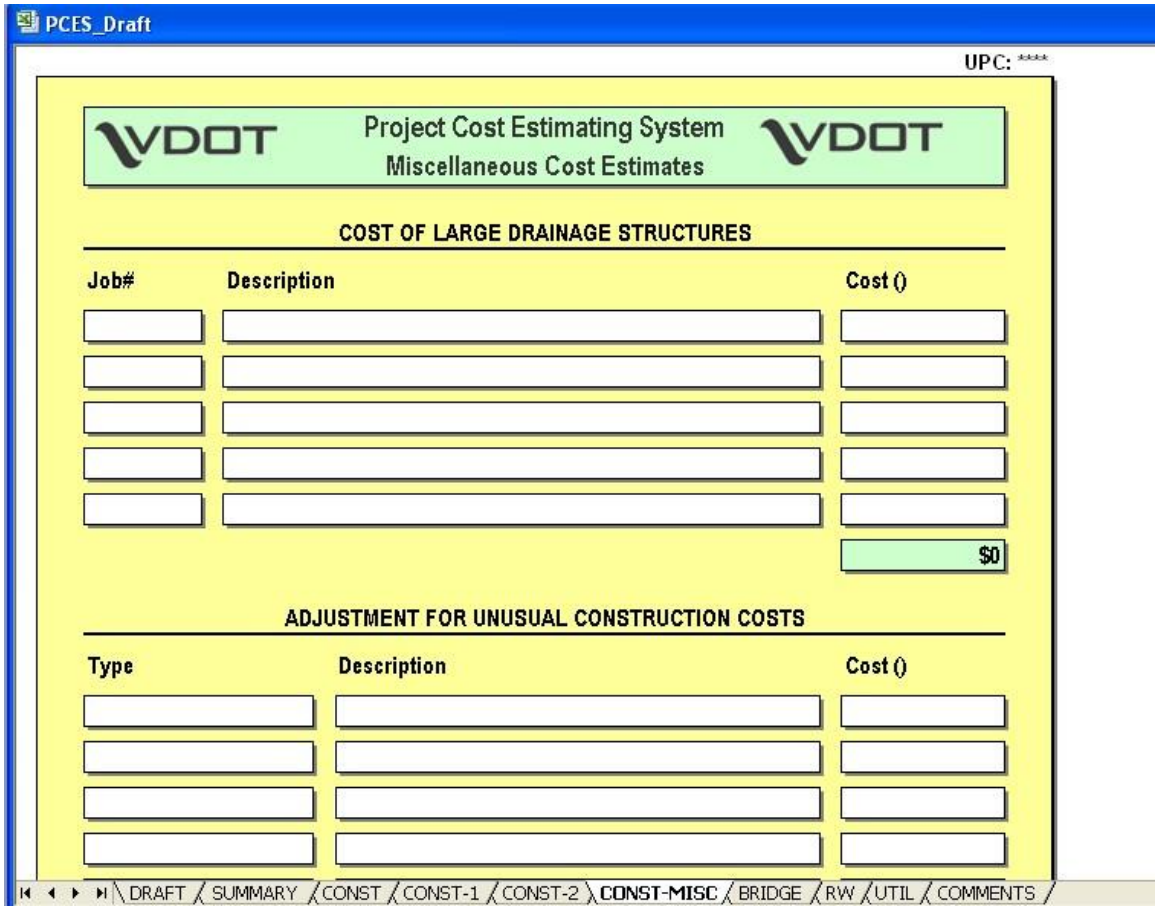


Adjustment for Unusual Construction Costs ($)

The lump sum for unusual construction costs shall include any unusual cost not associated with a typical roadway project. These costs can include but are not limited to landscaping items, bicycle facilities, retaining walls, wetland mitigation sites, excessive excavation costs, high number of entrances, and in-plan utilities cost (if not already included). Documentation of unusual construction costs should be addressed on the **Comments** worksheet or uploaded to the PCES website as supporting documentation.

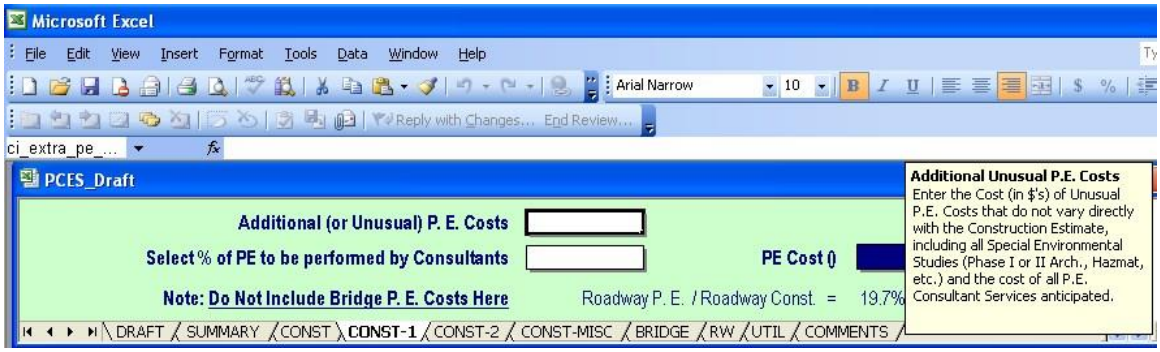
(This is captured under the Misc. Const. tab)

See appendix A page 44 for current (2014) unit cost to use for “unusual construction cost.”



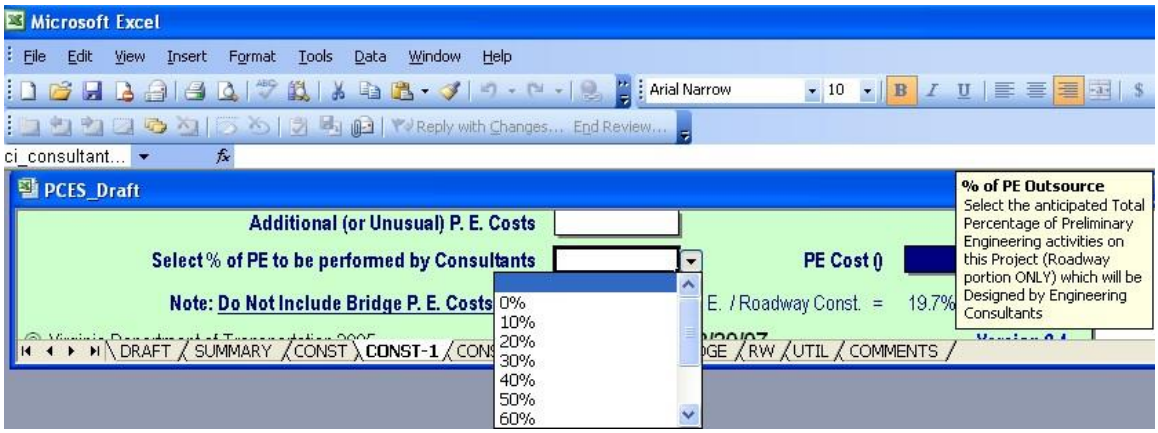
Additional (or Unusual) P.E. Cost ($)

The preliminary engineering cost computed by PCES is based on a percentage of the construction cost associated with the Construction/PE worksheet. Project manager/designer should review this percentage for accuracy and take into consideration P.E. expenditures to-date (FMS II) and any unusual design work needed and will be charged to preliminary engineering. Again, good engineering judgment should be applied and documentation provided on the Comments worksheet or uploaded to the PCES website as supporting documentation.



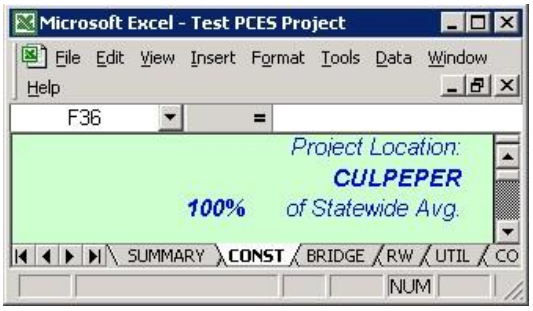
Select % of P.E. to be performed by Consultants

Project manager/designer shall determine the percentage of preliminary engineering to be performed by consultants. Project manager/designer shall survey and collect feedback from all divisions associated with the preliminary engineering of the project and determine the appropriate percentage to apply to the project. The P.E. cost will be increased by 50% over normal in-house design costs. The appropriate percentage can be selected from the drop-down menu.



% of Statewide Average

Cost factor associated with each district in determining the base construction estimate. In PCES FREDERICKSBURG DISTRICT is considered to be the base cost. Other Districts either have greater, lesser or the same cost factor as Fredericksburg.



Base Estimate #1

A total of the roadway construction costs in PCES based on current cost factors. (When Preconstruction is the recommended estimate source the estimate includes line items plus any contingency specified in Preconstruction) but not construction engineering (CE).

Base Estimate #2

Same information as Base #1, as reported on Const.-2 tab.

Note:	*The function of the Const-2 worksheet is exactly the same as the Const-1 worksheet. The purpose of the Const-2 worksheet is to allow a user to estimate*
	two different roadway sections on one project.

"Enter Const. CE Cost"

This field enables a user to specify an amount for CE. This field can be populated when using PCES or Preconstruction as the estimate source. The amount enforced here will over ride any value from PCES or Preconstruction.

CE (%)

This field will show CE cost calculated by PCES or on the CE amount in the Preconstruction estimate when Preconstruction is selected as the estimate source on the summary page of the workbook.

Estimate (Year)

This field will show the estimate in the year the estimate was prepared. The (year) will be the same year as the estimate year as reported on the summary page of the workbook.

Inflation Rate

The number reported in this field will be the compound inflation rate to the advertisement year this will be the same as reported in the summary page of the workbook.

Estimate in Mid FY (year)

This field will report the estimate in the year of advertisement.

Signals, ITS, Signs, and Lighting Cost Worksheet

SIGNALS, ITS, SIGNS and LIGHTING COST WORKSHEET

Stand Alone Traffic Project: No

UPC: ****

SIGNALS Permanent Signals	Location/Description	New/ Mod.	Intersection Type	Major Direction	Major Lanes	Major Direction	Major Lanes	Cross Direction	Cross Lanes	Cross Direction	Cross Lanes	Poles	Detection	Pre-emption	Cost
1	Rte.1/650	New	Tee	North	2	South	2	East	1	West	1	Mast Arm	Loop	Yes	$145,729
2															$0
3															$0
4															$0
5															$0
6															$0
7															$0
8															$0
9															$0
10															$0

	Quantity	Cost
Temporary Signals - New Equipment	1	$55,000
Temporary Signals - Modified Equipment		$0

		Location/Description	Cost
MISCELLANEOUS	1		
SIGNAL WORK	2		

Signals Construction Subtotal $200,729

DRAFT / SUMMARY / CONST / CONST-1 / CONST-2 / CONST-MISC / TRAFFIC / BRIDGE / RW / UTIL / COMMENTS / MANUAL

Users can input multiple locations as well as multiple types of signals with new or modified equipment. The worksheet also has costs for New and Modified Temporary Signals

ITS		Location/Description	Cost
ITS WORK	1		
	2		

ITS Construction Subtotal $0

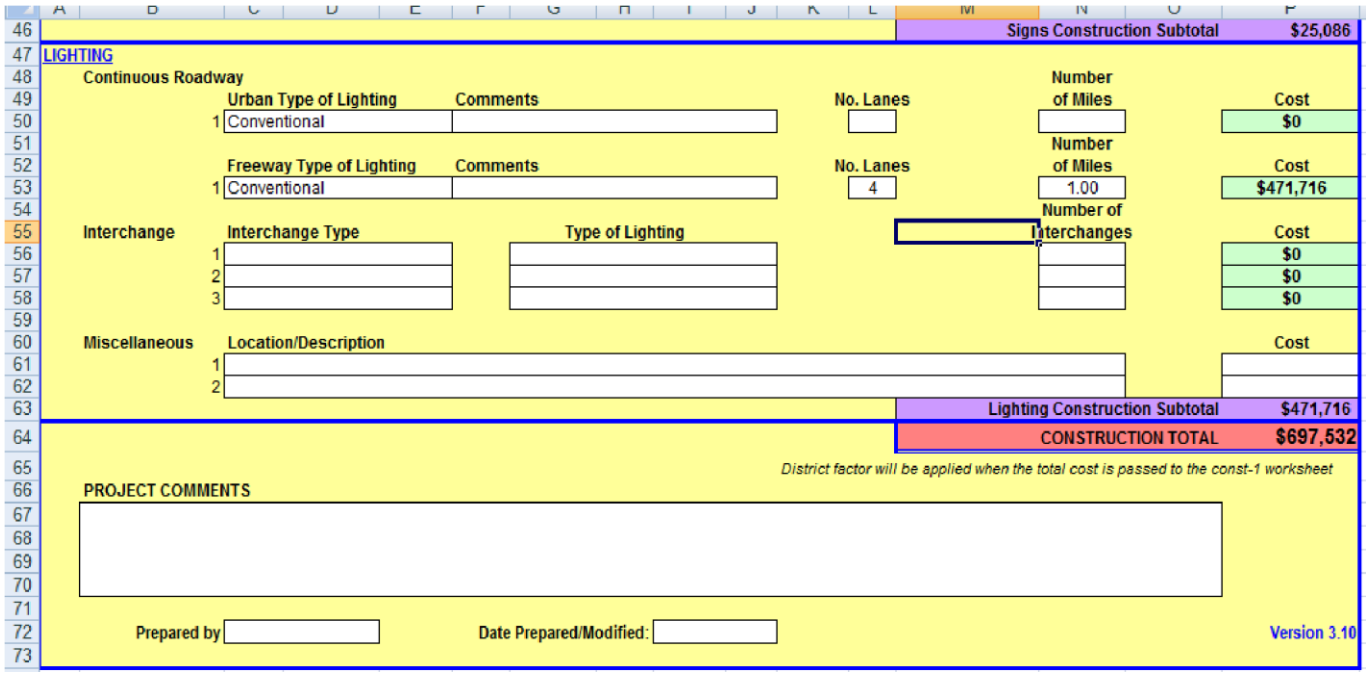
MAJOR SIGN STRUCTURES	Type of Sign	Comment	Quantity	Unit	Lighted Y/N	Included in Roadway Lighting? yes/no	Cost/Sign	Extended Cost
1	Bridge Mount		1	Ea.	Yes		25,086	$25,086
2				Ea.				
3				Ea.				
4				Ea.				
5				Ea.				
6				Ea.				
7				Ea.				

		Location/Description	Cost
MISCELLANEOUS	1		
SIGN WORK	2		

Signs Construction Subtotal $25,086

LIGHTING

Users can enter lump sum cost for ITS. Large signs such as Bridge Mount and Overhead signs are inputted on this screen.



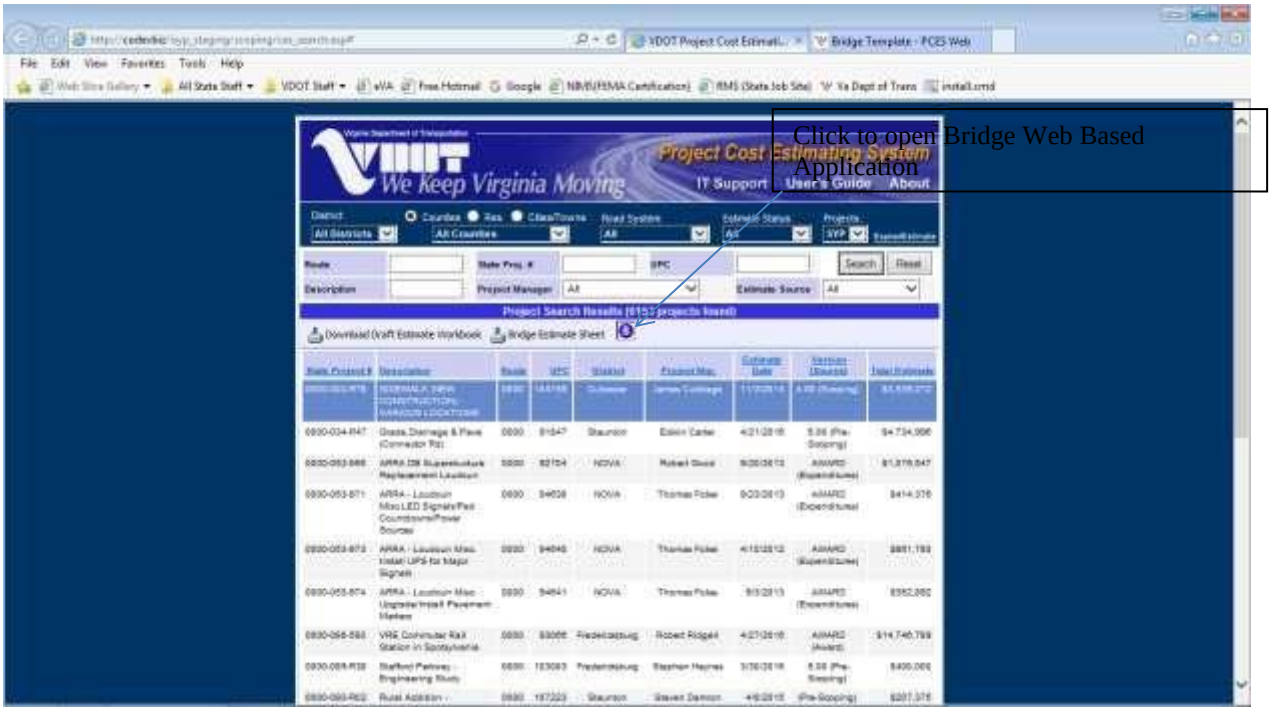
Lighting costs are captured here.

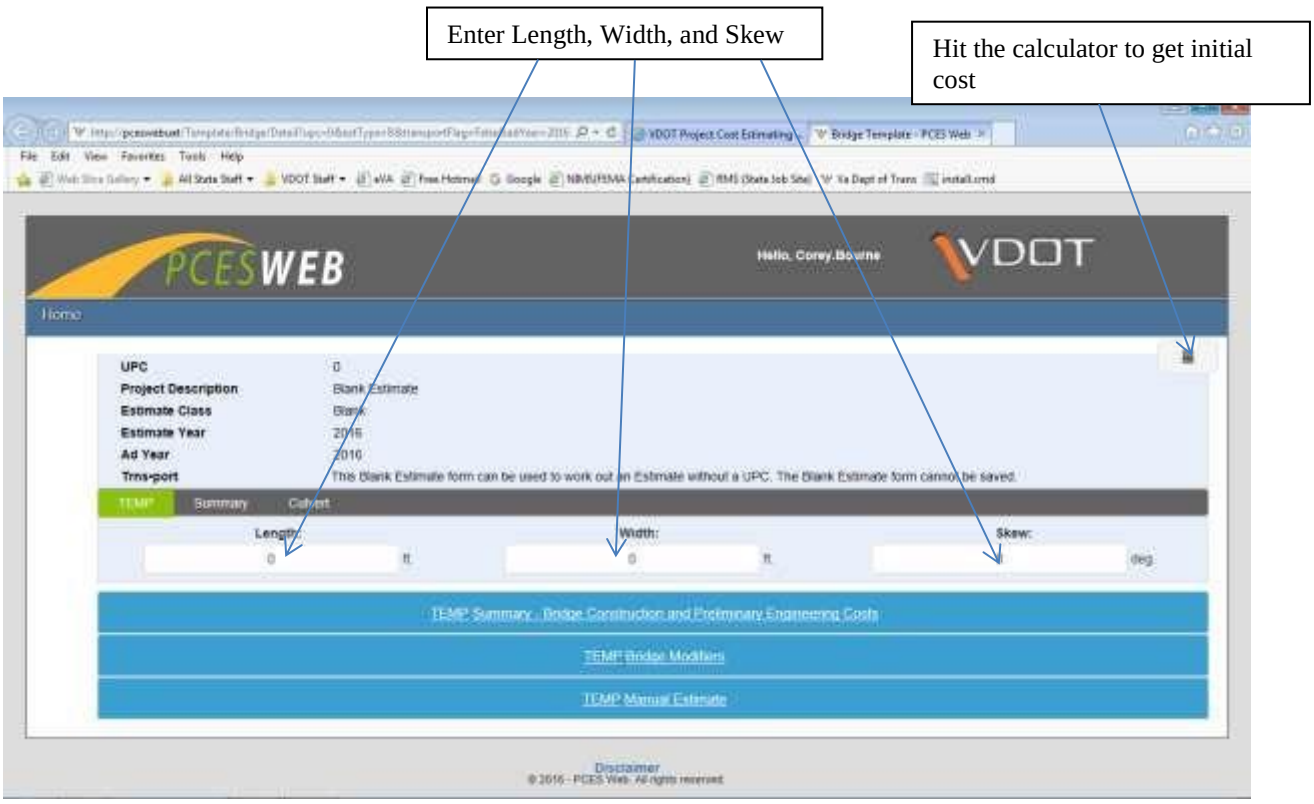
Bridge Web Based Application

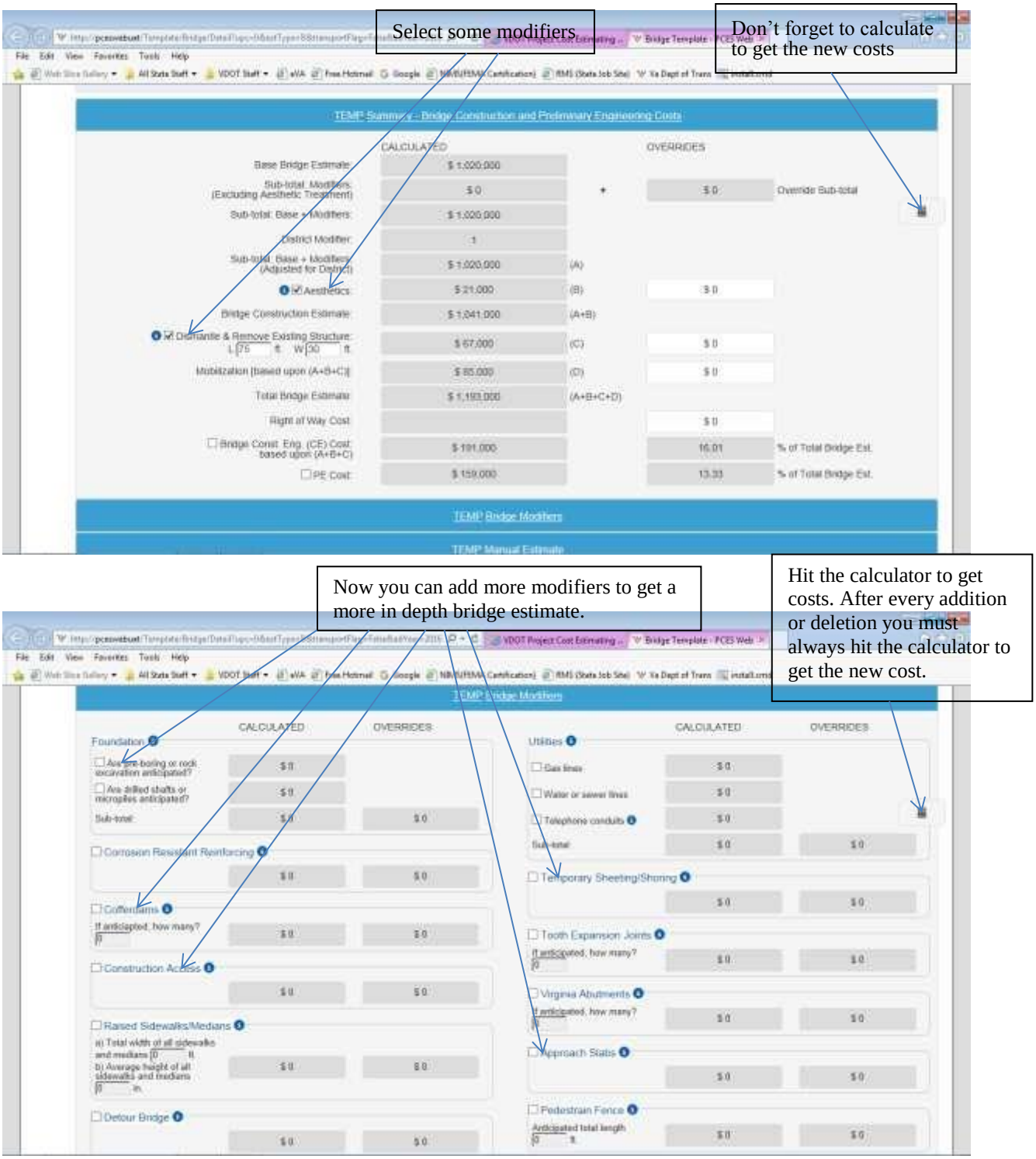
PCES version 7.1 allows for the project manager/designer to enter data in the Bridge Web Based Application. A square foot cost has been developed based on actual bids of closed-out projects. A separate spreadsheet is not needed to be downloaded from the PCES website under the UPC selected for each bridge but a spreadsheet is still available for external PCES users so they can still get scoping cost for bridge. The Web Based Application is currently unavailable for use by the external user. The new PCES workbook no longer has a bridge tab where costs can be entered. A bridge engineer or PM must fill out the new Bridge Web Based Application sheet to obtain the bridge estimate. In addition to the square foot cost, additional bridge modifiers are

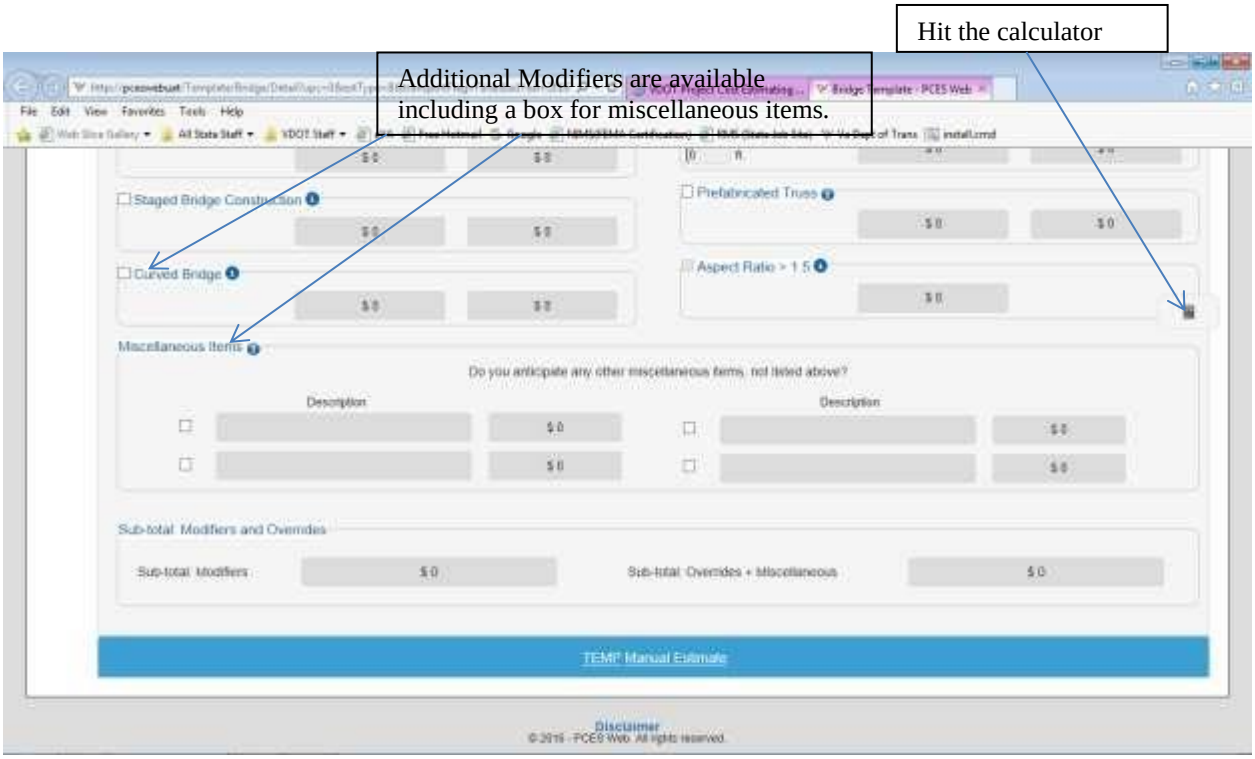
available to capture all the cost associated with a new bridge. There is also an area to enter Manual cost for a bridge as well.

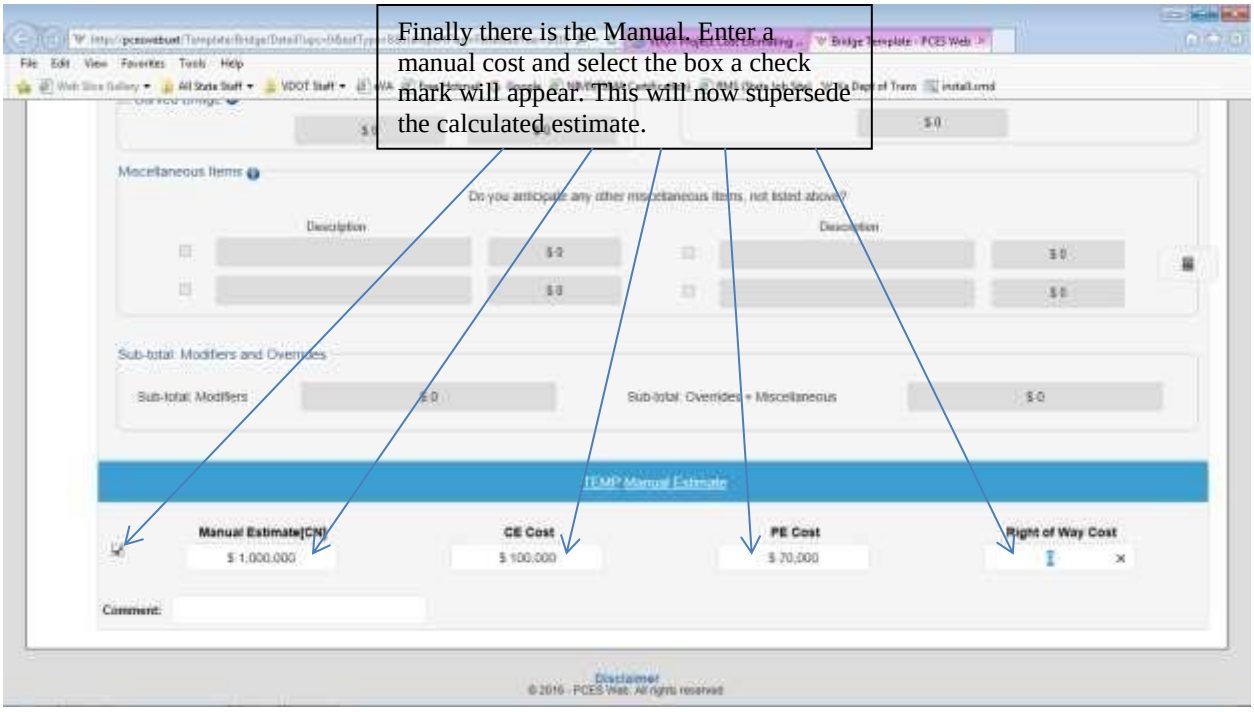
Web Based Bridge Application

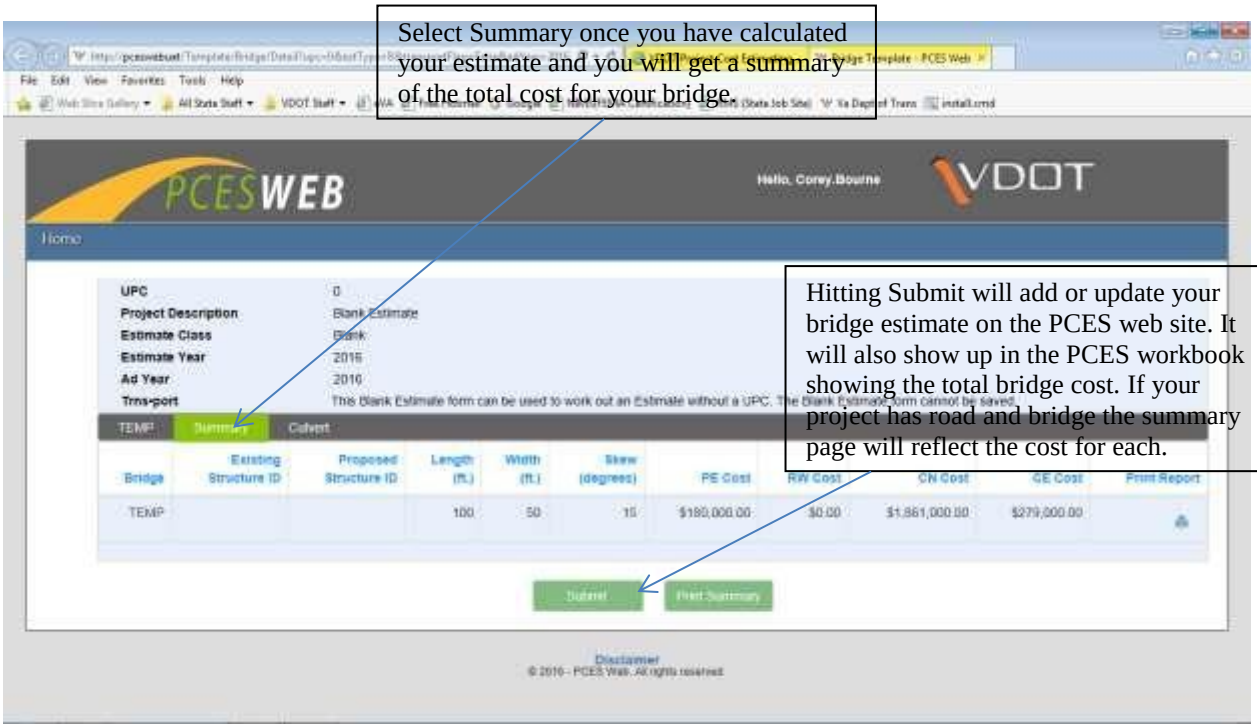

Click to open Bridge Web Based Application
Project Cost Estimating System
We keep Virginia Moving
IT Support
User's Guide
About

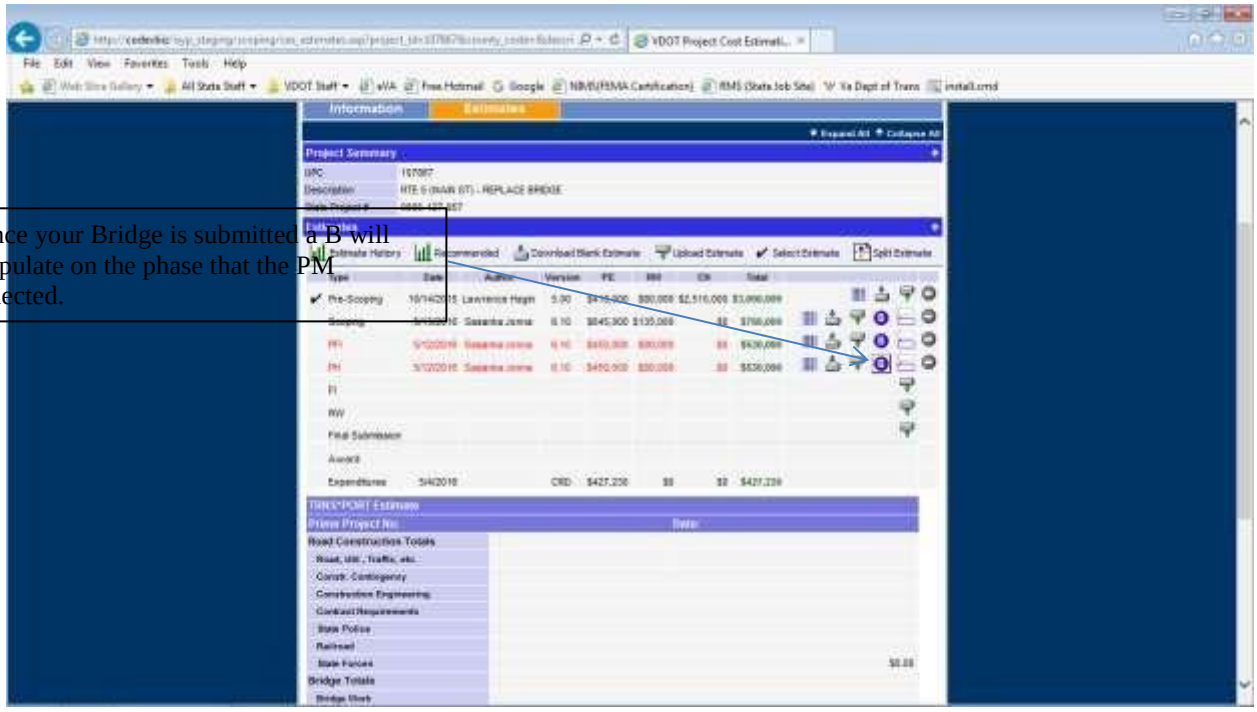

Enter Length, Width, and Skew
Hit the calculator to get initial cost
PCESWEB
Hello, Corey.Bourne
VDOT
Home
UPC
Project Description
Estimate Class
Estimate Year
Ad Year
Trns-port
Summary
Culvert
Length:
Width:
Skew:
TEMP Summary - Bridge Construction and Preliminary Engineering Costs
TEMP Bridge Modifiers
TEMP Manual Estimate
Disclaimer

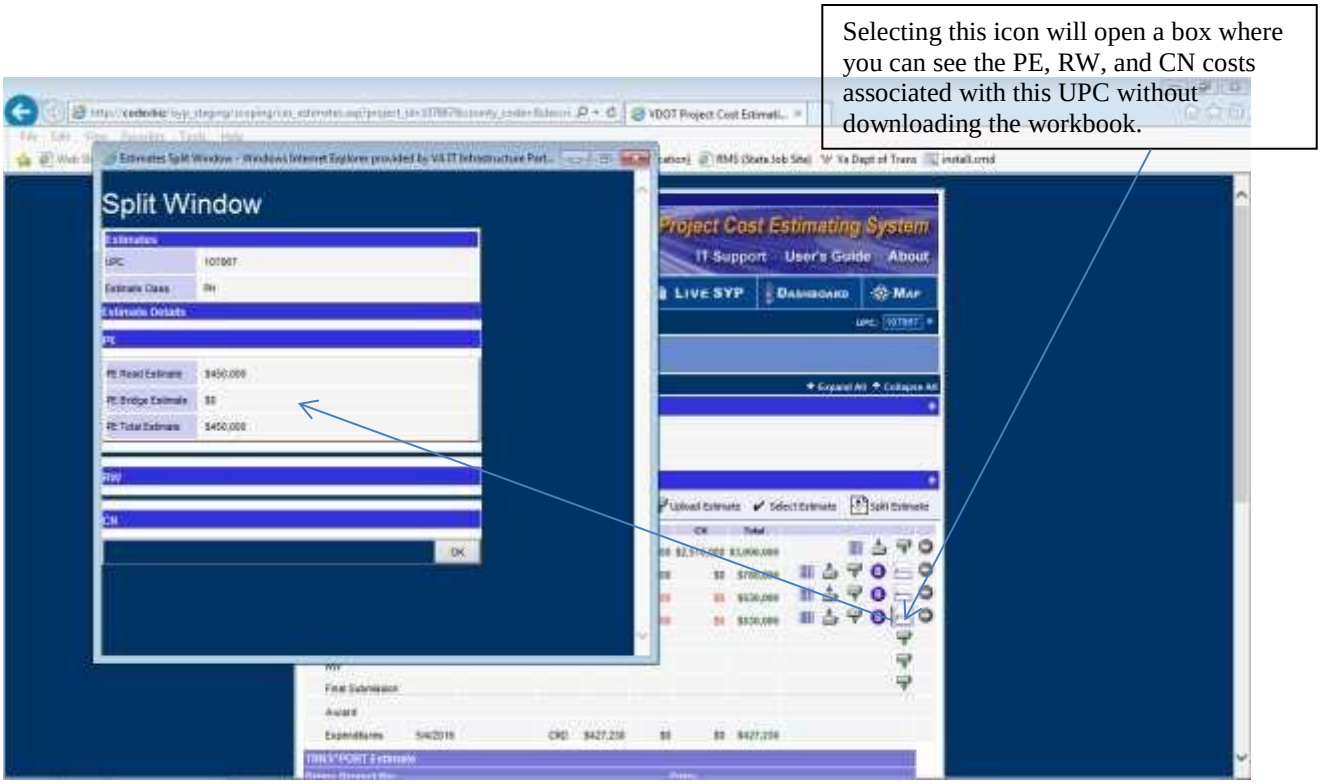

Select some modifiers
Don't forget to calculate to get the new costs
TEMP Summary - Bridge Construction and Preliminary Engineering Costs
CALCULATED
OVERRIDES
Base Bridge Estimate
Sub-total: Modifiers (Excluding Aesthetic Treatment)
Sub-total: Base + Modifiers
District Modifier
Sub-total: Base + Modifiers (Adjusted for District)
Aesthetics
Bridge Construction Estimate
Dismantle & Remove Existing Structure
Mobilization (based upon (A+B+C))
Total Bridge Estimate
Right of Way Cost
Bridge Const. Eng. (CE) Cost based upon (A+B+C)
PE Cost
Override Sub-total
% of Total Bridge Est.
TEMP Bridge Modifiers
TEMP Manual Estimate
Now you can add more modifiers to get a more in depth bridge estimate.
Hit the calculator to get costs. After every addition or deletion you must always hit the calculator to get the new cost.
Foundation
Corrosion Resistant Reinforcing
Cofferdams
Construction Access
Raised Sidewalks/Medians
Detour Bridge
Utilities
Temporary Sheeting/Shoring
Tooth Expansion Joints
Virginia Abutments
Approach Slabs
Pedestrian Fence

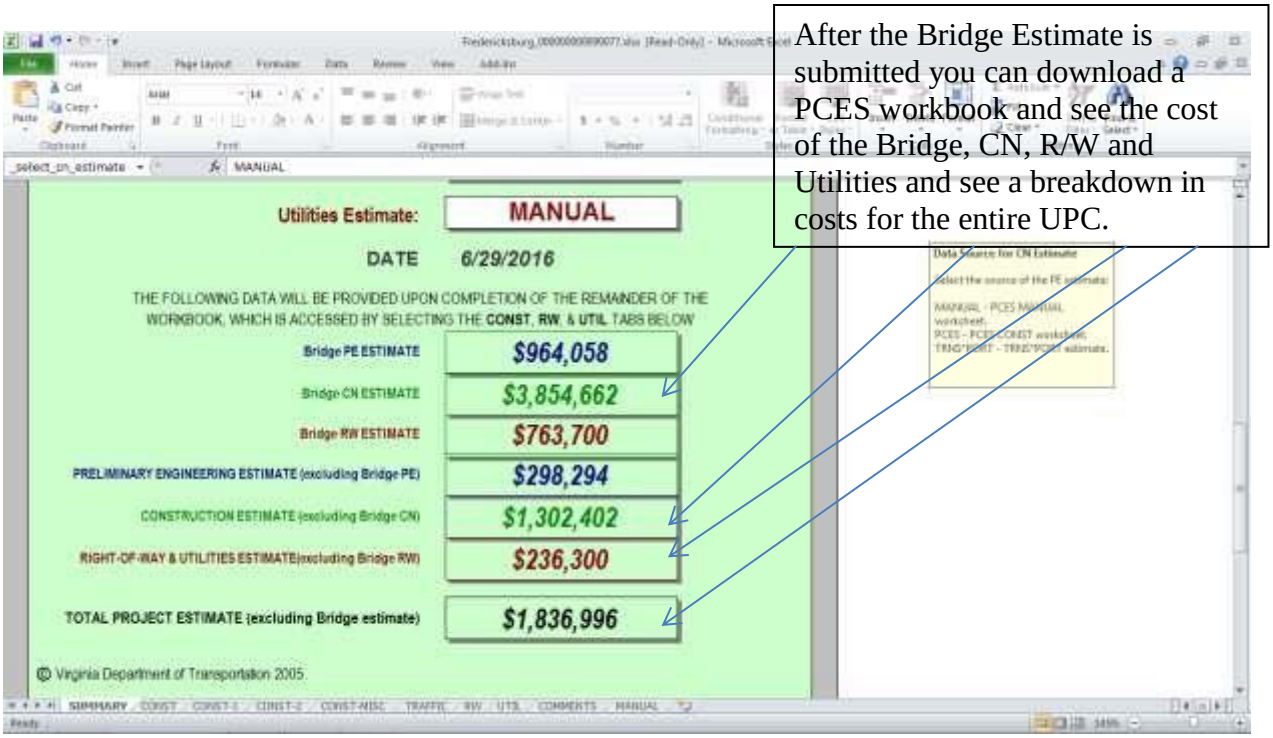

Hit the calculator
Additional Modifiers are available including a box for miscellaneous items.
Staged Bridge Construction
Curved Bridge
Prefabricated Truss
Aspect Ratio > 1.5
Miscellaneous Items
Do you anticipate any other miscellaneous items, not listed above?
Description
Description
Sub-total Modifiers and Overrides
Sub-total Modifiers
Sub-total Overrides + Miscellaneous
TEMP Manual Estimate
Disclaimer


Finally there is the Manual. Enter a manual cost and select the box a check mark will appear. This will now supersede the calculated estimate.
Miscellaneous Items
Do you anticipate any other miscellaneous items, not listed above?
Description
Description
Sub-total: Modifiers and Overrides
Sub-total: Modifiers
Sub-total: Overrides + Miscellaneous
TEMP Manual Estimate
Manual Estimate(CN)
$ 1,000,000
CE Cost
$ 100,000
PE Cost
$ 70,000
Right of Way Cost
Comment:
Disclaimer

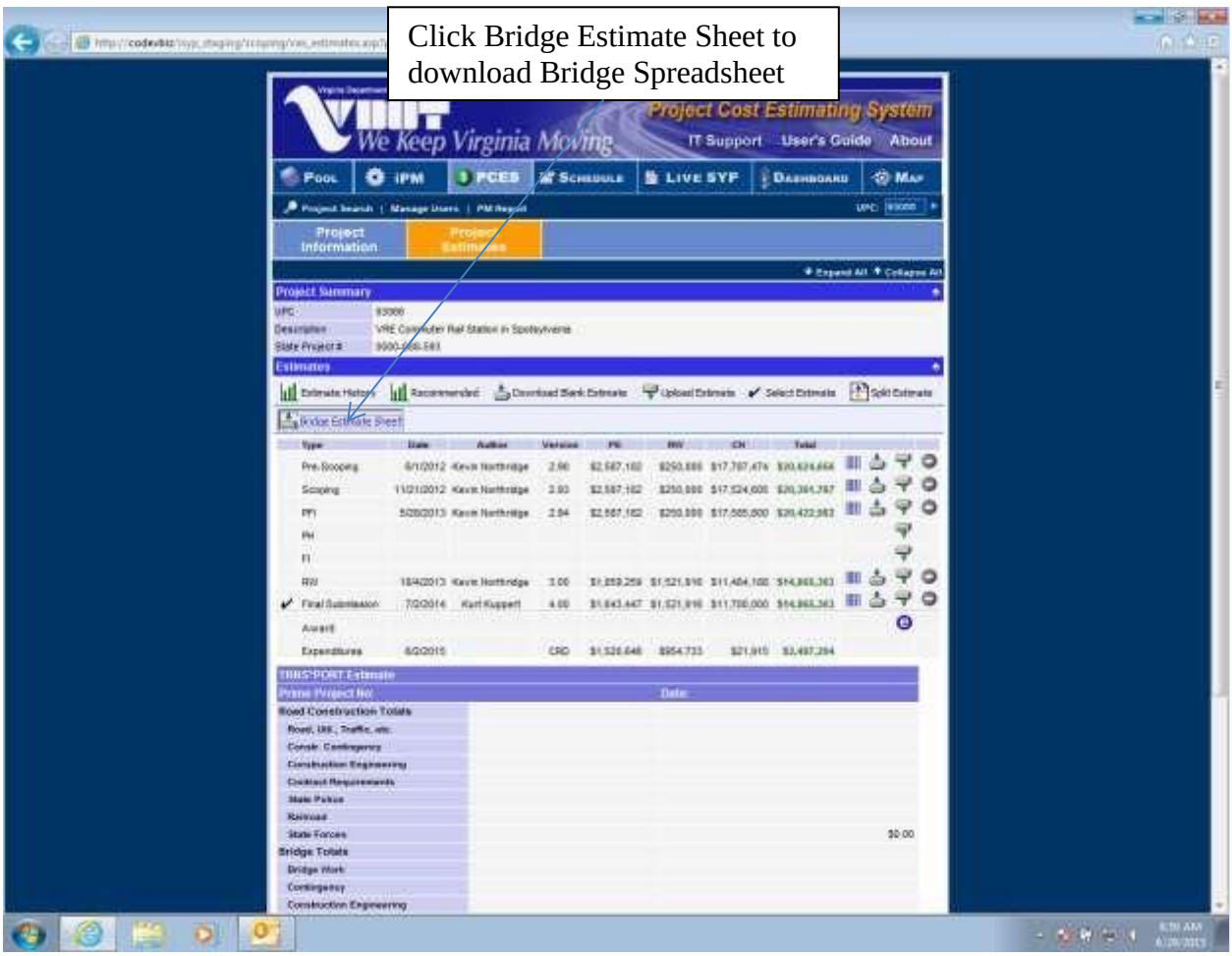

Select Summary once you have calculated your estimate and you will get a summary of the total cost for your bridge.
PCESWEB
Hello, Corey.Bourne
VDOT
Home
UPC
Project Description
Blank Estimate
Estimate Class
Estimate Year
2016
Ad Year
2016
Trns-port
This Blank Estimate form can be used to work out an Estimate without a UPC. The Blank Estimate form cannot be saved.
TEMP
Summary
Culvert
Bridge
Existing Structure ID
Proposed Structure ID
Length (ft.)
Width (ft.)
Skew (degrees)
PE Cost
RW Cost
CN Cost
CE Cost
Print Report
TEMP
100
50
15
$180,000.00
$0.00
$1,861,000.00
$279,000.00
Submit
Print Summary
Hitting Submit will add or update your bridge estimate on the PCES web site. It will also show up in the PCES workbook showing the total bridge cost. If your project has road and bridge the summary page will reflect the cost for each.
Disclaimer


Once your Bridge is submitted a B will populate on the phase that the PM selected.

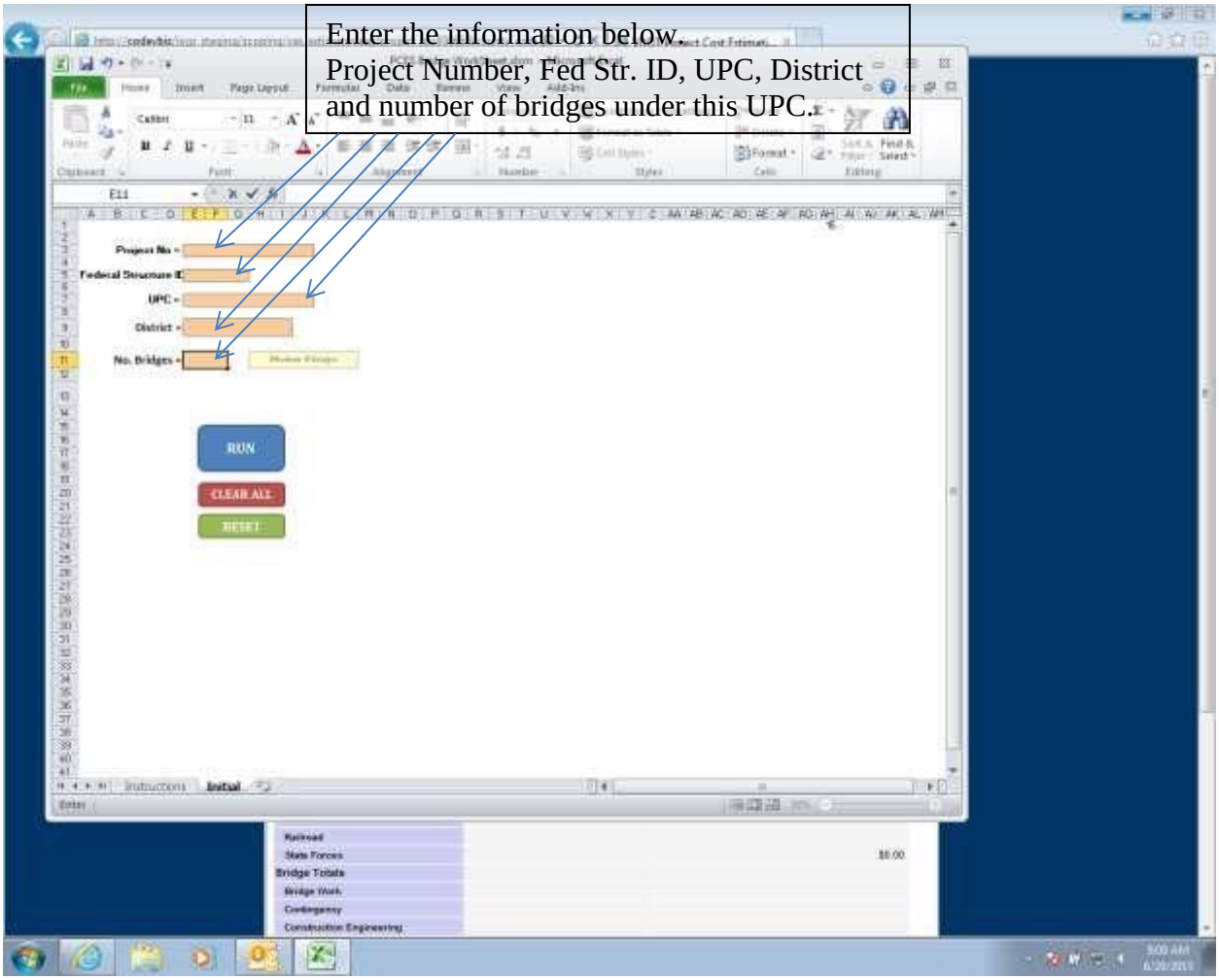

Selecting this icon will open a box where you can see the PE, RW, and CN costs associated with this UPC without downloading the workbook.
Split Window
Project Cost Estimating System


After the Bridge Estimate is submitted you can download a PCES workbook and see the cost of the Bridge, CN, R/W and Utilities and see a breakdown in costs for the entire UPC.
Utilities Estimate:
MANUAL
DATE
6/29/2016
THE FOLLOWING DATA WILL BE PROVIDED UPON COMPLETION OF THE REMAINDER OF THE WORKBOOK, WHICH IS ACCESSED BY SELECTING THE CONST, RW, & UTIL TABS BELOW
Bridge PE ESTIMATE
$964,058
Bridge CN ESTIMATE
$3,854,662
Bridge RW ESTIMATE
$763,700
PRELIMINARY ENGINEERING ESTIMATE (excluding Bridge PE)
$298,294
CONSTRUCTION ESTIMATE (excluding Bridge CN)
$1,302,402
RIGHT-OF-WAY & UTILITIES ESTIMATE(excluding Bridge RW)
$236,300
TOTAL PROJECT ESTIMATE (excluding Bridge estimate)
$1,836,996
© Virginia Department of Transportation 2005

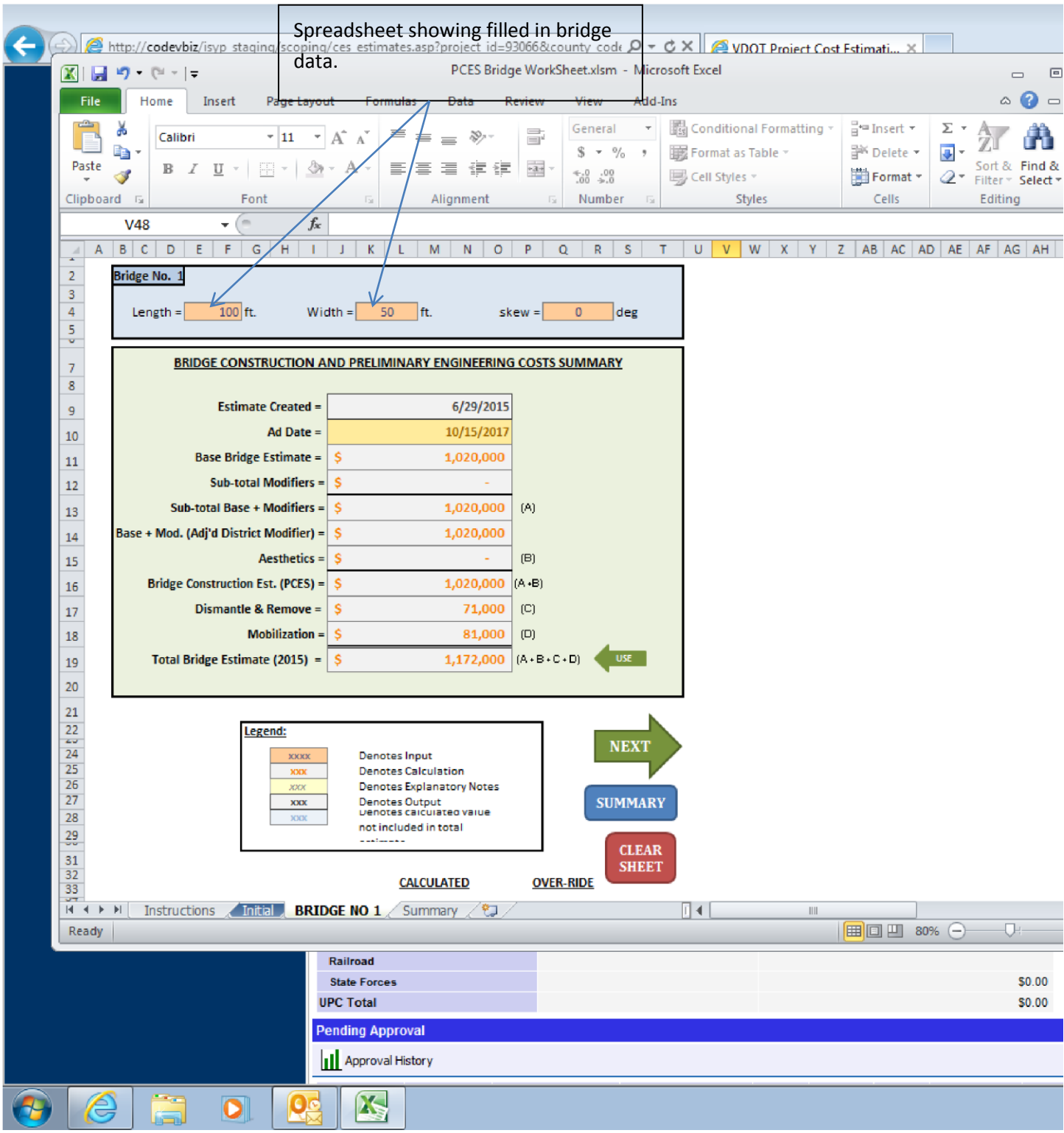
Bridge Estimate Sheet

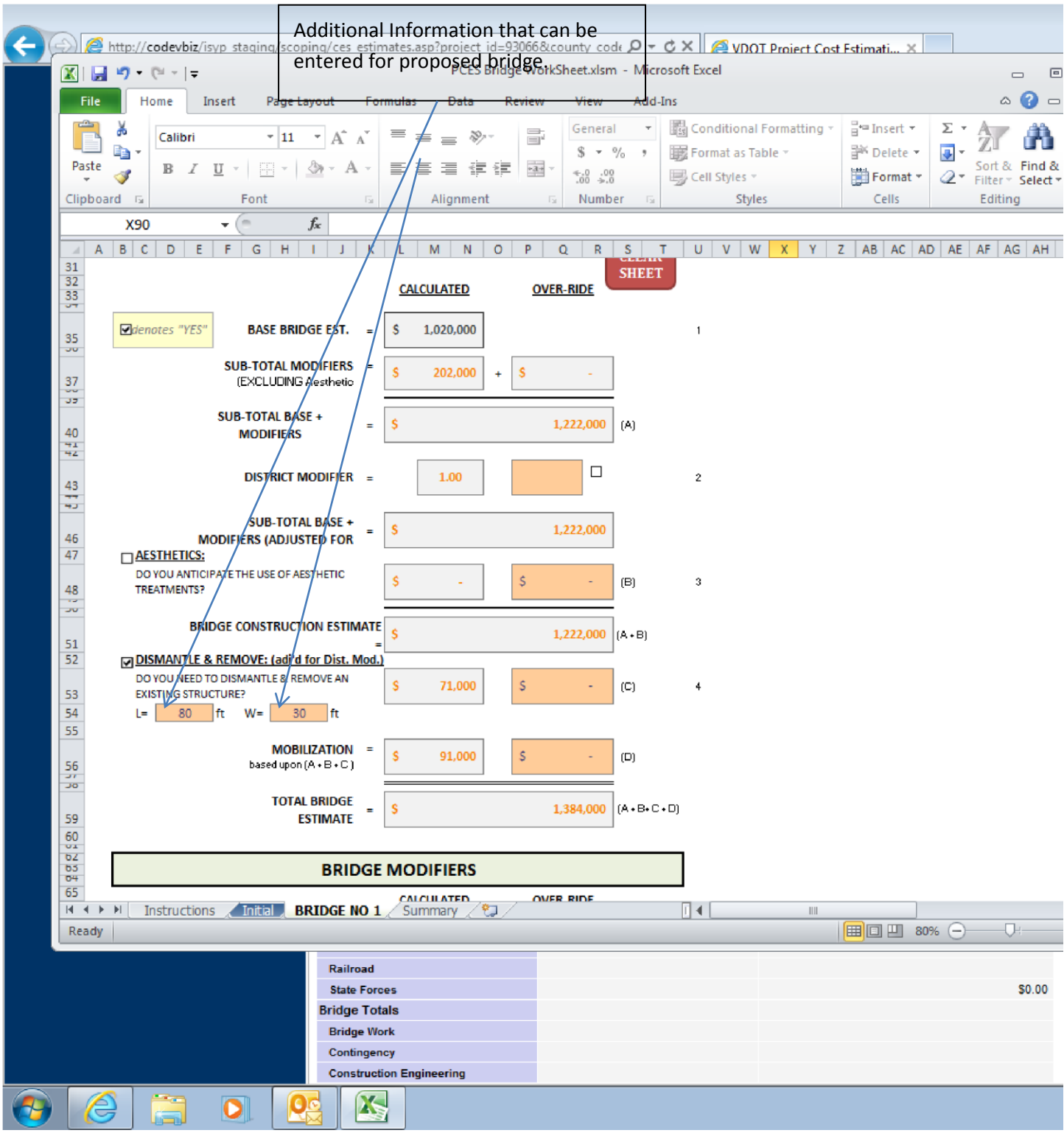


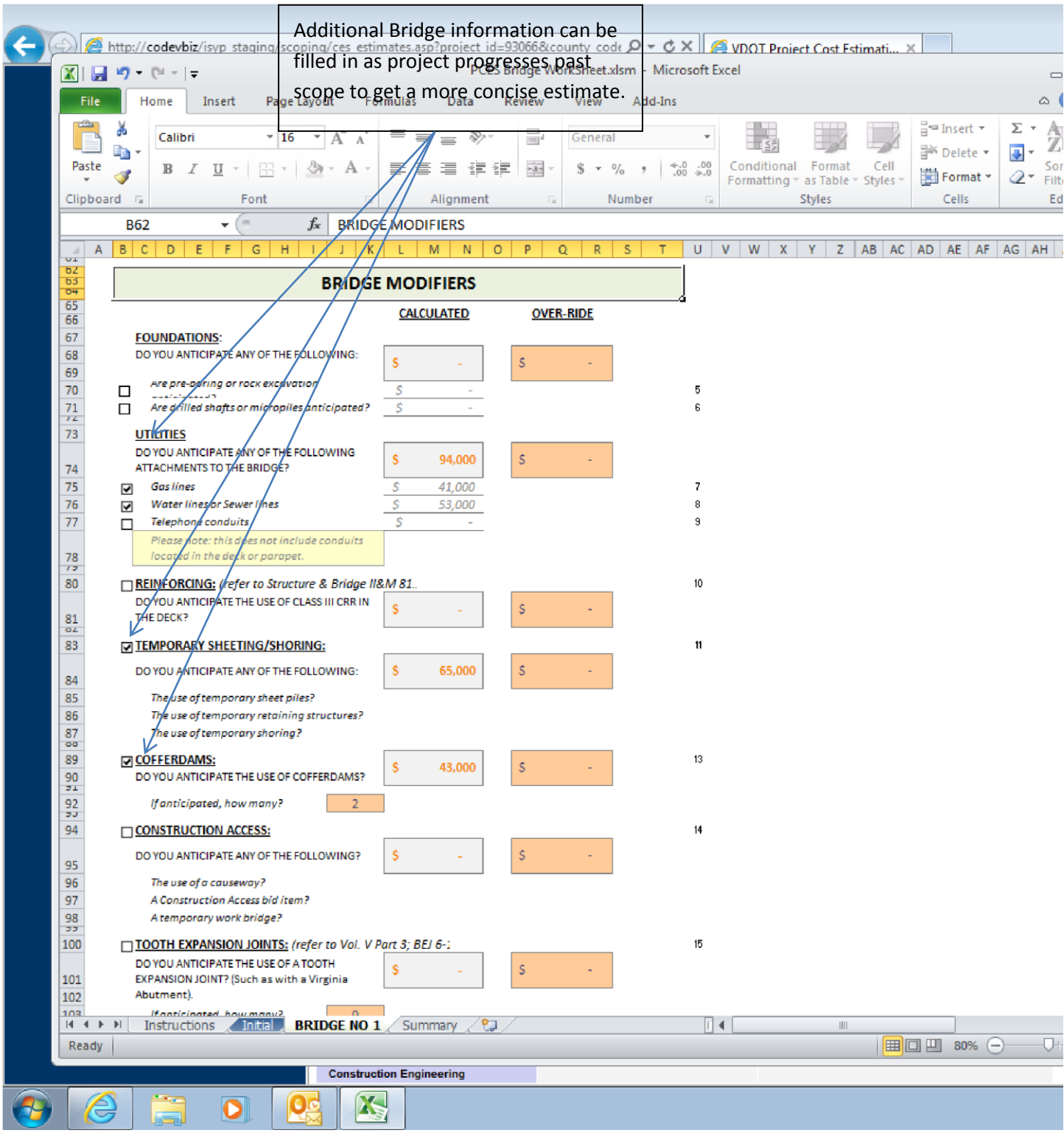
Open the file. (See screenshot below)
Once the information has been entered hit the blue RUN button. If you entered the wrong information or want to run the sheet with different information hit green Reset button. If you wish to start over hit the red CLEAR ALL button.

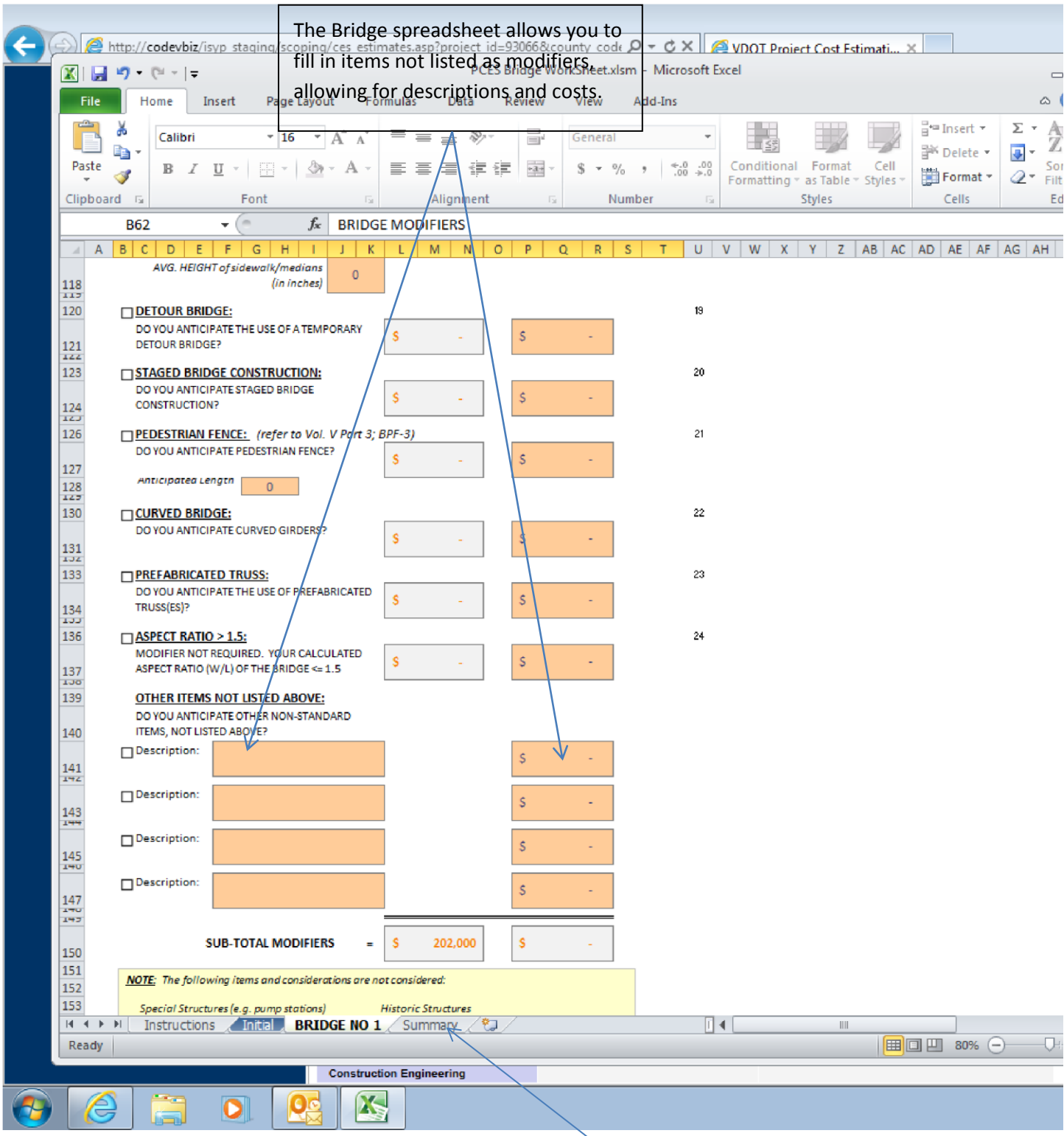


Bridge Estimate Sheet (Cont.)

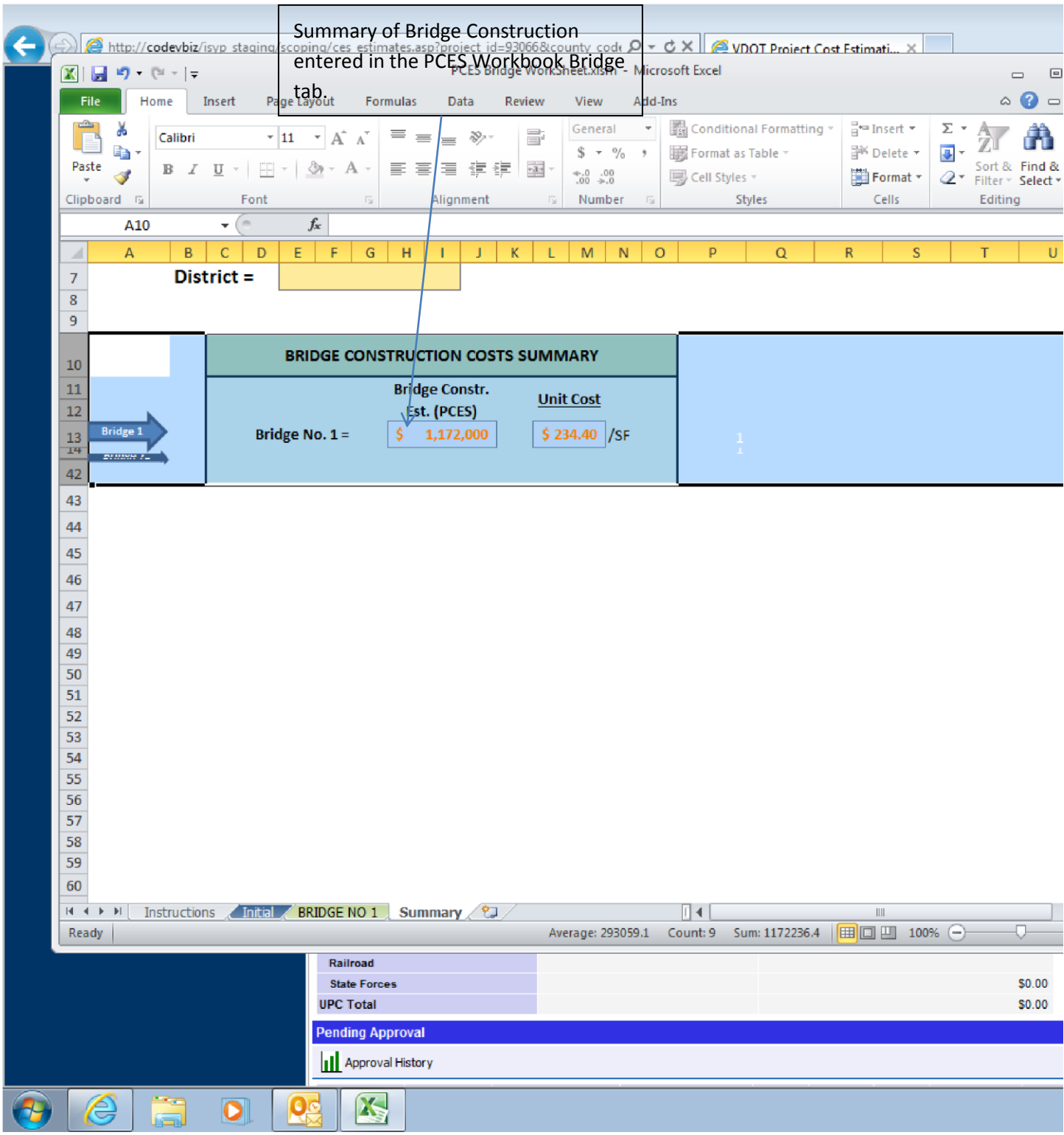

Spreadsheet showing filled in bridge data.
PCES Bridge WorkSheet.xlsm - Microsoft Excel
Bridge No. 1
Length = 100 ft.
Width = 50 ft.
skew = 0 deg
BRIDGE CONSTRUCTION AND PRELIMINARY ENGINEERING COSTS SUMMARY
Estimate Created = 6/29/2015
Ad Date = 10/15/2017
Base Bridge Estimate = $ 1,020,000
Sub-total Modifiers = $ -
Sub-total Base + Modifiers = $ 1,020,000 (A)
Base + Mod. (Adj'd District Modifier) = $ 1,020,000
Aesthetics = $ - (B)
Bridge Construction Est. (PCES) = $ 1,020,000 (A+B)
Dismantle & Remove = $ 71,000 (C)
Mobilization = $ 81,000 (D)
Total Bridge Estimate (2015) = $ 1,172,000 (A+B+C+D)
USE
Legend:
Denotes Input
Denotes Calculation
Denotes Explanatory Notes
Denotes Output
Denotes calculated value not included in total estimate
NEXT
SUMMARY
CLEAR SHEET
CALCULATED
OVER-RIDE
Instructions
Initial
BRIDGE NO 1
Summary
Railroad
State Forces $0.00
UPC Total $0.00
Pending Approval
Approval History


Additional Information that can be entered for proposed bridge.
PCES Bridge WorkSheet.xlsm - Microsoft Excel
CALCULATED
OVER-RIDE
denotes "YES"
BASE BRIDGE EST.
$ 1,020,000
SUB-TOTAL MODIFIERS (EXCLUDING Aesthetic
$ 202,000
$ -
SUB-TOTAL BASE + MODIFIERS
$ 1,222,000
(A)
DISTRICT MODIFIER
1.00
SUB-TOTAL BASE + MODIFIERS (ADJUSTED FOR
$ 1,222,000
AESTHETICS:
DO YOU ANTICIPATE THE USE OF AESTHETIC TREATMENTS?
$ -
$ -
(B)
BRIDGE CONSTRUCTION ESTIMATE
$ 1,222,000
(A + B)
DISMANTLE & REMOVE: (adj'd for Dist. Mod.)
DO YOU NEED TO DISMANTLE & REMOVE AN EXISTING STRUCTURE?
$ 71,000
$ -
(C)
L= 80 ft W= 30 ft
MOBILIZATION based upon (A + B + C)
$ 91,000
$ -
(D)
TOTAL BRIDGE ESTIMATE
$ 1,384,000
(A + B + C + D)
BRIDGE MODIFIERS
Instructions
Initial
BRIDGE NO 1
Summary
Railroad
State Forces
$0.00
Bridge Totals
Bridge Work
Contingency
Construction Engineering


Additional Bridge information can be filled in as project progresses past scope to get a more concise estimate.
PCES Bridge WorkSheet.xlsm - Microsoft Excel
B62
BRIDGE MODIFIERS
BRIDGE MODIFIERS
CALCULATED
OVER-RIDE
FOUNDATIONS:
DO YOU ANTICIPATE ANY OF THE FOLLOWING:
$ -
$ -
Are pre-paring or rock excavation anticipated?
Are drilled shafts or micropiles anticipated?
UTILITIES
DO YOU ANTICIPATE ANY OF THE FOLLOWING ATTACHMENTS TO THE BRIDGE?
$ 94,000
$ -
Gas lines
$ 41,000
Water lines or Sewer lines
$ 53,000
Telephone conduits
$ -
Please note: this does not include conduits located in the deck or parapet.
REINFORCING: (refer to Structure & Bridge II&M 81..
DO YOU ANTICIPATE THE USE OF CLASS III CRR IN THE DECK?
TEMPORARY SHEETING/SHORING:
DO YOU ANTICIPATE ANY OF THE FOLLOWING:
$ 65,000
The use of temporary sheet piles?
The use of temporary retaining structures?
The use of temporary shoring?
COFFERDAMS:
DO YOU ANTICIPATE THE USE OF COFFERDAMS?
$ 43,000
If anticipated, how many?
2
CONSTRUCTION ACCESS:
DO YOU ANTICIPATE ANY OF THE FOLLOWING?
The use of a causeway?
A Construction Access bid item?
A temporary work bridge?
TOOTH EXPANSION JOINTS: (refer to Vol. V Part 3; BEI 6-:
DO YOU ANTICIPATE THE USE OF A TOOTH EXPANSION JOINT? (Such as with a Virginia Abutment).
Instructions
Initial
BRIDGE NO 1
Summary
Ready
Construction Engineering



Once you have completed filling out the Estimate Sheet click on Summary to see the Bridge Construction cost.


Summary of Bridge Construction entered in the PCES Workbook Bridge tab.
District =
BRIDGE CONSTRUCTION COSTS SUMMARY
Bridge Constr. Est. (PCES)
Unit Cost
Bridge No. 1 =
$ 1,172,000
$ 234.40
/SF
Bridge 1
Instructions
Initial
BRIDGE NO 1
Summary
Railroad
State Forces
$0.00
UPC Total
$0.00
Pending Approval
Approval History

Right of Way Worksheet

Right of Way project costs can be entered two ways in the PCES. The first avenue is to use the "Computed Costs" in the system. This method uses preset costs in the worksheet. The other method is to use "User Defined Costs". This method allows the user to enter the unit costs based on known or historic unit costs. When the preferred method is selected a "<" will show up on the right of side of the individual fields requiring data. These are also color-coded. The "User Defined Costs" symbol (<) is blue and the "Computed Costs" symbol (<) is green. Directions are provided below for each method.

When "Computed Costs" is chosen, the user still has many choices to make, as most fields are divided into values with a wide range. The user of the system must have a good working knowledge of the values they are choosing. The user cannot rely on PCES to give them a reasonable estimate without choosing the appropriate value ranges.

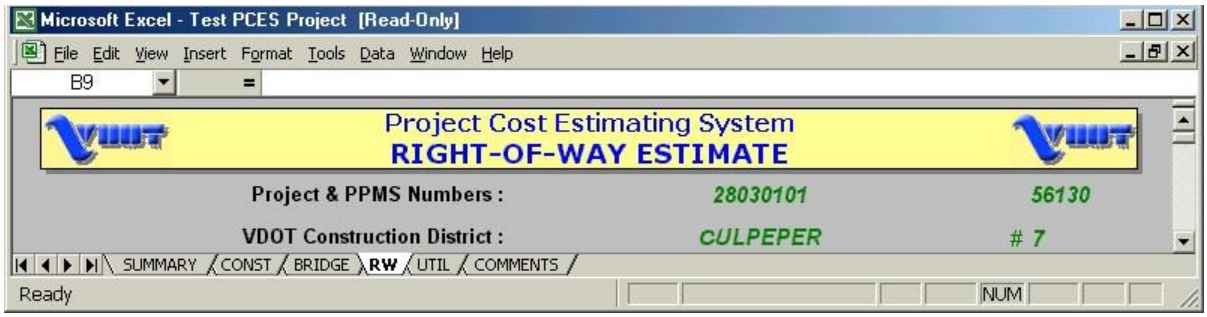
Whichever method selected look for the (<) symbol on the right side of the fields needing data to compute the estimate for that portion of the right of way estimate. Many of the fields require data regardless if "Computed Cost" or "User Defined Cost" is the selected method for computing the cost.

Project & UPC numbers

Automatically provided based on project information from another system.

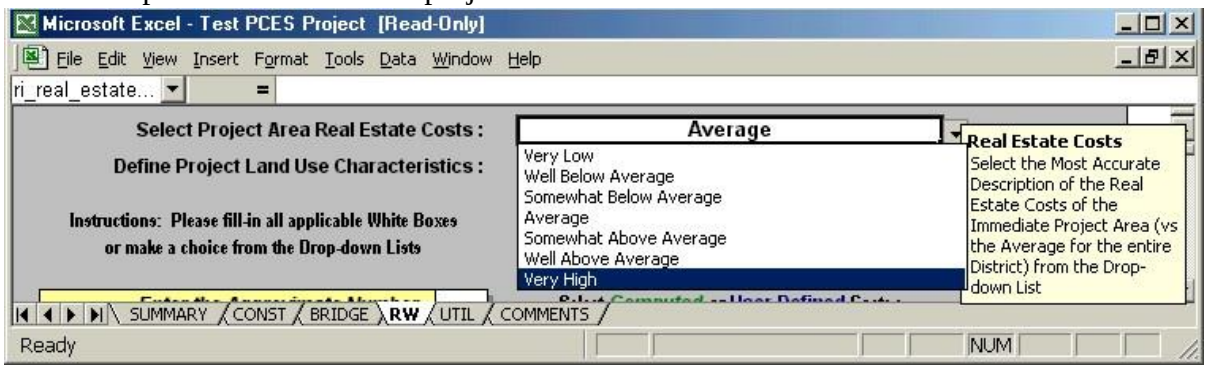
VDOT Construction District

Automatically provided based on project information from another system.



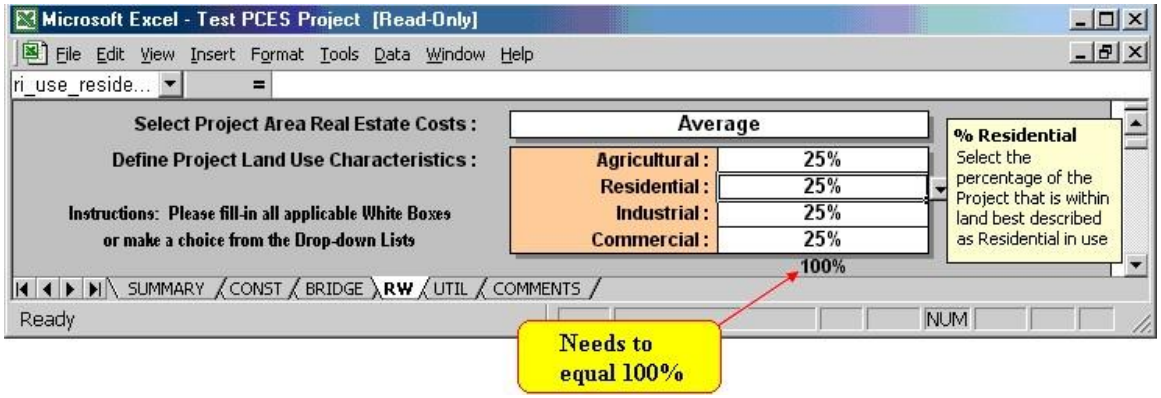
Select Project Area Real Estate Costs

The user has seven options from which to choose the most appropriate real estate cost. These options are very low, well below average, somewhat below average, average, somewhat above average, well above average, very high. The user is to select the option that best fits the overall cost for their particular district and project location.



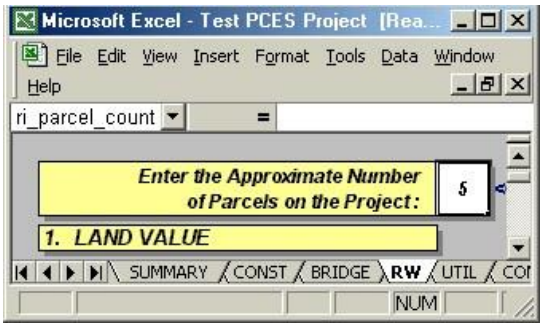
Define Project Land Use Characteristics

The user has four options in this category: Agricultural, Residential, Industrial, and Commercial. The user must select the percentage that best fits the amount of each zoning class of land impacted by the project. Each land use description has a drop-down menu to select the percentage to be applied to that particular land use. The percentages need to total 100% before the system will provide a total cost.



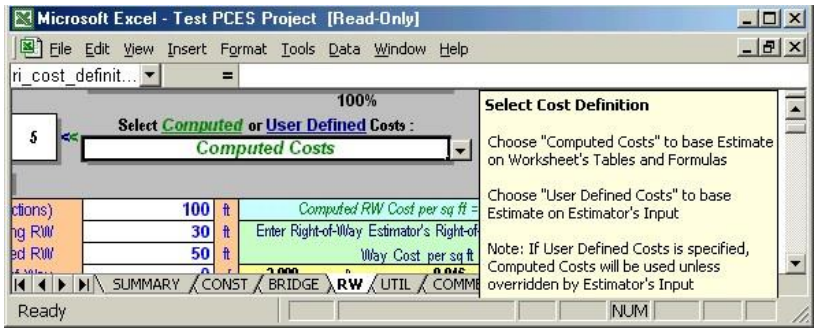
Enter the Approximate Number of Parcels on the Project

The user enters the number of parcels to be used to compute the right of way cost.



Select Computed or User Defined Costs

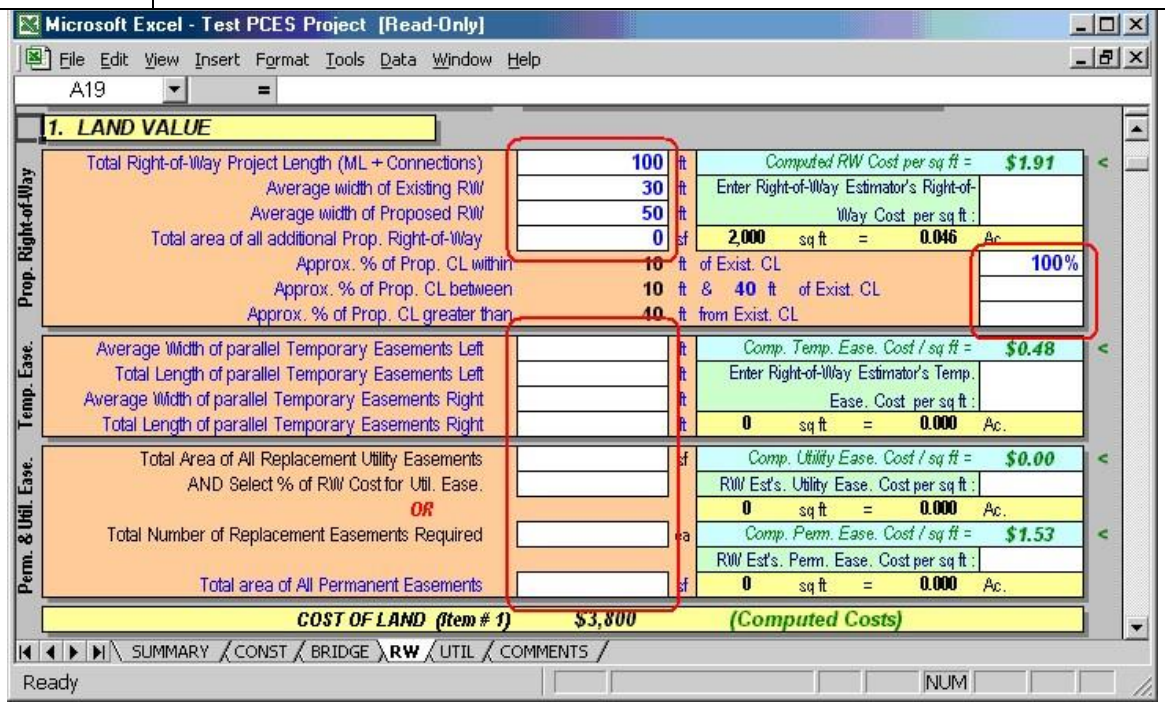
There is a drop-down menu for the user to choose the recommended cost process for the project. "Computed Cost" uses the cost associated with PCES and "User Defined Cost" allows the user to enter unit cost.



1. Land Value

The values for the items in blue need to be entered by the user (Proposed Right of Way, Temporary Easements, and Permanent & Utility Easements). This information will be used to determine the "Land Value" cost of the project. It is important for the user to complete the percentages on the right to total 100%; otherwise, system will not compute a "Land Value" cost. The drop-down menus for the existing and proposed right of way widths can be overridden. When using "User Defined" costs, the right of way user needs to enter a per square foot cost for the Proposed Right of Way, Temporary Easements, and Permanent & Utility Easements blocks. If no value is entered, no "Land Value" cost will be generated.

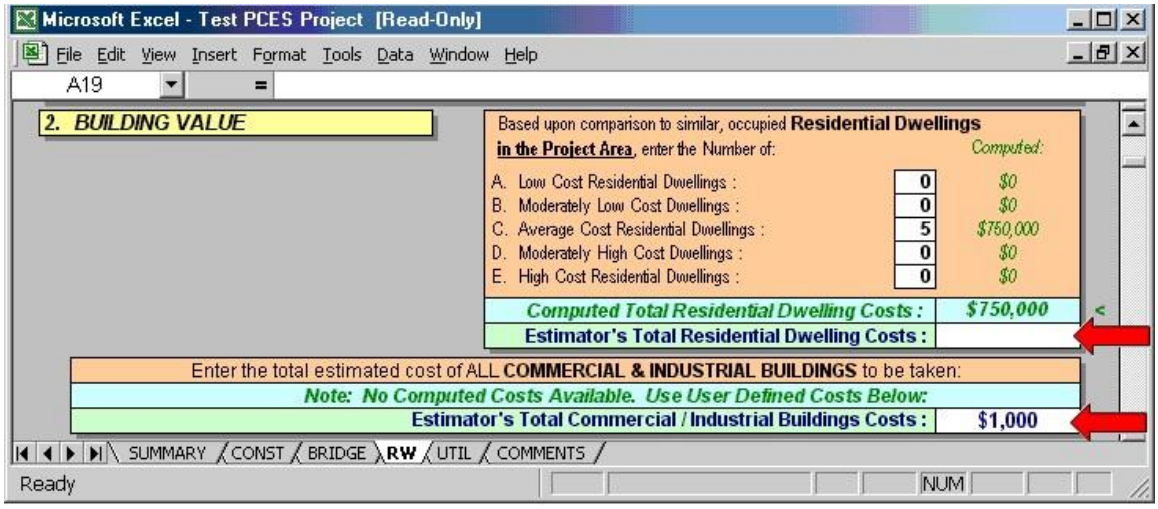
Note:	*Areas circled in **RED** below need to be completed by Project Manager/designer*



2. Building Value

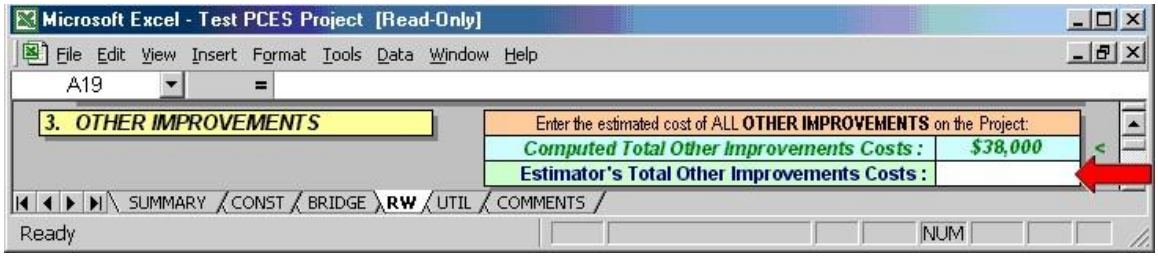
When using "User Defined" cost in this category, the right of way user will need to enter two values, if applicable. In the "Estimator's Total Residential Dwelling Costs" field, the user is to enter the lump sum total residential relocations Costs for the entire project.

In the "Estimator's Total Commercial / Industrial Building Costs" field, the user is to enter the lump sum total commercial / industrial relocation cost for the entire project.



3. Other Improvements

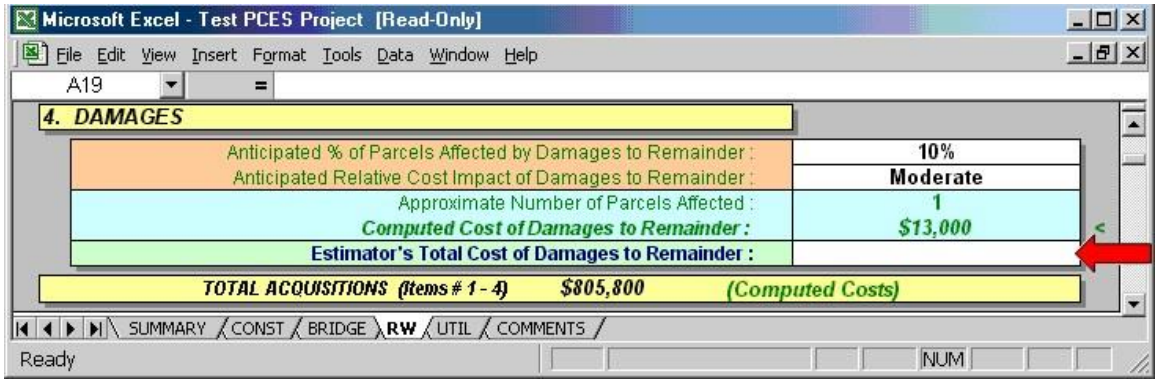
Other improvements are any tangible items in the taking that are compensable, such as landscaping, trees, retaining walls, subdivision signs, other signs, outbuildings, walkways, parking areas, wells, water systems, etc. When "Computed Costs" is used in the Residential Building Value section, a figure will appear in the computed costs area for Other Improvements and this may be used or a user-defined figure may be substituted. If user defined cost is used in Residential Building Value, then user defined must be used under Other Improvements. Commercial/Industrial Building Value requires user defined, thus user defined must be used on Other Improvements.



4. Damages

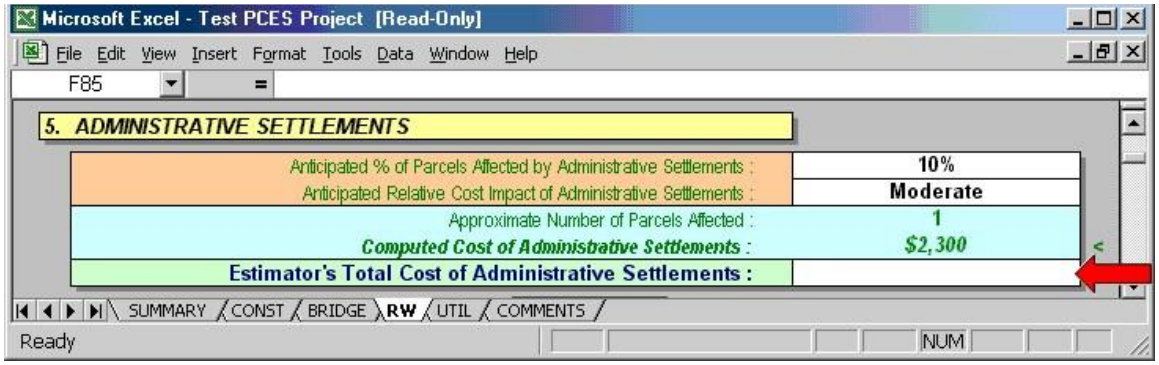
It allows the user to enter a lump sum cost for damages.

Note:	*In order to get the correct sum of sections 1-4, all fields in these sections be completed.*



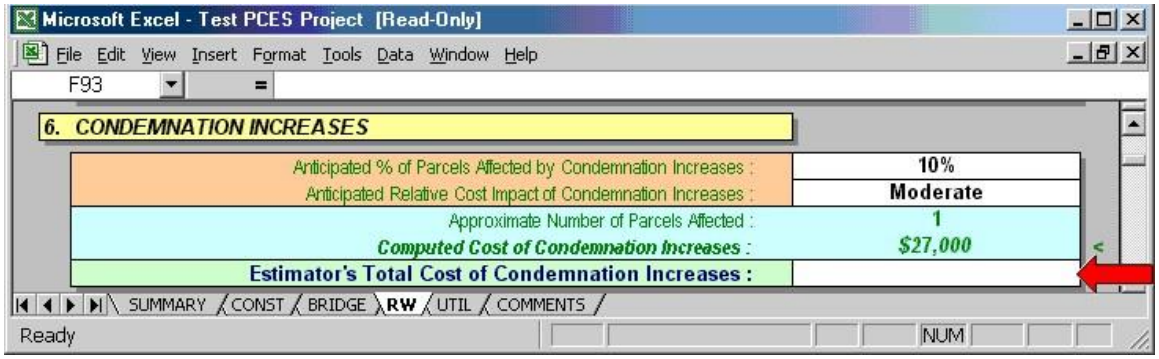
5. Administrative Settlements

It allows the user to enter a lump sum cost for Administrative Settlements.



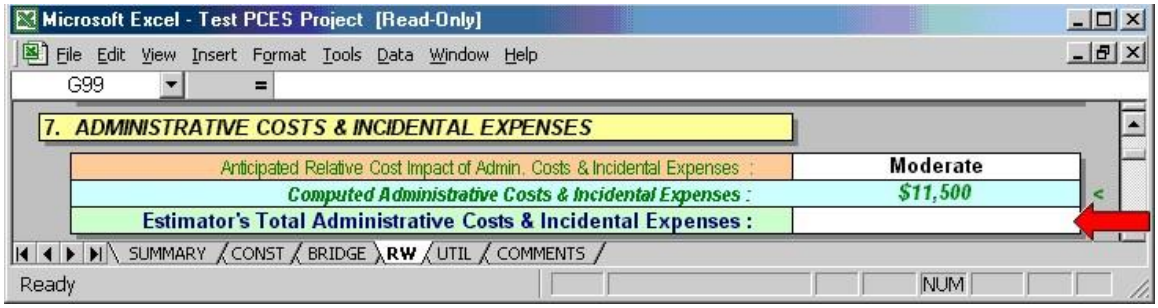
6. Condemnation Increases

Allows the user to enter a lump sum cost for Condemnation Increases



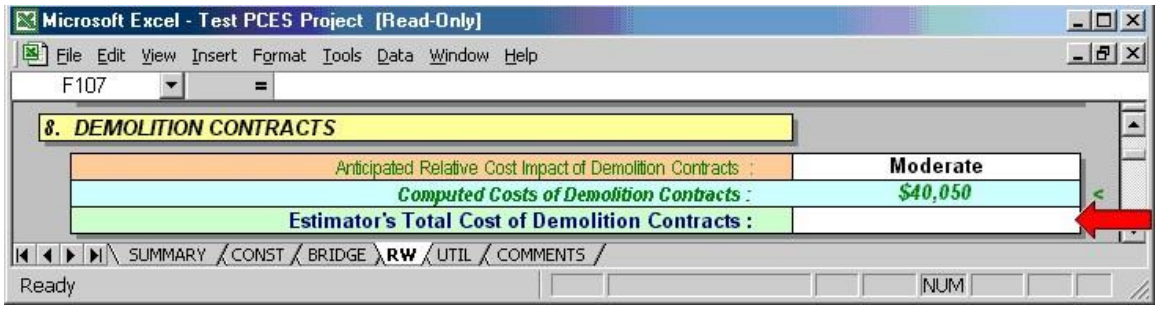
7. Administrative Costs & Incidental Expenses

It allows the user to enter a lump sum cost for Administrative Costs & Incidental Increases.



8. Demolition Contracts

It allows the user to enter a lump sum cost for Demolition Contracts. The user must know if the demolition costs are to be handled by the Right of Way Section, by contract, or if the demolition costs are to be included in the construction estimate. If these costs are to be included in the construction contract, this cost should be provided to the project manager to incorporate into the construction portion of the estimate.



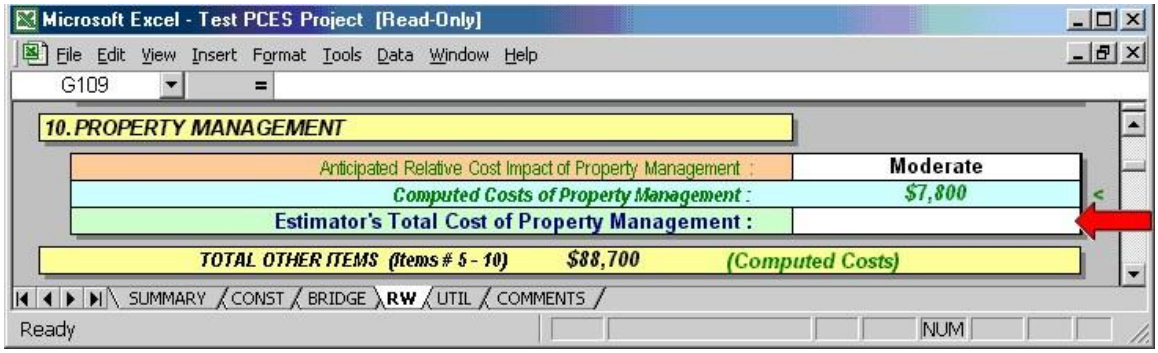
9. Hazardous Materials Removal

It allows the user to enter a lump sum cost for Hazardous Materials Removal.

10. Property Management

It allows the user to enter a lump sum cost for Property Management.

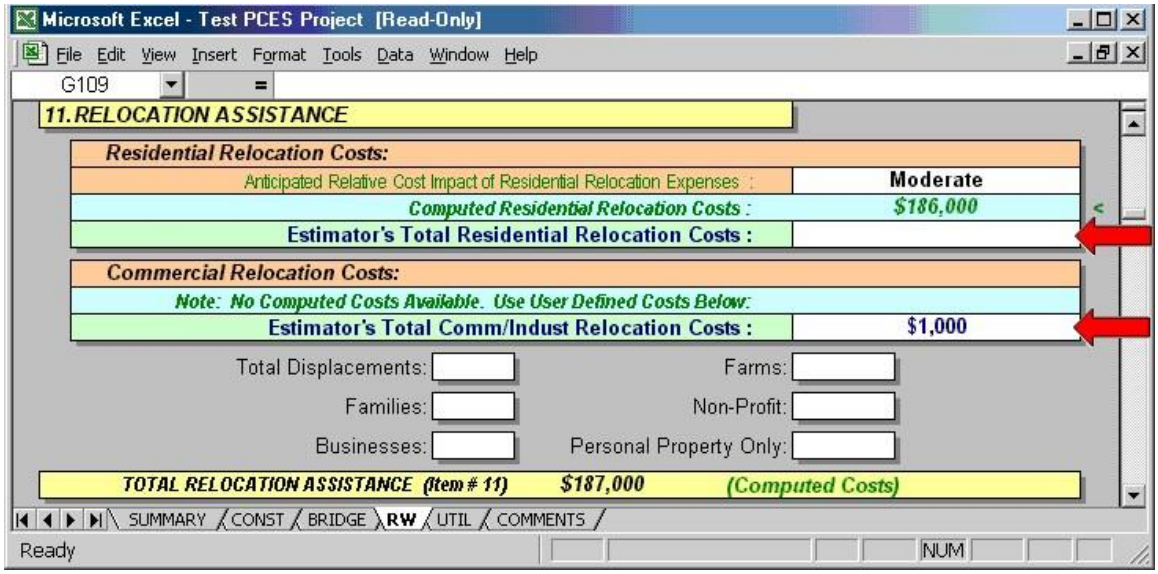
Note:	*In order to get the correct sum of sections 5 – 10, all fields in these sections be completed.*



11. Relocation Assistance

It allows the user to enter lump sum costs for Relocation Assistance in two locations. The first location is for "Total Residential Relocation Costs" and the second is for "Total Commercial / Industrial Relocation Costs"

The boxes for "Total Displacements", "Farms", "Families", "Non-profit", "Businesses", and "Personal Property Only" are for documentation proposes only.

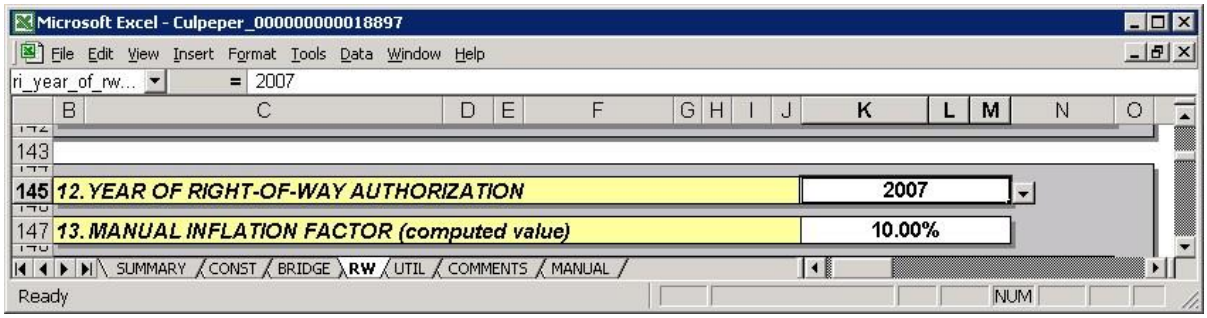


12. Year of Right-of-Way Authorization

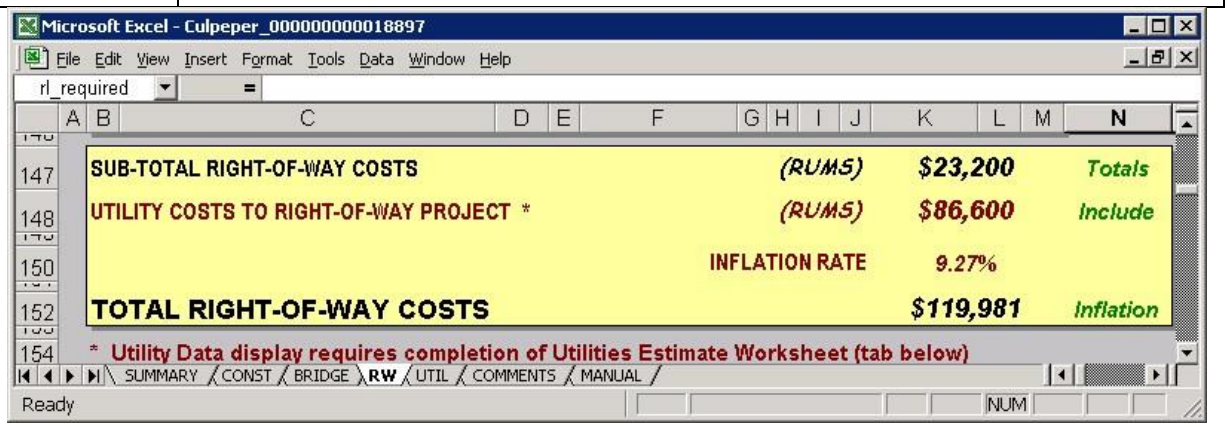
The user is to select the year in which right of way authorization is anticipated for the project through the drop-down menu. An inflation factor is applied to the right of way cost based on today's cost to generate a right of way cost to the year selected.

Manual Inflation Factor

The user can enter an annual inflation factor to be used in computing the right of way cost. If no inflation rate is entered, no inflation will be applied to the estimate.

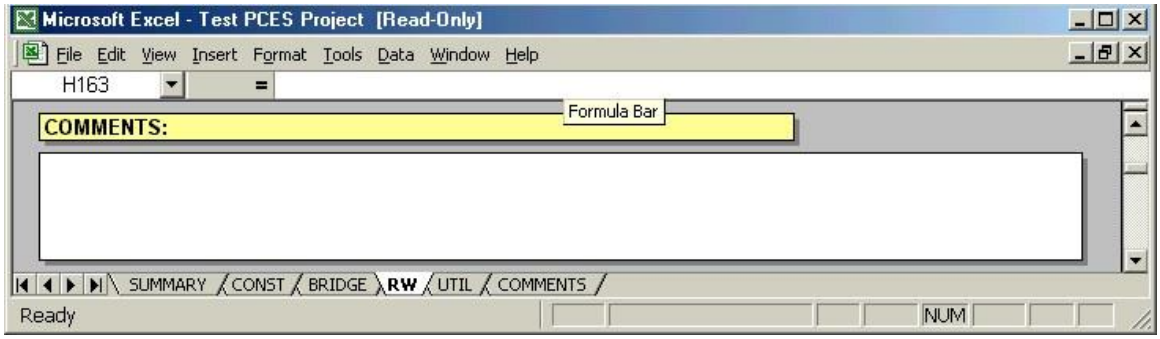


Note:	*Sub-Total Right of Way Costs are automatically computed based on data entered. This worksheet will pull the utilities cost from the Utilities worksheet only if the Utilities worksheet has been completed or RUMS selected on the Summary worksheet as the estimate source. The Sub-Total Right of Way Costs and Utility Costs are today's cost and are added together and multiplied by the inflation factor per year to the authorization year to create a total right of way cost.*



Comments

Comment box is provided for documentation purposes.

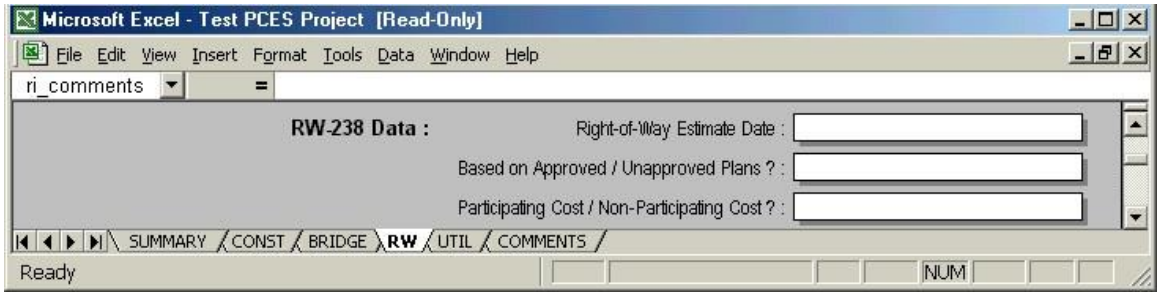


RW-238 Data

Right of way Estimate Date
User to enter date that data was entered in to Right of Way worksheet.

Based on Approved / Unapproved Plans
From drop-down menu the user shall select if the plans used for the estimate are approved or unapproved.

Participating Cost / Non-Participating Cost
From the drop-down menu the user shall select if the project has federal funding associated with Right of Way. If project does have federal funds for Right of Way the user is to select Participating Cost, if no federal funds is allocated to Right of Way the user is to select NonParticipating.



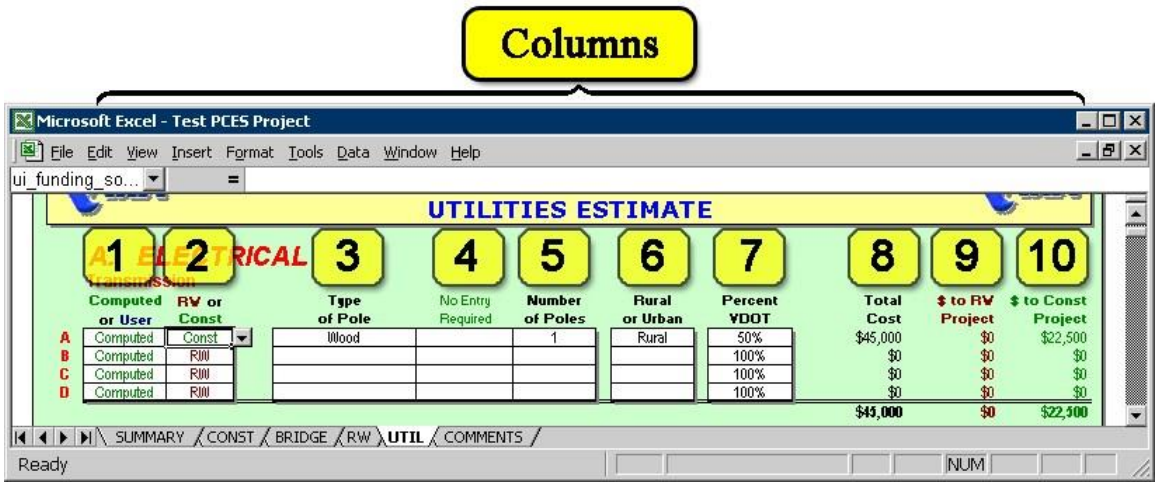
Utilities Worksheet

The purpose for the Utilities worksheet is to allow the user to create a utilities estimate for the utilities being impacted or having anticipated impacts. The worksheet has been created to allow the user to enter data for typical utilities impacted by projects. Unusual utility costs should be manually entered into the worksheet in the miscellaneous boxes at the bottom of the appropriate utility (i.e. electric, telephone, CATV, water, sanitary sewer, natural gas/propane, and petroleum) and in the correct box related to the costs (construction vs. Right of Way charges) with the exceptions being Cellular and Additional Costs. Cellular and Additional Costs are to be entered

as lump sum cost as they relate to the project. It is recommended the user provide documentation of the unusual utility costs on the “Comments” worksheet.

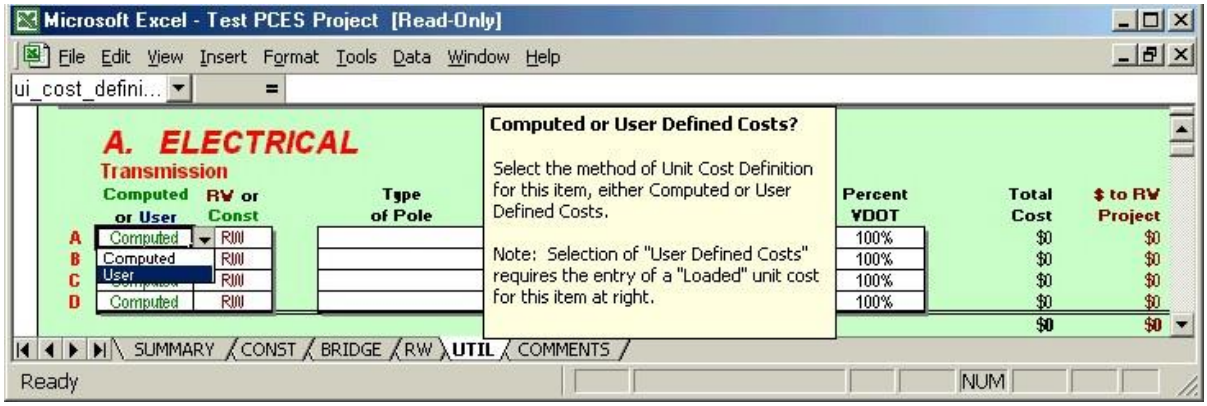
Utility data can be entered two ways in the PCES. The first avenue is to use the “Computed Costs” in the system. This method uses pre-determined unit costs based on data entered into the worksheet. The other method is to use “User Defined Costs”. This method allows the user to enter the unit costs based on known or historic unit costs. Directions are provided on the following pages for each method.

Because the worksheet has a similar set up for each type of utility, it will be easier to describe what is expected for each column (vertical). Any exceptions to this approach will be described in more detail.



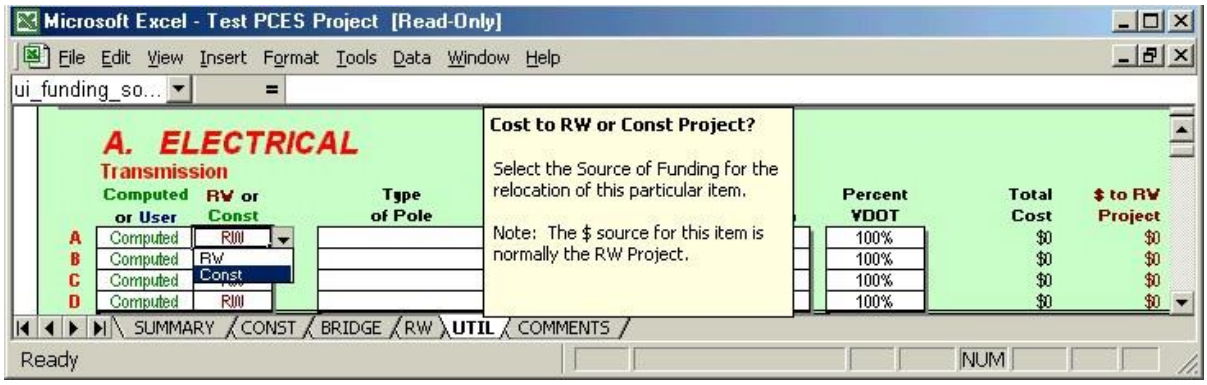
Column 1 (Computed or User)

Two methods of developing a cost are available, “Computed” and “User”. The user is to select how they want this particular utility cost computed by selecting the appropriate choice from the drop-down menu. To give the user more latitude, this worksheet has been developed to allow the user to use both methods of computing costs in the same utility section. For example the user may elect to use the “Computed” cost for wooden electrical transmission poles and the “User” cost for concrete/steel electrical transmission poles. The default is set for Computed.



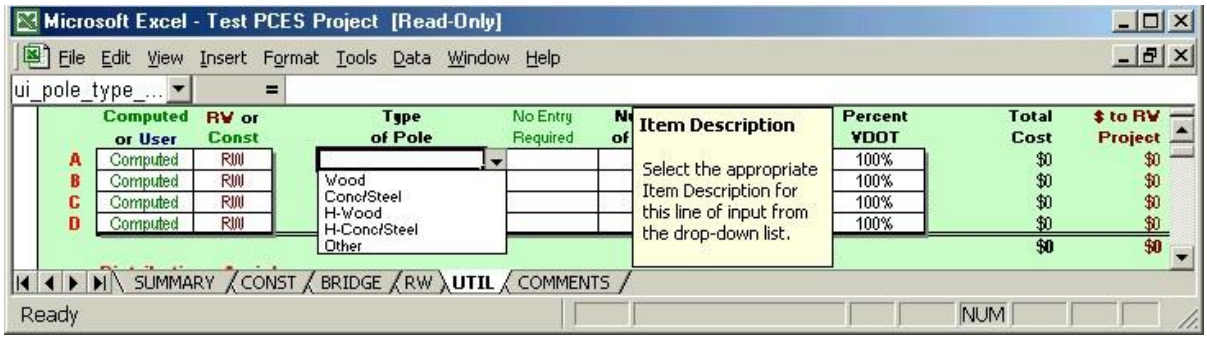
Column 2 (Right of Way or Construction)

This drop-down menu allows the user to select which phase of the project estimate this particular utility cost will be charged. The user is to select "RW" if cost associated with this utility are to be added to the Right of Way phase and "Const" if the costs are to be added to the construction phase. The default is set for "RW".



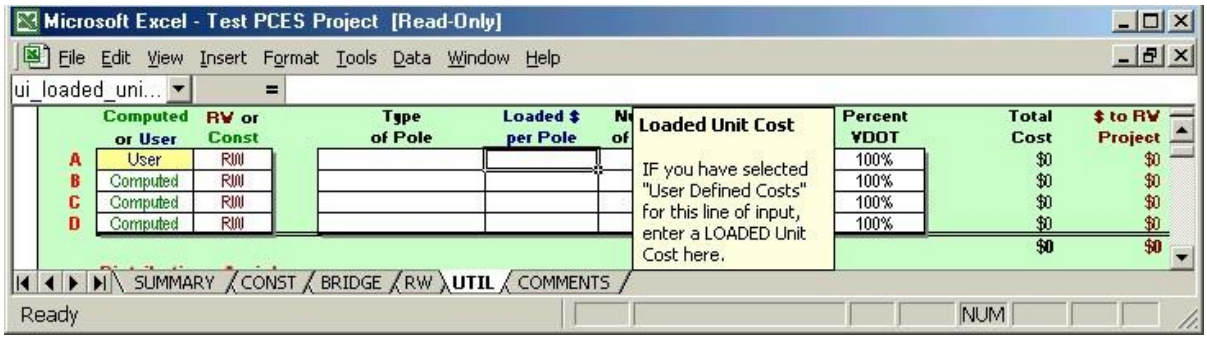
Column 3 (Description of Utility)

This column consists of a drop-down menu for a particular type or size and the menu choices vary depending on the utility. The user is to select the most appropriate choice.



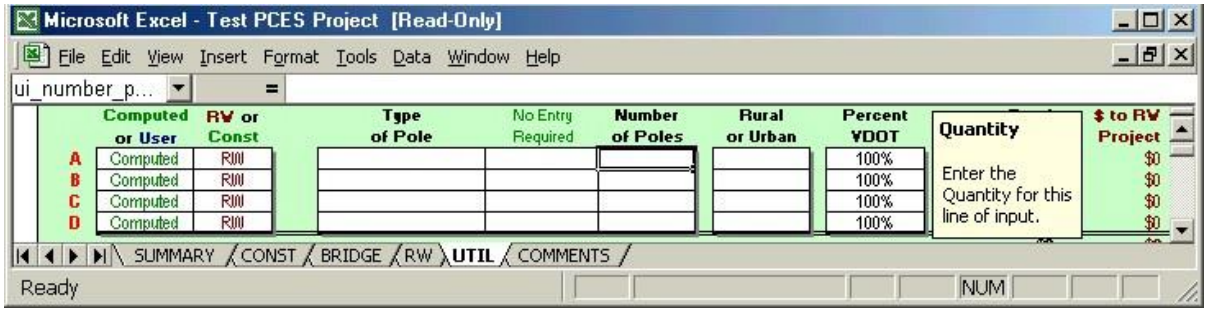
Column 4 (Cost per Unit)

This column will only allow the user to enter a unit cost when "User" is selected. The header for this column will change from "No Entry Required" to "Loaded $ per?" (Depending on the unit for that utility). Unit cost should be based on historic data or good judgment.



Column 5 (Unit Total)

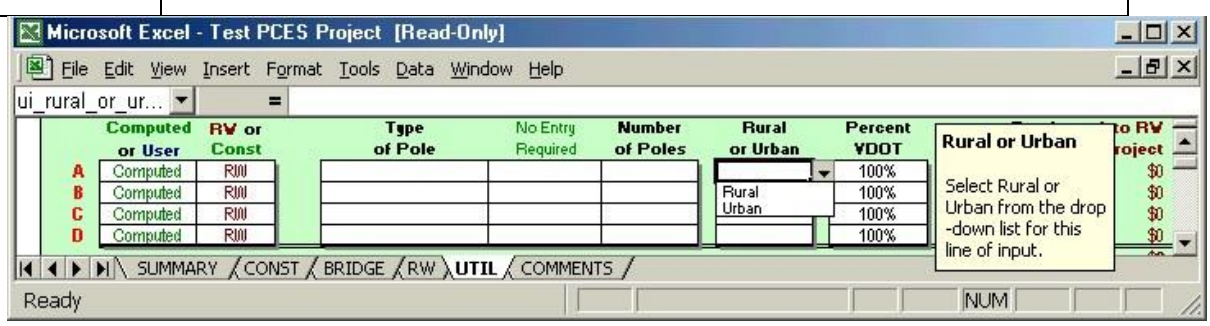
The user is to enter to the total number of units in this column.



Column 6 (Rural or Urban)

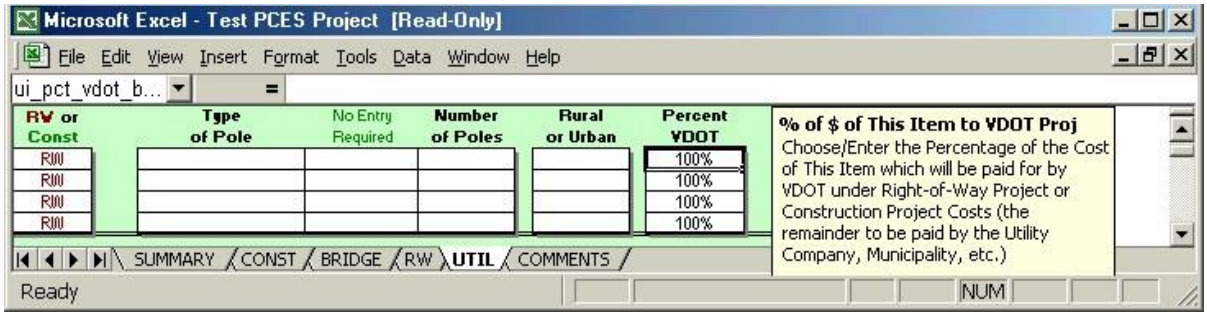
This column is only associated with the "Transmission" and "Distribution – Aerial" portions of the Electrical section of the worksheet. The user is to determine if the cost associated with these utilities should be based on urban or rural costs and select the appropriate choice from the pull down menu. This menu defaults to "Urban".

Note:	*This menu will only allow the user to select an option if "Computed" is the choice for computing cost.*



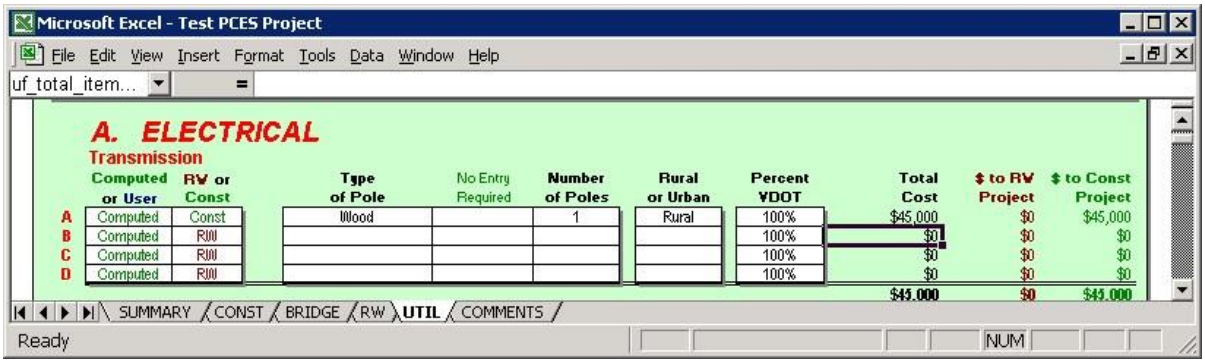
Column 7 (Percent VDOT)

This column allows the user to enter a percentage of the cost that will be charged to the project. The user is to manually enter the percentage. The costs will be charged to either Right of Way or Construction, depending on the selection in Column 2. Costs for a particular row cannot be split between Right of Way and Construction. Default percentage is 100%.



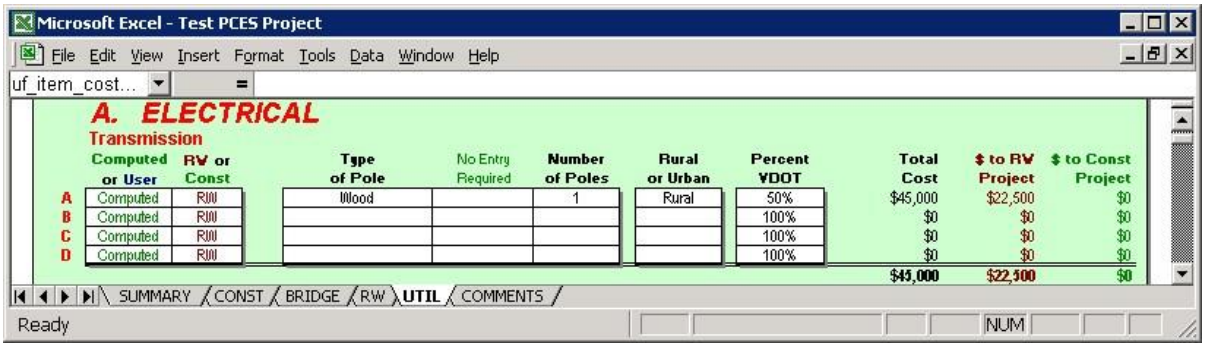
Column 8 (Total Cost)

This is the total cost automatically computed based on data entered for each individual utility row. A sub-total is computed for each type of utility (i.e. electrical transmission). A total cost of all sub-totals will automatically be computed for each utility section such as electrical, CATV, telephone, etc.



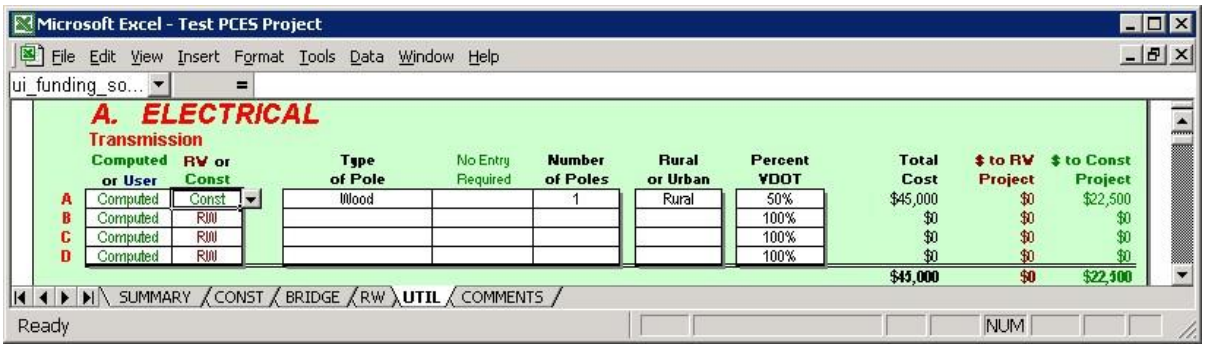
Column 9 ($ to RW project)

This is the cost associated with the Right of Way phase based on the percentage entered in column 7. This column will only show a cost if "RW" is the selected choice in column 2. A subtotal is computed for each type of utility (i.e. electrical transmission). A total cost all of subtotals will automatically be computed for each utility section such as electrical, CATV, telephone, etc.



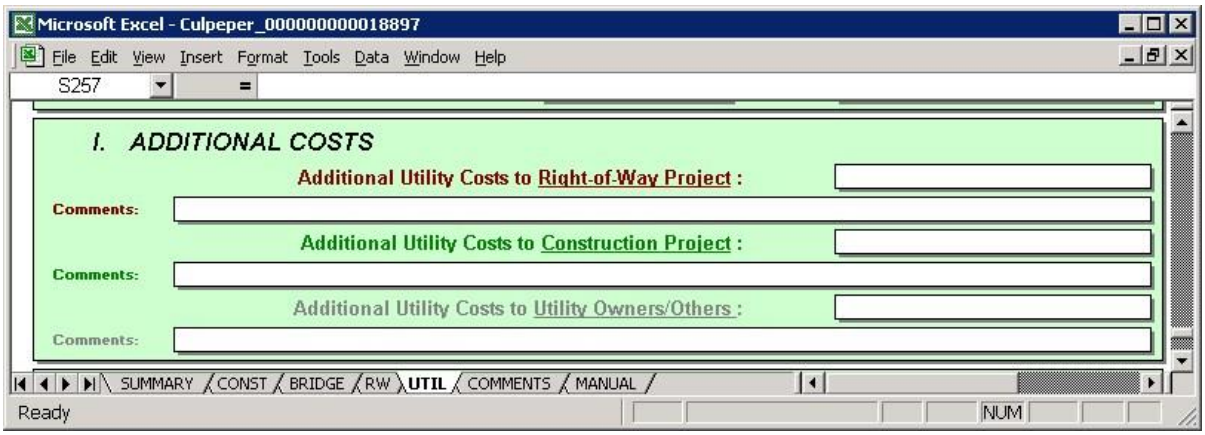
Column 10 ($ to Const. Project)

This is the cost associated with the Construction phase based on the percentage entered in column 7. This column will only show a cost if "Const" is the selected choice in column 2. A sub-total is computed for each type of utility (i.e. electrical transmission). A total cost of all subtotals will automatically be computed for each utility section such as electrical, CATV, telephone, etc.



Additional Costs

The user can add additional utility cost in the appropriate utility cost fields. These costs are to be cost that cannot be captured elsewhere on the utility worksheet. Be sure to add the additional cost in the appropriate fields so they will be computed correctly.



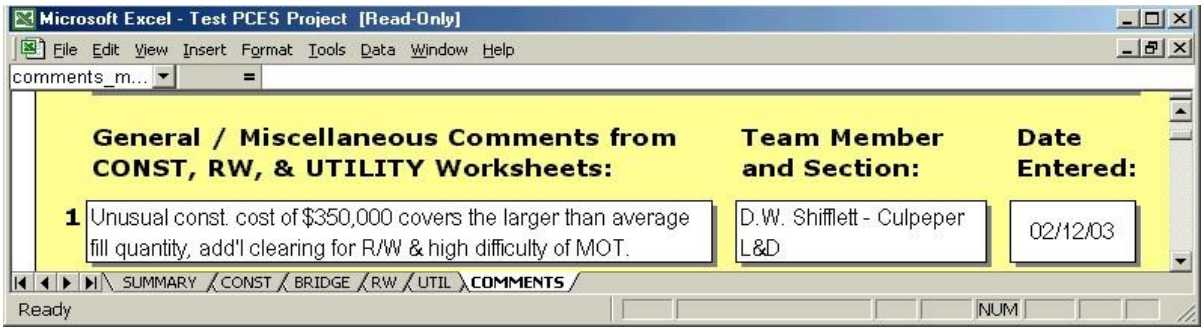
The utility subtotals for right of way cost, construction, and utility owner cost are all based on today's cost (no inflation applied), as is the Grand Total Utility Costs. The costs associated with each field will populate the appropriate fields in the other worksheets (i.e. utility cost associated with right of way will populate the utilities field of the right of way worksheet and utility cost for construction will populate the in-plan utilities field in the construction worksheet).

Microsoft Excel - Culpeper_000000000018897
File Edit View Insert Format Tools Data Window Help
ui_pct_vdot_b...
TOTAL UTILITY COST - RIGHT-OF-WAY PROJECT
$15,000
TOTAL UTILITY COST - CONSTRUCTION PROJECT
$78,000
TOTAL UTILITY COST - UTILITY OWNER / OTHERS
$0
GRAND TOTAL UTILITY COSTS
$93,000
SUMMARY CONST BRIDGE RW UTIL COMMENTS MANUAL
Edit
NUM

Comment Sheet

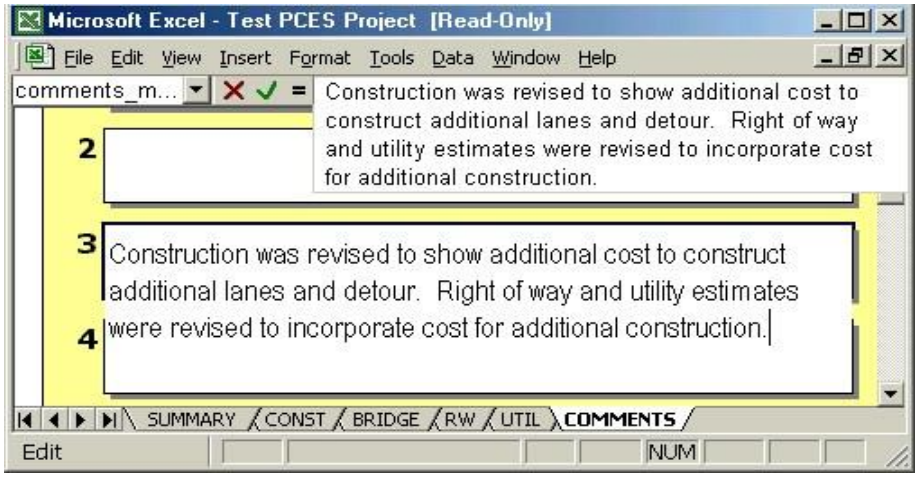
The comment sheet is provided for the users to provide documentation for any project related comments, estimate revision notes, comments related to unusual cost, large drainage structures, project descriptions, right of way and utility cost notes.

Anyone entering comments are requested to enter their name and section and the date entered so anyone viewing the workbook will see who provided the comments and when the comments were entered.



If additional lines are needed for the comment, continue to enter the comment in the same comment field. The field will expand.

Since the field will only show the first two lines in the comment field, the viewer can see all the comments in that field by either double-clicking the field with left mouse button or view the comment in the data entry field at the top of the worksheet.



The original comment sheet provides the user and viewer with 15 comment, name & section, and date fields. If additional fields are needed, please forward a copy of the PCES workbook to the PCES section. They will coordinate with the Information Technology Applications Division (ITAD) and return the workbook. Do not try to add more sheets.

Manual Worksheet

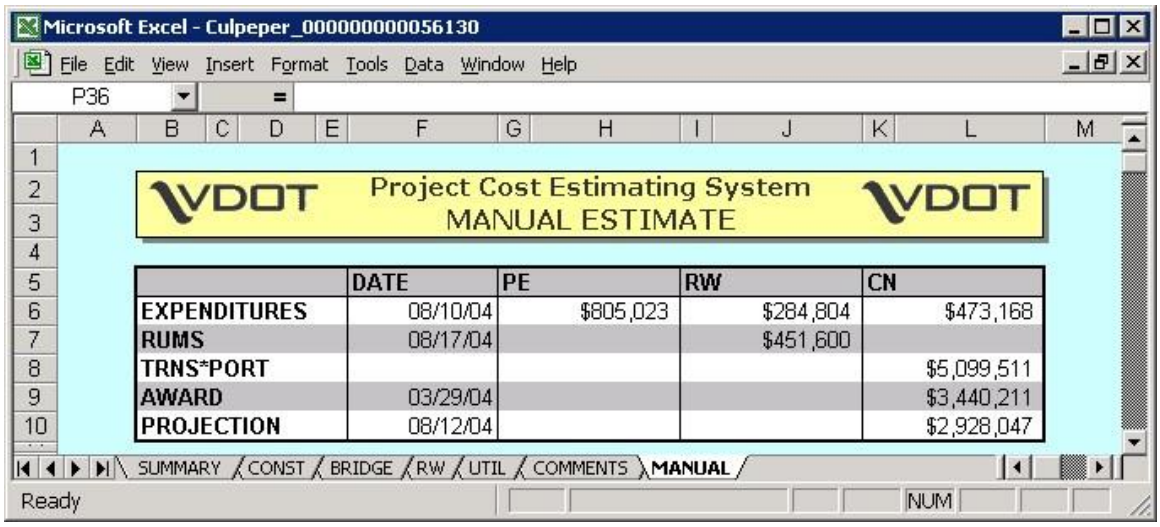
This allows a PM the ability to input a manual project estimate into PCES for projects that can't be developed from the construction, bridge, right of way and utility worksheets. This feature allows all project estimates to be captured in PCES.

The intent of the feature is not to just capture the total project estimate but to allow the user to enter estimates for each job number or phase AND to provide documentation as to how the estimates were developed. The documentation can be captured in different ways. First, each job number has a field to enter comments or documentation. Second, the user may elect to enter this information in the "Comments" worksheet. Last, if documentation has been created in a separate file, the user can upload the file through the PCES website under "Estimate Supporting Documents". If the last way is used, please provide the file name in the comment field so future users or people viewing the estimates can easily retrieve and view this document.

It is recommended the name of the user and the date be entered on the "Comments" worksheet for future reference.

Note:	*These fields will not automatically populate the job number breakdown on the website. The user is still required to enter this information.*

The first portion of the Manual worksheet shows data populated from other sources.



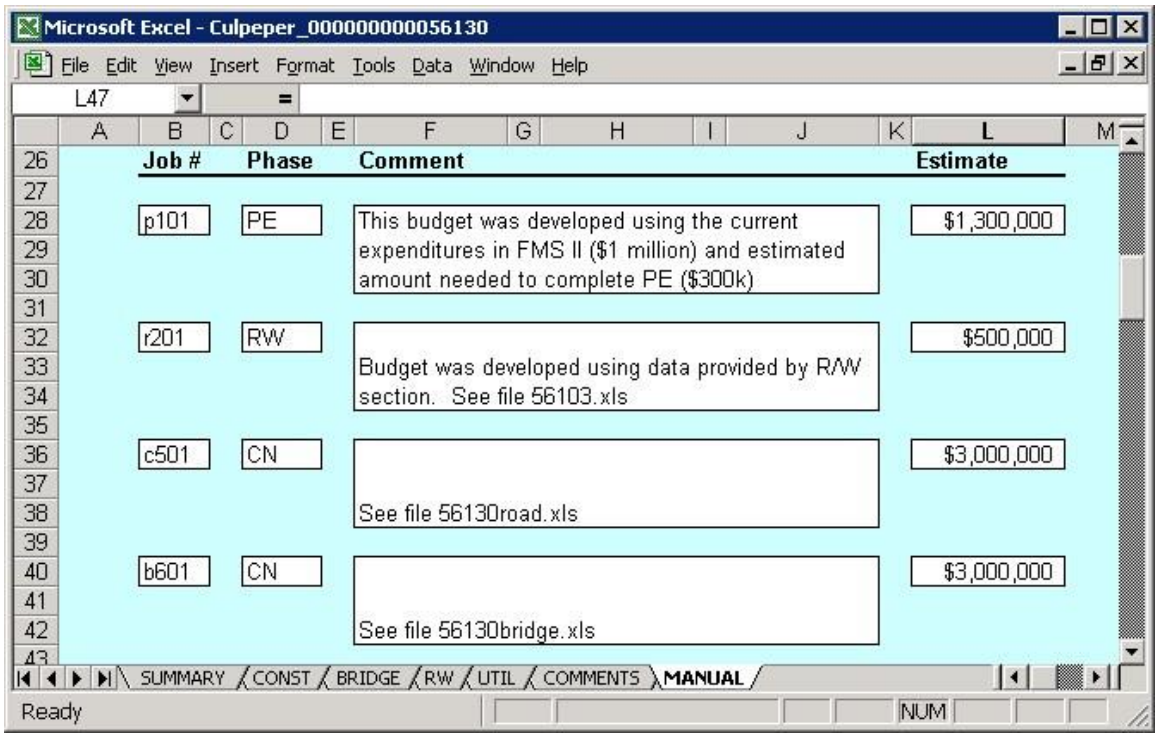
	DATE	PE	RW	CN
EXPENDITURES	08/10/04	$805,023	$284,804	$473,168
RUMS	08/17/04		$451,600	
TRNS*PORT				$5,099,511
AWARD	03/29/04			$3,440,211
PROJECTION	08/12/04			$2,928,047

The user can enter the individual job information in the fields shown below (job number, phase, comment, and estimate). The worksheet can accommodate up to 18 different job numbers for a given project.

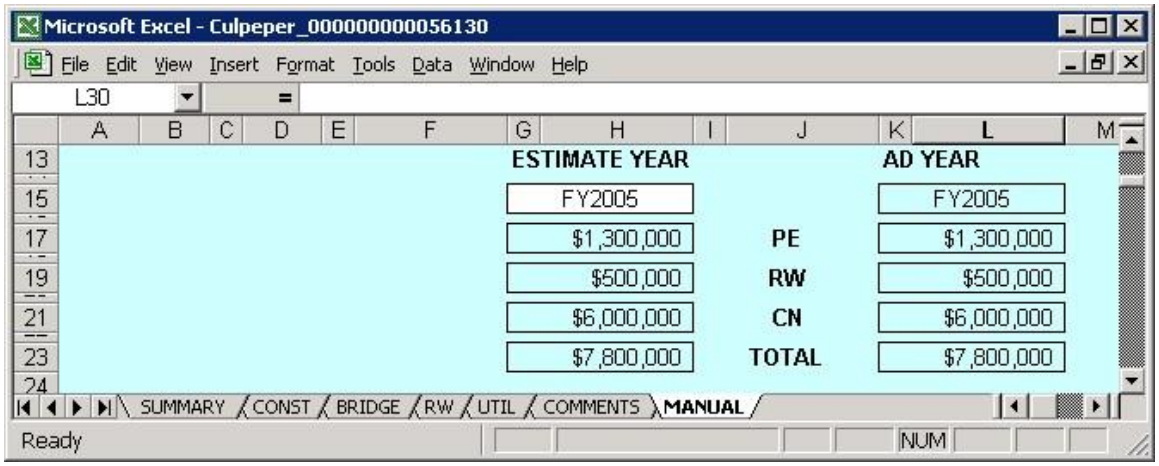
The data for the *job number* field is to be entered using four characters (i.e. P101, R201, C501, and B601).

The *phase* field has a pull down menu to allow the user to select the appropriate phase for the estimate (i.e. PE, RW, and CN).

The *comment* field will allow the user to enter comments related to the job number.
The *estimate* field will allow the user to enter the dollar amount for the job number. Note: This information does not automatically populate the "split estimate" window on the PCES website.



The fields shown below are populated based on the information entered in the job number fields. The Ad Year fields will add all related phases together (PE, RW, and CN) to create a total for each phase. From that information a total project estimate will be created using the inflation factor, if applicable.



Appendix A - PCES Generated Project Costs

LANE MILE COSTS (1/1/18)

Bid Item Series	Description	Items Automatically Included in Lane Mile Cost or Calculated by PCES*	Excluded Items (costs must be added on CONST-MISC worksheet)
00000	Mobilization and Infrastructure	mobilization, surveying, clearing and grubbing, regular excavation , minor structure pipe excavation, geotextile fabric, select and backfill material, grading, bedding aggregate and erosion control stone, moderate shoulder widening, drop inlets, underdrains, drainage piping/associated work ≤ 60" dia. and manholes/paved ditches on urban projects	excessive excavation, rock excavation, excessive select material, borrow, box culverts(excavation, bedding, concrete/steel, etc.), Class 20 concrete/reinforcing steel, A3 concrete, elliptical pipe, piping and associated work ≥ 60" dia., and storm sewer work (drop inlets, manholes, paved ditches, underdrains, etc.) on rural projects
10000	Asphalt Paving	aggregates, sealcoating, liquid asphalt and asphalt concrete (full depth pavement items only)	overlay aggregate and asphalt (not full depth paving) and planing/milling
11000	Concrete Paving	entrances (urban projects only)	bridge approach slabs/reinforcing, saw cutting, shot blasting
13000	Incidental Items		Guardrail in excess of 5% of project length. and impact attenuators, permanent concrete barriers, retaining walls, soundwalls, detectable warning surfaces
14000	Removal		removal of concrete sidewalk, curb, gutter and paving items
22000	Fencing		fencing, bracing, gates
24000	Traffic Safety	allaying dust, barricades, signs, aggregate, channelizing devices, arrows, flagging, barrier service, truck mounted attenuators, warning lights	detours, law enforcement assistance

24400	Demolition and Adjustments		obscuring roadway, pavement demo, guardrail removal and reuse, adjustments to existing infrastructure, removal of drainage structures

Bid Item Series	Description	Items Automatically Included in Lane Mile Cost or Calculated by PCES*	Excluded Items (costs must be added on CONST-MISC worksheet)
25000	Field Office/Contract Items	field office	schedule/updates Partnering
26000	RipRap		riprap (grouted and non-grouted)
27000	Environmental	seeding, fertilizer, lime, stabilization mat, protective covering, diversion channels, dewatering basins/excavation, siltation control/fencing, geotextile fabric, filter barriers, and stone	topsoil, cofferdams, stormwater management construction/items, well closings, landscaping items (trees, bushes, shrubs, flowers), mulch for plantings, wetland mitigation, removal of landscaping items, underground storage tank removal
40000	Water and Sewer	supply and sanitary lines (input LF next to dia. on UTIL worksheet)	valves, boxes, hydrants, meters, asbestos, line and equipment per/ft cost removal, asbestos-containing material removal and connections to, manholes, encasement piping (indicate cost on UTIL worksheet under additional costs for water and sewer)
	Additional Utility Services	(input items on UTIL worksheet)	
50000	Signage	permanent (vertical support) sign panels and construction signs, posts, bases. OH, counter lever and Bridge Mount (input on the Signals Tab)	
51000 and 52000	Signals	electronics, electrical services, concrete foundations, poles, cables, hanger assembly, installation, signal heads, Temporary Signals (input no of new and modified intersections on the Signals Tab.)	

54000	Pavement Marking	pavement markings	
56000	Lighting	lights, poles, foundations, electrical service, conduit, trenching, electronics	
70000	Misc. Demolition/Clearing	Enter data/info on RW worksheet If applicable to RW	All misc. clearing/demo items not covered by RW
Bid Item Series	**Description**	**Items Automatically Included in Lane Mile Cost or Calculated by PCES***	**Excluded Items (costs must be added on CONST-MISC worksheet)**

- Watch for excessive item quantities

BRIDGE COSTS (1/1/18)

Bid Item Series	Description	Web Based Bridge Application SF Cost	Excluded Items (costs must be added on MISC. COST as applicable for each bridge)
60000	Bridges	Pre-cast and cast-in-place concrete (non-repair), deck grooving, temporary structures; expansion material, demolition/disposal of existing bridges (input length/width/), Structure-excavation, Piling (steel or pre-cast), Abutments, A3 concrete, re-bar (plain or epoxy), Approach Slabs, coffer dams, temporary work bridge, standard beams of steel or precast, joint work, standard railings. A-4 concrete deck drainage.	Cathodic ray protection, scour protection on existing structures, expansion joint removal, paint removal, stairways, observation posts, special or custom railings, operable bridges and all associated equipment work, rip rap, lighting, sound walls, painting, non-normal bridge features.
67900	N.S. Dismantling & remove exist. structure	Removal and disposal of all bridge elements to include deck piers, abutments, working over land including type B structures.	Environmental issues & permit work restrictions when working over water, access restrictions due to location, asbestos abatement, working over heavily trafficked roadway.

Appendix B – Summary of Changes from Version 2.1 to 2.3

PCES v2.3 Cost Factor Changes

The following cost factor changes have been made to the PCES Construction/PE/ Bridge worksheet. These factors will be in place when the PCES worksheet is downloaded from the PCES website. ***In order for these factors to become effective, a new PCES worksheet should be downloaded from the system and saved.***

District Factors

District factors for the following districts have been increased. The rest will remain at their current factor. Fredericksburg remained the district used as the baseline.

- Salem
- Hampton Roads
- Culpeper
- Staunton

Flush Median

This option has been removed from the worksheet. If the project has a flush median, please treat it as an additional lane.

Interstate Cost Factors

These cost factors have been adjusted to increase the lane mile cost.

Surface Only and Surface Plus Cost Factors

These factors have been reduced to more closely match the data collected for Rural Rustic Roads projects. These factors should typically be applied to projects not using plant mix.

Lane Mile Cost Factors

These factors have been adjusted (increased) for all geometric standards to more closely reflect the data collected. This applies to projects with curb and gutter as well as shoulders. This also includes the additional lane cost factors.

Feature Cost Factors

The following features have been adjusted (increased).

- Raised Median
- Curb & Gutter
- Sidewalk
- Crossover
- Right Turn Lane

- Left Turn Lane
- New Signal Costs (2-lane and 4-lane)
- Adjust Existing Signal Costs (2-lane and 4-lane)

Appendix C – Summary of Changes from Version 2.3 to 2.4

PCES v.2.4 CHANGES TO THE WEBSITE

Search Page

- New expired estimate and SYP logic:
  - Projects selected are in current LIVE or current working iSYP scenario (Programming Division to determine project category) ○ Excludes district-wide and budget line items ○ "Expired" definition expanded to include estimates older than 90 days old as well as estimates where expenditures exceed the estimates
- The reason for the expired status is now shown when you mouse over the estimate total column and is also shown on exported report.
- The exported listing no longer includes the "HR Planning" data. Instead, it now includes the estimate date, version and expiration reason.
- New numerical selection for searching

Project Information and Estimates

- Slightly different format
- Only the currently selected estimate is shown (click on "(+) Show All Estimates" just below "Estimate History" to show the estimates in phases).
- TRNS*PORT and RUMS estimates data has been compressed to take up less room (no change in data content).
- The "Pending Approval" section is hidden by default but will be displayed if there are pending estimates.
- The PD-1 process is now linked with the Project Pool (dependent on the release of the Pool- working feature may be delayed).

PCES v.2.4 CHANGES TO THE WORKBOOK Summary

Page

- The Advertisement and Estimate years now default to 2007

CONST-1 Page

- The choices for "Total Length- Raised Median (ft.)" and "Number of Crossovers (Divided Highways ONLY)" are now always visible.

CONST-2 Page

- The choices for "Total Length- Raised Median (ft.)" and "Number of Crossovers (Divided Highways ONLY)" are now always visible.
- A box/text has been added so that the user may manually change the lane width (as on the CONST-1 Page).

Values and Cost Factors

- The lane mile values changed according to the following GS types:

GS-1	+3%
GS-2	+13%
GS-3	+3%
GS-4	+3%
GS-5	+13%
GS-6	+13%
GS-7	+3%
GS-8	+13%
Interstate	+23%

- New "Non-Construction" filter.
- All search filters are now visible (binoculars removed).
- New traffic signals and adjusted signal values increased by 3%.
- District cost factors are adjusted to the following:

Bristol	.85
Salem	.95
Lynchburg	.90
Richmond	1.05
Hampton Roads	1.20
Fredericksburg	1.00

Culpeper	1.00
Staunton	1.00
Northern Virginia	1.05

- The cost of left turn lanes increased by 13%.
- The default terrain was corrected to "Gently Rolling" and the following terrain factors are adjusted to the values indicated below:

Gently Rolling	0.00
Rolling	0.10
Light Mountainous	0.15

- Bridge removal costs increased by 3%
- The base value for the raised median is now $37.44/LF.
- The base value for curb and gutter is now $48.30/LF.
- The base value for a 4' sidewalk is now $23.94/LF.
- The base value per crossover is now $86,520 each.
- The base value per right turn lane is now $43,260 each.
- The base bridge cost is now $70,918 and $105/SF.
- The bridge formula has been corrected to include the following values relative to the base cost of the bridge:

<$500,000 additional $25,750 and +5% $500,000-$2,000,000 additional $41,200 and +2%

>$2,000,000 additional $61,800 and +1%

Appendix D– Summary of Changes from Version 2.4 to 2.41

PCES v.2.41 CHANGES TO THE WEBSITE

1. Project Page – TRNS*PORT Estimate area modifications
    a. Error message conveyed/no TRNS*PORT estimate when UPC number is Embedded in more than one prime project number in TRNS*PORT
    b. Prime project number is displayed
    c. Date of last L&D estimate is displayed

d. Bridge Construction and Road Construction work estimates are separated and subtotaled

e. The categories for Contract Requirements, State Police, State Forces, and Railroad totals which mirror those in TRNS*PORT are now indicated

PCES v.2.41 CHANGES TO THE WORKBOOK

1. Version name was changed from 2.4 to 2.41
2. SUMMARY Worksheet – Ad Year choices are now limited to the current fiscal year and beyond
3. SUMMARY Worksheet – Estimate Year is now fixed to the current fiscal year
4. Inflation Rate – 12.58% is the current compounded inflation rate for FY 2008. This % incorporates the 2007 rate. This was required to maintain the same dollar value of your estimate when the fiscal year changed. It is anticipated that, when new inflation rates are established by the Financial Division later this year, the 12.58% and any adjustments made to it will be absorbed into PCES' project workbook value tables and the inflation rate will be set to "0%" for the current fiscal year.

Appendix E– Summary of Changes from Version 2.41 to 2.5

PCES v.2.5 CHANGES TO THE WORKBOOK

1. All lane mile, bridge square foot, traffic signal and other related cost tables have been updated.
2. The cost for left turn lanes has been changed. The results will be that PCES will generate a lower cost for this feature.
3. The Construction Engineering (CE) cost table for roadways has been updated.
4. Inflation factors have been updated. Inflation will not be added to the cost estimate if it goes to advertisement in the current fiscal year, only for future fiscal years.
5. On the right of way sheets the range of values has been increased for residential and agricultural zoned property.
6. Also on the right of way sheet the range of allowable charges for damages and administrative settlements has been increased.
7. On the utility sheet, the system generated cost for overhead power lines and for sanitary sewer lines have been increased.
8. On the bridge sheet, the calculation for PE cost has been changed. PE cost will increase from that generated by the previous version of PCES.

Appendix F– Summary of Changes from Version 2.5 to 2.51

PCES v.2.51 CHANGES TO THE WORKBOOK

1. Version name changed from 2.5 to 2.51
2. Added Bike and Pedestrian facilities to the workbook on the Construction 1, Construction 2, and the Bridge sheets.

Appendix G Summary of Changes from Version 2.51 to 2.53

PCES v.2.53 CHANGES TO THE WORKBOOK

1. Version name changed from 2.51 to 2.53
2. The Construction End Year Validation message was added to the Summary worksheet.

Appendix H Summary of Changes from Version 2.53 to 2.6

PCES v.2.6 CHANGES TO THE WORKBOOK

1. Version name changed from 2.53 to 2.6
2. All lane mile, bridge square foot, traffic signal, curb and gutter, median, sidewalk, crossover, turn lane, utilities and other related cost tables have been updated.
3. The following District Cost Factors changed:
    a. Bristol- from .85 to .90
    b. Lynchburg- from .90 to 1.0
    c. Hampton Roads- from 1.2 to 1.25
    d. Culpeper- from 1.0 to 1.1
    e. Staunton- from 1.0 to .95
    f. Northern Virginia- from 1.05 to 1.2
4. Inflation factors were updated.

Appendix I Summary of Changes from Version 2.6 to 2.61

PCES v.2.61 CHANGES TO THE WORKBOOK

1. Version name changed from 2.6 to 2.61
2. Added Traffic Tab worksheet
3. Eliminated New and Modified signal boxes from Construction 1.

Appendix J Summary of Changes from Version 2.61 to 2.62

PCES v.2.62 CHANGES TO THE WORKBOOK

1. Version name changed from 2.61 to 2.62
2. Due to the current bidding climate/reduction in costs for numerous bid items, the 4.2% inflation for projected for FY2010 has not been "absorbed" into PCES' construction value. The summary of changes to each estimate phase from v2.61 to v2.62 is as follows:

   PE Estimate

   A. PCES-generated – will change if CN estimate has changed

   B. Manual – no change

   RW Estimate

   A. PCES-generated – will change only if costs from the Utilities worksheet are charged to RW instead of CN

   B. RUMS extraction – no change

   C. Manual – no change

   CN Estimate

   A. PCES-generated – an approximate 4.2% decrease

   B. TRNS*PORT-generated estimate – no change

   C. Manual – no change

Appendix K Summary of Changes from Version 2.62 to 2.7

PCES v.2.62 CHANGES TO THE WORKBOOK

1. Version name changed from 2.62 to 2.7
2. The statewide cost of building a GS-5 standard roadway was reduced by 10%
3. The following District Cost Factors changed

A. Bristol - from .90 to .95

B. Salem - from .95 to .90

C. Hampton Roads - from 1.25 to 1.10

D. Culpeper - from 1.10 to .90

E. Staunton - from .95 to .90

4. The cost of water line generated on the utilities tab was reduced by 14%
5. Inflation factors were updated.

Appendix L Summary of Changes from Version 2.7 to 2.91

PCES v2.7-2.91

1. Versions 2.7-2.91 dealt with inflation costs in July 1, and December 1 of the fiscal year

2. July updates reflected the addition of any cost to the PCES base if the December inflation called for inflation during the ad year.

Appendix M Summary of Changes from Version 2.91 to 2.94

PCES v2.93 (November 1, 2012)

1. Version name changed from v2.91 to v2.93.

2. Added a tab to the Constr. 1 sheet that will allow a Project Manager to choose if a project is a Maintenance project (such as regional guardrail, overlay, typically projects that are in the system for a short time before they are advertised) it would not add inflation to a project if the estimate and the project ad were in the same year. These projects usually have a set amount of money and inflation would not be calculated. (v. 2.92)

3. Revised the Bridge sheet to allow a space to write in the Federal Structure I.D. Number. Also added three additional areas to write in comments for Misc. Cost, CE, and PE. (v 2.93)

4. Revised 2.93 to 2.94 to reflect new inflation factors. (December 2012)

Appendix N Summary of Changes from Version 2.94 to 3.1

PCES v2.94 (July 1, 2013 and Dec. 1, 2013)

1. Version name changed from v2.94 to v3.0.
2. Added inflation to base cost factors. (July 1, 2013)
3. Revised 3.0 to 3.1 to reflect new inflation factors. (December 2013)

Appendix O Summary of Changes from Version 3.1 to 4.1

PCES v3.0 (July 1, 2014 and Dec. 1, 2014)

1. Version name changed from v3.1 to v4.1.
2. Added inflation to base cost factors. (July 1, 2014)
3. Revised 4.0 to 4.1 to reflect new inflation factors. (December 2014)

Appendix P Summary of Changes from Version 4.1 to 5.0

PCES v5.0 (July 1,2015)

1. Version name changed from v4.1 to v5.0.
2. Added inflation to base cost factors. (July 1, 2015)
3. Revised 4.1 to 5.0 to Add Bridge Estimate Sheet.
4. Revised Bridge Tab.
5. Revised PCES Web site to include download of Bridge Estimate Sheet.

Appendix Q Summary of Changes from Version 5.0 to 6.0

PCES v6.0 (January 1, 2016)

1. Version name changed from v5.0 to v6.0.
2. Updated inflation factors for FY 16'. (October 1, 2015- December 31, 2015)
3. Revised Geometric Standards Base costs for GS-3, GS-[1][2], GS-[3][4], and GS-[5]

[1] . GS-3 was increased by 10%

[2] . GS-4 was increased by 5%

[3] . GS-6 was increased by 10%

[4] . GS-8 was increased by 10%

[5] . The District cost factor was increased by 10% for Richmond and Culpeper

Appendix R Summary of Changes from Version 6.0 to 6.1

PCES v6.1 (July 1, 2016)

1. Version name changed from v6.0 to v6.1.
2. Added inflation to base cost. (July 1, 2016)
3. Removed Bridge tab from Workbook
4. Added web based bridge application
5. Updated PCES web page to reflect bridge application addition

Appendix S Summary of Changes from Version 6.1 to 6.2

PCES v6.2 (January 1, 2017)

1. Version name changed from v6.1 to v6.2.
2. Updated Inflation Factors for FY 17' (October 1, 2016 – December 31, 2016)

Appendix T Summary of Changes from Version 6.2 to 7.0

PCES v7.0 (July 1, 2017)

1. Version name changed from v6.2 to v7.0.
2. Added Inflation to base cost for FY 18' (July 1, 2017)

Appendix U Summary of Changes from Version 7.0 to 7.1

PCES v7.1 (January 1, 2018)

1. Version name changed from v7.0 to v7.1.
2. Updated Inflation Factors for FY 17' (October 1, 2017 – December 31, 2017)
3. Updated the PCES User Guide

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