

New Comp Book Procedure



Denise Broom

Engineering CADD Office

CADD Applications Support

Melissa Hollis

**Specifications & Estimates
Office**

Basis of Estimates Coordinator

Outline

- ◆ Understanding Existing Comp Books
- ◆ Overview of Summary Boxes
- ◆ Review Summary Boxes- Demonstration
- ◆ Ongoing CADD Enhancements
- ◆ Implementation Issues
- ◆ Training Schedule
- ◆ Summary & Team Members
- ◆ Questions/Comments

Existing Comp Books

Pay Item & Quantity

◆ Plans

- Summary of Pay Items- quantity by component plans
- Summary box- **total quantity**
- Tabulation Sheet- **quantity by location**

◆ Comp Book

- Form for each Pay Item- **quantity by location**
- Calculation notes or other reference, i.e. shapes

Existing Comp Books

SUMMARY OF LITTER REMOVAL AND MOWING									
CONST. PHASE	DURATION (DAYS)	FREQUENCY (DAYS)	LITTER REMOVAL			MOWING			REMARKS
			CYCLES	AREA		CYCLES	AREA		
				AC/CYCLE	TOTAL (AC)		AC/CYCLE	TOTAL (AC)	
1	42	30	1	8.7	8.7	1	8.7	8.7	
2	98	30	3	7.3	21.9	3	7.3	21.9	
3	114	30	4	5.8	23.2	4	5.8	23.2	
4	68	30	2	5.8	11.6	2	5.8	11.6	
			TOTAL	P	65.4	TOTAL	P	65.4	
				F			F		

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION
AREA COMPUTATIONS

PAY ITEM NO. _____

PAY ITEM DESCRIPTION											
STATION TO STATION	TRAV. OR PAGE NO.	SIDE	DESIGN ORIGINAL				REMARKS	CONSTRUCTION FINAL			
			WIDTH	LENGTH	CURVE CORR(+/-)	AREA ()		WIDTH	LENGTH	AREA ()	



Overview of Summary Boxes

Goals:

- All information available to the bidder
 - Plans
 - Summary by location
- Easier for Designer- Updates/Revisions
- Easier for Construction- Final Estimates & “As-built” plans

Solution:

- One location- plans
- Linked Data

Summary Boxes

◆ Common Fields

- ✓ Location
- ✓ Area ID (if applicable)
- ✓ Pay Item Number
- ✓ Pay Item Description
- ✓ Quantity, by location
- ✓ Total Quantity for pay item
- ✓ Notes for Design and Construction

◆ Form Orientation

- ✓ Pay Item column
- ✓ Pay Item row

Pay Item
Number

Pay Boxes

SUMMARY OF QUANTITIES - BRIDGE 550136

SECTION	PAY ITEM NO.	DESCRIPTION	LOCATION	UNIT	QUANTITY		TOTAL		DESIGN NOTES	CONSTRUCTION REMARKS
					P	F	P	F		
FOUNDATION	0455 34 3	CONCRETE PILING PRESTRESSED (18" SQ.)	END BENT 1	LF	172.3				4 REQ'D	
			INT BENT 2		198.7			718	4 REQ'D	
			INT BENT 3		199.2				3 REQ'D	
			END BENT 4		208.1				4 REQ'D	
	0455143 3	TEST PILES (PRESTRESSED CONCRETE) (18"	END BENT 1	LF	60.0				1 REQ'D	
			INT BENT 2		65.0				1 REQ'D	
			INT BENT 3		180.0				2 REQ'D	
			END BENT 4		70.0				1 REQ'D	
	0455146	EMBEDDED	BENTS 1 - 4		5.0				1 PER	
	0530 1	RIPRAP	BEGIN BRIDGE ABUTMENT		15.06				30.1	
		END BRIDGE ABUTMENT		15.06						
0530 3 3	RIPRAP	BEGIN BRIDGE ABUTMENT		400.86				764.6		
		END BRIDGE ABUTMENT		363.69						
0530 74	BEDDING STONE	BEGIN BRIDGE ABUTMENT		142.75				272.3		
		END BRIDGE ABUTMENT		129.51						
SUBSTRUCTURE	0400 4 5	CONCRETE CLASS IV (SUBSTRUCTURE)			26.59					
					26.59			83.8		
					15.33					
					15.33					
	0415 1 5	REINFORCING STEEL (SUBSTRUCTURE)			3630					
					3630				11090	
				1915						
				1915						
	0400147	COMPOSITE NEOPRENE PADS		CF	6.26			6.3		
SUPERSTRUCTURE	0400 2 4	CONCRETE CLASS II (SUPERSTRUCTURE)	3 SPAN SUPERSTRUCTURE	CY	195.43			195.4		
	0415 1 4	REINFORCING STEEL (SUPERSTRUCTURE)	3 SPAN SUPERSTRUCTURE	LB	37211			37211		
	0400 9	BRIDGE DECK AND PLANING (BRIDGE DECK THK 8.5 OR GREATER)	APPROACH SLAB 1	SY	7.1					
			BRIDGE		586.7			601		
			APPROACH SLAB 2		7.1					
	0450 1 1	PRESTRESSED BEAM (TYPE II)	SPAN 1	LF	271.0				853	5 BEAMS @ 54'-3 1/2"
			SPAN 2		271.5					5 BEAMS @ 54'-2 1/2"
		SPAN 3		271.0						
	0458 1 11	BRIDGE DECK EXPANSION JOINT, NEW CONST. F&I	BEGIN					78		
			END							
APPROACH SLABS	0400 2 10	CONCRETE CLASS II (APPROACH SLABS)	APPROACH SLAB 1					95.1		
			APPROACH SLAB 2							
	0415 1 9	REINFORCING STEEL (APPROACH SLABS)	APPROACH SLAB 1					17650		
			APPROACH SLAB 2							
RAILING/BARRIERS	0450 70 2	ALUMINUM RAILINGS (DOUBLE RAIL)	STA. 85+00 TO 85+00	LF	225.0			225		
	0521 5 1	CONCRETE TRAFFIC RAILING BARRIER BRIDGE (32" F)	STA. 85+00 TO 85+00	LF	225.0			450		LT
			STA. 85+00 TO 85+00		225.0					RT
	0521 6 1	CONCRETE PARAPET (PEDESTRIAN/BICYCLE)	STA. 85+00 TO 85+00	LF	225.0			225		LT
LUMP SUM ITEMS	0110 3	STRUCTURE REMOVAL OF EXISTING	EXISTING BRIDGE	LS/SY	4563					
			EX. APPR. SLAB 1		800			6163		
			EX. APPR. SLAB 2		800					
	0455 18	PROTECTION OF EXISTING STRUCTURES		LS	1			1		
EARTHWORK	0120 1	EXCAVATION REGULAR	BEGIN ABUTMENT	CY	403			639		
			END ABUTMENT		236					

Location

Quantity

Notes for Design
& Construction

Totals

Area ID,
if needed

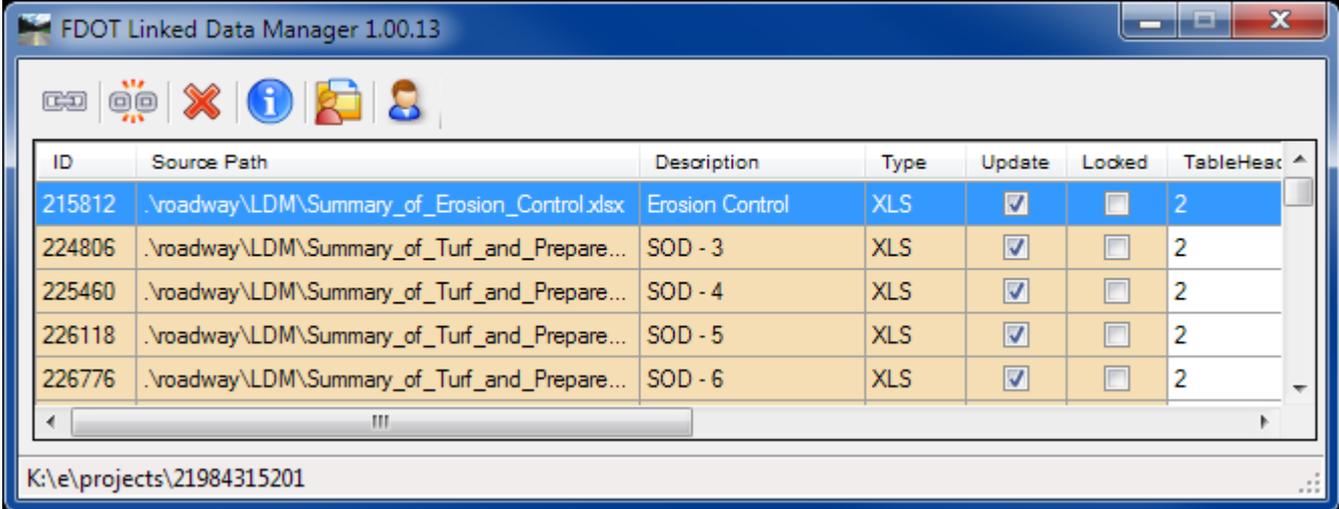
Demonstration

- ◆ Quantity Manager to Excel (pending LDM feature)
- ◆ Excel data to Plan sheets
- ◆ Updating Excel data (ex: location, quantity, or note changes)
- ◆ Updating Excel changes to plans (LDM features)
- ◆ Back Up Documentation

Demonstration

◆ Workflow

- ✓ Calculating quantity methods are not changing.
- ✓ Recommend using Quantity Manager to store quantities and generate report to upload quantities to TRNSPort. The Quantity Manager database will be used to help automate filling out the summary boxes.
- ✓ Quantities will be summarized on summary boxes in the plans using Excel files and Linked Data Manager (LDM).



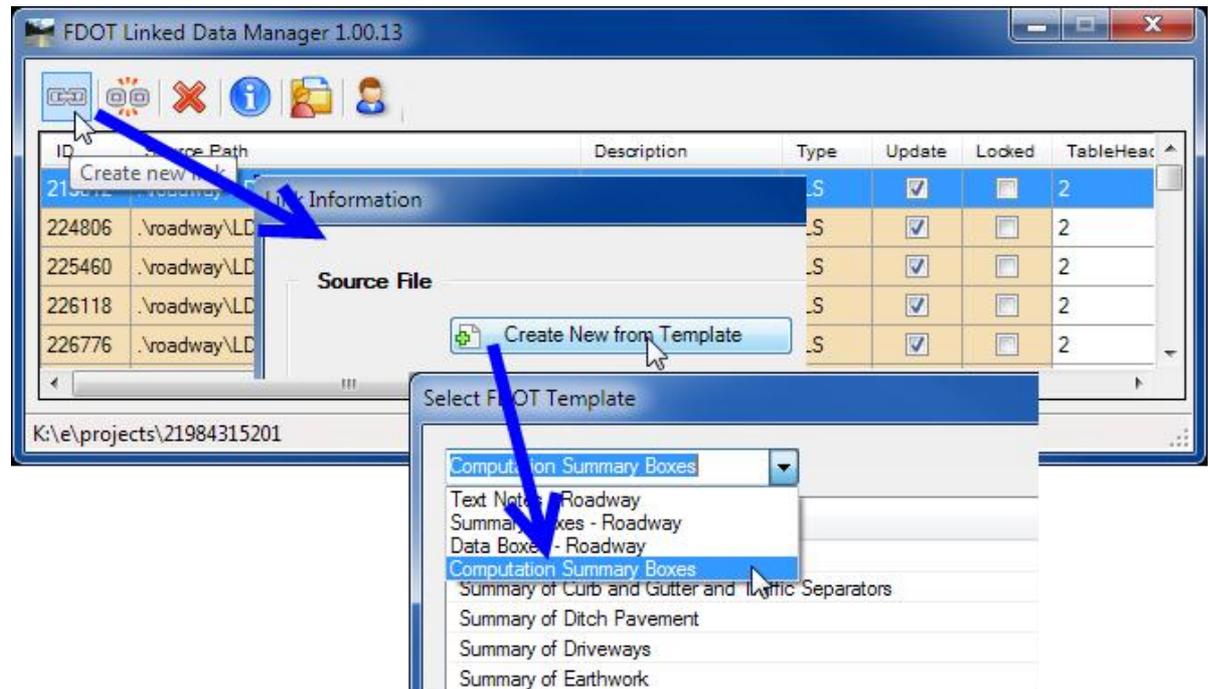
The screenshot shows the FDOT Linked Data Manager 1.00.13 application window. The window title is "FDOT Linked Data Manager 1.00.13". The interface includes a toolbar with icons for refresh, delete, help, and user management. Below the toolbar is a table with the following data:

ID	Source Path	Description	Type	Update	Locked	TableHeac
215812	.\roadway\LDM\Summary_of_Erosion_Control.xlsx	Erosion Control	XLS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2
224806	.\roadway\LDM\Summary_of_Turf_and_Prepare...	SOD - 3	XLS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2
225460	.\roadway\LDM\Summary_of_Turf_and_Prepare...	SOD - 4	XLS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2
226118	.\roadway\LDM\Summary_of_Turf_and_Prepare...	SOD - 5	XLS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2
226776	.\roadway\LDM\Summary_of_Turf_and_Prepare...	SOD - 6	XLS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2

The status bar at the bottom of the window displays the path: K:\e\projects\21984315201

Demonstration

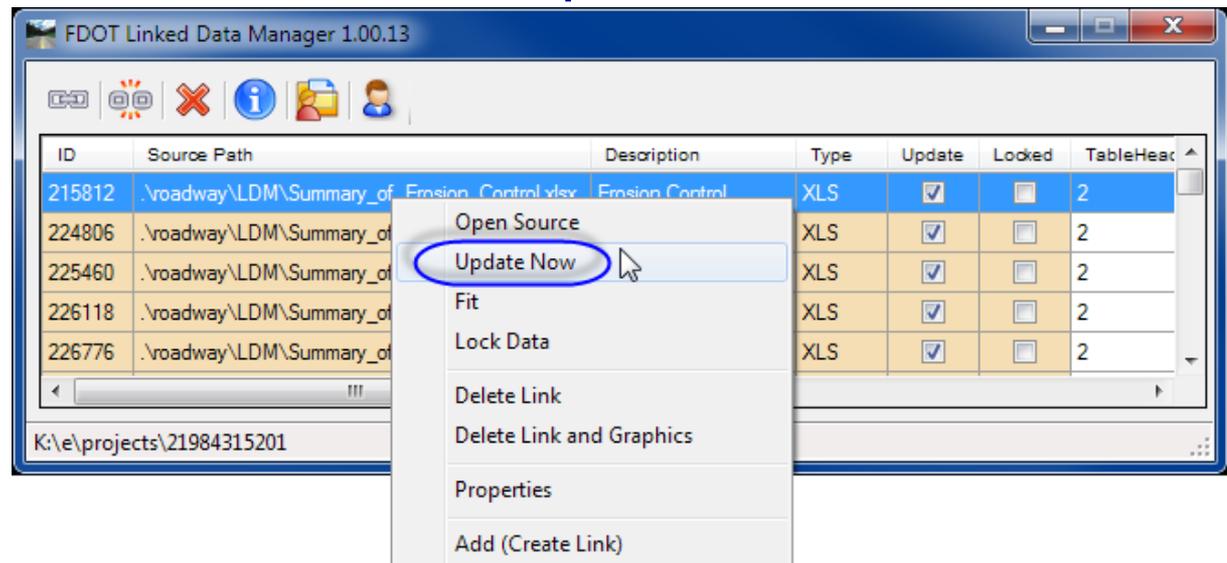
- ◆ Excel Files for Summary Boxes
 - ✓ Ready for use...
 - ✓ Will be delivered with the FDOTSS2 workspace released in July 2013.
 - ✓ Can create blank spreadsheet using LDM templates.



Demonstration

◆ Excel Files for Summary Boxes

- ✓ Creates a link between the Excel file and the MicroStation dgn file for easy updates.
- ✓ Make changes to spreadsheet, save and then right click on the link in the list and choose Update Now.
 - Note: this is a ONE WAY process. Changes made in MicroStation cannot be updated to Excel.



Demonstration

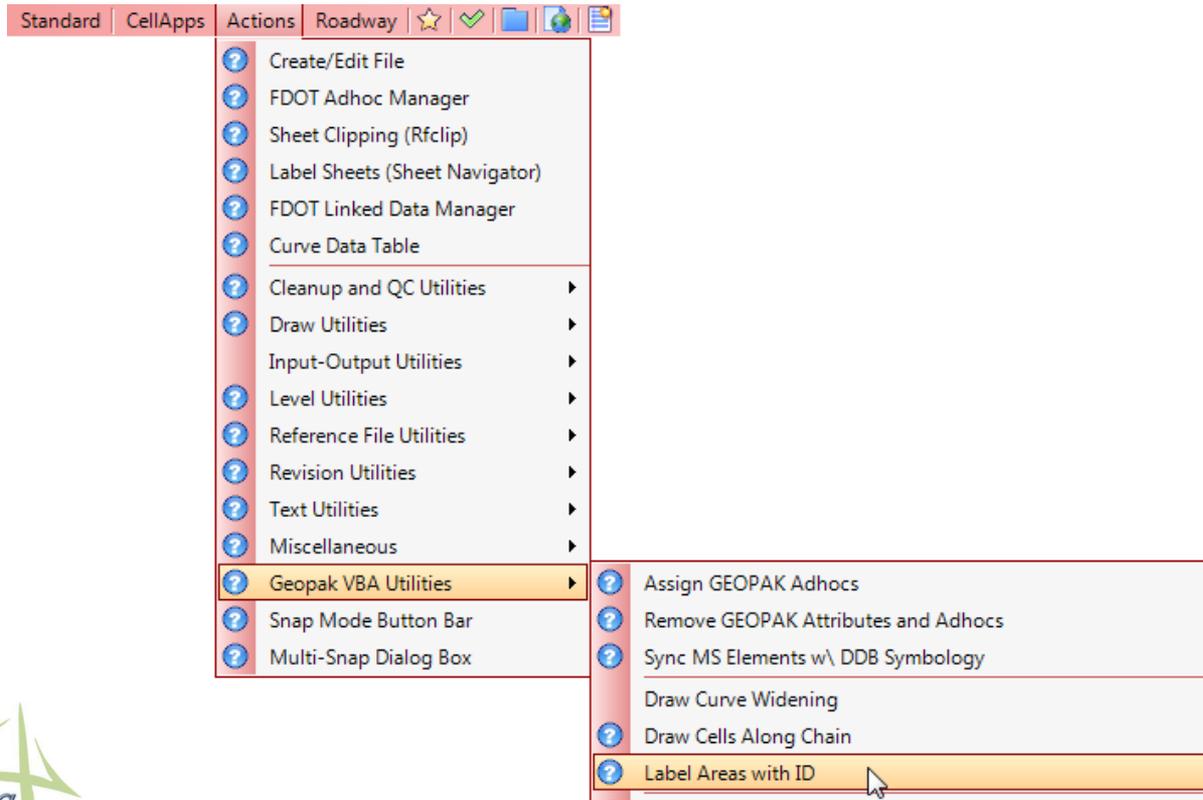
- ◆ Excel Files for Summary Boxes
 - ✓ Formatting in MicroStation is controlled through Excel files.
 - Columns and rows may be adjusted in Excel and change is reflected in MicroStation.
 - Columns may be deleted when not used. However do NOT delete the Construction Remarks or “F” columns.

Demonstration

◆ Back Up Documentation

✓ Graphic representations of the areas are no longer required as they are in the Comp Books.

- In the QTDSRD files, label the Area ID



Demonstration

◆ Back Up Documentation

- ✓ If the information to back up the quantity is in the GEOPAK gpk file, it is NOT required to be printed out.
- ✓ Formulas can be included in the Summary Boxes in the Design Notes column, if desired.
- ✓ Formulas or notes can be stored in the Back Up spreadsheet available in all of the Summary Box Excel files.
- ✓ All Excel files or other files (pdf or output from other programs) shall be kept in a folder named “Calculations” under the Discipline directory. I.E. Roadway or Structures, etc.

Review of Summary Boxes

◆ Benefits

✓ Overall reduction in pages

Example: D3 project

1000 Plan sheets

800 comp book pages = 39 plan sheets

Shapes: support information not included on most projects; retained with CADD files, per 2001 Memos

✓ Easier for Designers to load

Automated (LDM between Excel and Plans)

Fewer Errors with manual changes to plans & comp books

no duplication of effort

Pending: Automation between Quantity Manager and Excel sheets

✓ Easier for Construction to Update/Maintain quantity information

Quantity Data together with as-built plans

Review of Summary Boxes

◆ Steps to Implementation

- ✓ New Summary Boxes (Excel files available now)
- ✓ LDM available now (Excel to plans link)
- ✓ Quantity Manager to Excel (CADD Enhancement, available fall 2013)
- ✓ Coordinate Implementation (Joint Estimates/Design Bulletin)
 - Schedule, including Training and Software
 - Updates to manuals and handbooks
 - Instructions for LS, DB, and other types of projects/contracts

Implementation Issues

◆ Schedule

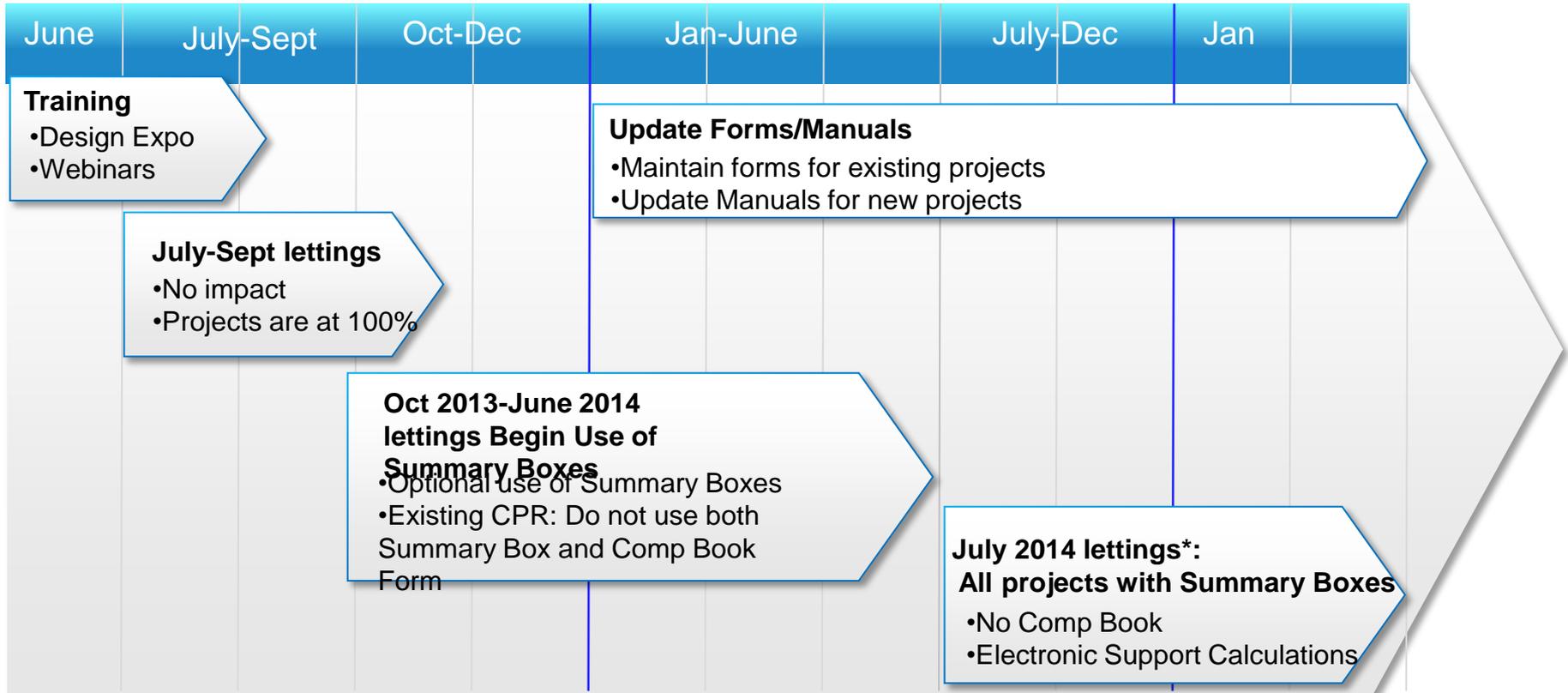
- ✓ Training
- ✓ CADD Software Updates
- ✓ Elimination of Comp Books

Proposed Schedule*

2013

2014

2015



*Subject to change

The optional use of Summary Boxes may be extended (delayed required use), subject to availability of additional CADD Software to improve transfer of data from Quantity Manager to Excel Worksheets.

Training Schedule- June 2013

- ◆ Design Expo
 - ✓ Initial Overview & Demonstration
 - ✓ Proposed Implementation Schedule

- ◆ CADD Webinar- CADD Users – WWW – June 19th
 - ✓ Improved MicroStation-Excel capabilities (LDM)
 - ✓ Reduced effort for quantity documentation

- ◆ Design Webinar- Project Managers, Estimators, Reviewers
 - ✓ Quantities by location
 - ✓ Quantity Calculations

- ◆ Construction Webinar- Construction Users, CEIs
 - ✓ Final Estimates Quantities
 - ✓ As Built plans/changes

CADD Enhancements

◆ Available Now:

- + Linked Data Manager (LDM) for Excel to plans
- + Summary Boxes for all pay items

◆ Coming Soon

- + LDM feature for Quantity Manager and Excel

Bulletin Issues

◆ Schedule

- ✓ Training
- ✓ CADD Enhancements

◆ Scope of Services

- ✓ Existing Projects: No net change in number of hours for
- ✓ Change Comp book requirement to Plan Summary with Quantity Calculations file.

◆ LS projects

- ✓ Minimal changes; summaries by location are still required .
- ✓ No pay item totals

Summary

- Easier for Bidders
 - One Location
 - Quantities Summarized by location
- ◆ Easier for Designers
 - Automated data transfer
 - Reduced duplication of effort
 - Easier Updates/Revisions
 - Reduced pages
- ◆ Easier for Construction- Final Estimates & “As-built” plans
 - Consolidated Final Estimates/As Built information

Comp Book-Plan Summary Team

- Construction
 - David Sadler- Director, Office Of Construction
 - Richard Massey- Final Estimates
 - Sherry Valdez- Final Estimates
 - Stanley Youmas- Final Estimates
- Design
 - Denise Broom- CADD Support
 - Jimmie Prow- CADD Support
 - Chester Henson- Roadway Design
 - Cheryl Hudson- Structures Design
- Estimates
 - Greg Davis- State Estimates Engineer
 - Missy Hollis- Basis of Estimates, Estimates Support
 - Allison Ivey- Preliminary Estimates

Comments/Questions

Denise Broom

Engineering CADD Office

CADD Support Specialist

Denise.Broom@dot.state.fl.us

850-245-1607

Melissa Hollis

Specifications and Estimates Office

Basis of Estimates Coordinator

Melissa.Hollis@dot.state.fl.us

850-414-4182