



Long Range Estimates for Non-Estimators



Presented by:

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Objective of this Session

To introduce you to the purpose,
features, and capabilities of the
Long Range Estimates system.

*This session is not intended to teach you the
intricate details of developing an LRE estimate.*

LRE New User Training – BT-05-0101



Today's Topics

- 1 • Estimating Systems
- 2 • LRE Basic Concepts
- 3 • LRE Pricing
- 4 • Demonstration
- 5 • Snapshots
- 6 • Communication



Why Do We Have LRE?

- LRE is the tool used for developing construction cost estimates for the 5-Year Work Program early in the development of the project.

Phase 52 PDC in Work Program should match the LRE estimate

Estimates | 2017-2-02-01 | Version 2 P

Plan: FM, % Factor, (New/Ex), Sequence, Check Bag, (Remov), (Print), (Options), (F)

Last Update: 4/8/2009 10:26:21 AM
By UserID: PM6010L

Sequence Subtotal	\$1,130,088.14	Latent
MOU Cost	\$110,000.00	
Mobilization Cost	\$100,283.52	Carry % G100
Project Sequence Total	\$1,340,371.66	
Project Unassigned Amount	\$0.00	
Non-Bid Amount	\$80,000.00	
Project Grand Total	\$1,403,862.57	

FDOT - Work Program Administration
Item Segment Phase

Requested Version: G1

Item/Segment: 230717 2 Status: 010 PRE-CONST_UNDERWAY Old Item

Desc: FIESTA WAY BRIDGE# 865735 OVER LAS OLAS

Trans System: 16 OFF STATE HWY SYS/OFF FED SYS Man Dist: 04 BOX

Begin Search At Phase: -- FP Seq: -- Project Total: 2,224

Ver	Phase	Seq	Year	Fund	Pgm	Amount	Total	All	Dstr
G1	3	9	01	2010	EB0H	00	395	395	1
5	2	01	2012	BRTZ	04	1,403,963	1,601,922	1	
5	6	01	2011	BRTZ	04	41,886	41,886	1	



Why do we have 2 estimating systems?



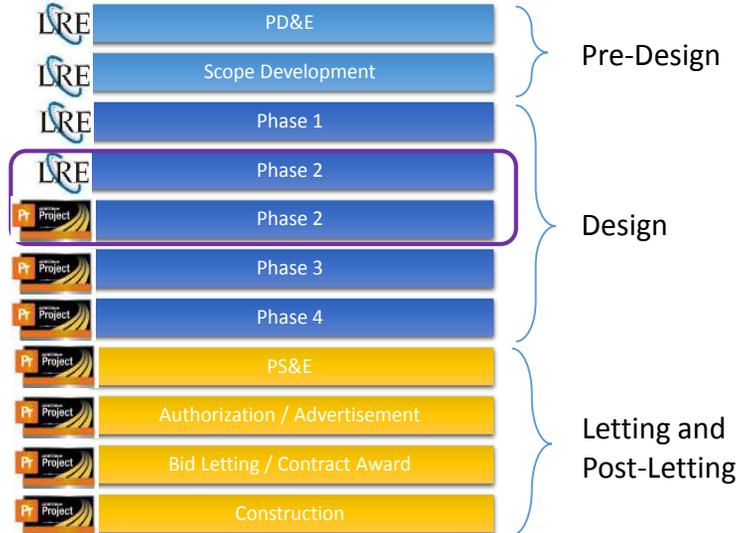
- Pre-Design estimate, used in establishing funds for future projects
- Generates pay items and quantities you can EXPECT to have, based on project characteristics (typical section, length, etc).



- Design estimate, used to develop the Department's Official Estimate, for bid comparison purposes
- Contains KNOWN pay items and quantities, based on complete (or nearly complete) plans.



Estimate Phase Progression

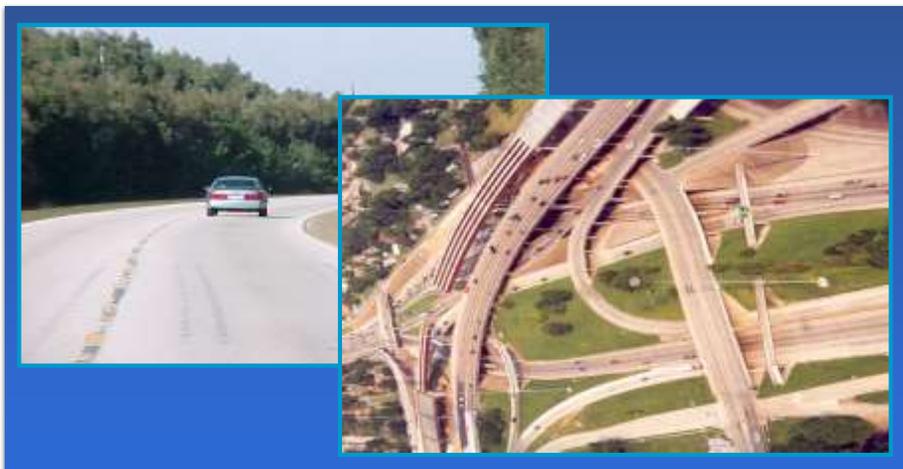


LRE Basics

- Project Structure
- Typical Sections
- Pay Items and Quantities
- Unit Prices and Price Refresh



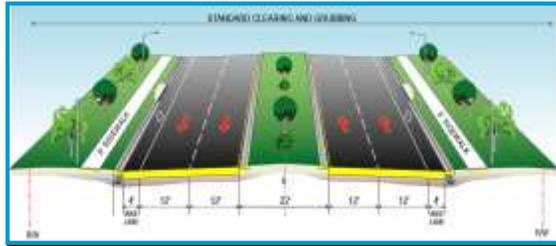
LRE Project Structure



Typical Sections

- 12 models are available in LRE, reflecting:

- **Construction type**
 - New Construction
 - Resurfacing
 - Widening
- **Median**
 - Divided
 - Undivided
- **Shoulder type**
 - Rural
 - Urban



- Default values representing typical section characteristics are pre-coded into the models. These values can be changed.



Pay Items and Quantities

- For the “key” components, typical section quantities are based on formulas:
 - Earthwork
 - Roadway
 - Median
 - Shoulder
- Characteristics are applied to a length of roadway to generate:
 - Pay items
 - Quantities
 - Unit prices

The screenshot shows a software interface with a table of calculated values. The table has columns for Description, Quantity, Unit Price, and Standard Amount. The data is as follows:

Description	Quantity	Unit Price	Standard Amount
Excavation	38,807.73 SF	\$18.20 C	\$703,144.53
Base	33,853.33 SF	\$17.25 C	\$582,867.26
Structural Course	4,828.08 Tn	\$14.75 M	\$71,159.80
Spread Rate	2,828.27 Tn	\$110.52 S	\$312,588.81
Concrete Placement	2.08	\$1.81 M	\$3.76



Pay Items and Quantities

Drainage					
Detail Total					\$1,269,715.97
		Add CD Items	Add X-Items	Add EX-Items	
Reset to Defaults		Calculate	Undo Calc	Return	Save
<input type="checkbox"/> Select All Items to Delete on This Page					
Del	Item #	Description	Quantity	Unit Price	Extended Amount
Component Detail Items					
1	<input type="checkbox"/> 400-2-2	CONC CLASS I	18.00	CY \$ 1,300.00 C	\$23,400.00
2	<input type="checkbox"/> 425-1-351	INLETS_CURB	36	EA \$ 4,551.62 M	\$163,858.32
3	<input type="checkbox"/> 425-1-451	INLETS_CURB	10	EA \$ 7,196.67 M	\$71,966.70
4	<input type="checkbox"/> 425-1-521	INLETS_DTB	5	EA \$ 4,006.09 C	\$20,030.45
5	<input type="checkbox"/> 425-2-41	MANHOLES_P-	5	EA \$ 3,773.30 S	\$18,866.50
6	<input type="checkbox"/> 430-171-101	PIPE_CULV.OP	2,648.00	LF \$ 73.11 M	\$193,595.28
7	<input type="checkbox"/> 430-171-103	PIPE_CULV.OP	5,000.00	LF \$ 150.02 M	\$750,100.00
8	<input type="checkbox"/> 430-172-102	PIPE_CULV.OP	240.00	LF \$ 113.04 S	\$27,129.60
9	<input type="checkbox"/> 570-1-2	PERFORMANCE	304.00	SY \$ 2.53 C	\$769.12
		Add CD Items	Add X-Items	Add EX-Items	
Reset to Defaults		Calculate	Undo Calc	Return	Save



Bridge Component

- 2 methods of estimating bridges in LRE:
 - Cost-per-Square-Foot
 - Bridge Item Details
- Designed to work with the common bridge designs (the "90%"):



Superstructures	Substructures	Foundations
FL I-Beam	Pile Bents	Prestressed Square Piles (18" & 24")
FL U-Beam	Drilled Shaft Bents	Drilled Shafts (48" & 60")
Slab (Cast in Place)	Multi Column	Steel Piling (14 x 89 and 14 x 117)
Steel Box	Hammerhead	
Steel Plate Girder		



Bridge Component

- For detailed Estimate, user input includes:
 - Over Land / Water
 - Bridge typical section information
 - Rural/Urban, Flush or Raised SW, Railings, etc,
 - Superstructure, Substructure, and Foundation types
 - Segment lengths and average heights
 - Number of intermediate supports
- LRE generates:
 - Reference data (design load totals)
 - Average span length & total length
 - Average pile length
 - Pay items, quantities, unit prices

Bridge Detail 581234	
	Seg 1 Total
Concrete Total Weight	1,219 1,219
Barriers Total Weight	198 198
Beam Total Weight	0 0
Total Dead Load	1,384 1,384
No. of Design Lanes	2 2
Total Lane Loading	178 178
Total Truck Loading	201 201
Total Live Load	458 458
Total Design Load	2,459 2,459



Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
102-1	MAINTENANCE OF TRAFFIC	10.00		\$175,472.38
101-1	MOBILIZATION	10.00		\$193,019.58
104-10-3	SEDIMENT BARRIER	13,729.00 LF	\$4.16	\$57,108.48
104-11	FLOATING TURBIDITY BARRIER	250.00 LF	\$13.11	\$3,277.50
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	250.00 LF	\$3.14	\$785.00
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	\$1,400.00	\$1,400.00
107-1	LITTER REMOVAL	1.20 AC	\$22.09	\$26.51
107-2	MOWING	1.20 AC	\$56.27	\$67.52
110-1-1	CLEARING & GRUBBING	12.12 AC	\$11,635.37	\$141,020.88
120-6	EMBANKMENT	54,889.07 CY	\$5.31	\$290,398.96
160-4	TYPE B STABILIZATION	25,813.33 SY	\$6.50	\$167,786.64
285-705	OPTIONAL BASE/BASE GROUP 09	14,467.20 SY	\$14.18	\$205,144.90
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,936.00 TN	\$82.09	\$158,926.24
337-7-33	ASPH CONC FC, TRAFFIC C FC-12.5 RUBBER	1,161.60 TN	\$101.29	\$117,858.48
400-2-2	CONC CLASS II ENDWALLS	18.00 CY	\$810.74	\$14,593.32
400-2-4	CONC CLASS II SUPERSTRUCTURE	226.85 CY	\$573.75	\$130,165.19
400-2-10	CONC CLASS II APPROACH SLABS	67.62 CY	\$325.85	\$22,033.98
400-4-5	CONC CLASS IV, SUBSTRUCTURE	153.72 CY	\$725.87	\$111,580.74
400-8	BRIDGE DECK GROOV & PLANING, DECK 8.5%*	346.67 SY	\$5.54	\$1,920.55



LRE Prices

- Default Average Prices for County, Market Area, and Statewide
 - Price file is refreshed monthly; *this does not refresh the prices that are on existing projects!*
 - Uses most recent 12 months of bid history;
 - Uses all bids, not just low bid;
 - Weighted average, with outliers omitted.
- Project prices
 - Initially, the lowest level default price available will populate the unit price field, but user can select a different price;
 - District LRE Coordinators can perform a refresh of project prices, whenever necessary.
 - District LRE Coordinators can lock unit prices on projects.



Project Scope Issues, Work Program Stability, and Communication

The Estimator will represent the project scope to the best of his or her knowledge.



Scope Tracking & Snapshots

- Changes in Estimate amounts are tracked by using point-in-time “snapshots” at project milestones:
 - Initial Estimate
 - Scope Estimate
 - Phases 1-4
- Reasons for changes in cost are included:
 - Material cost changes
 - Scope Creep or quantity errors
 - Scope changes (due to design issues)

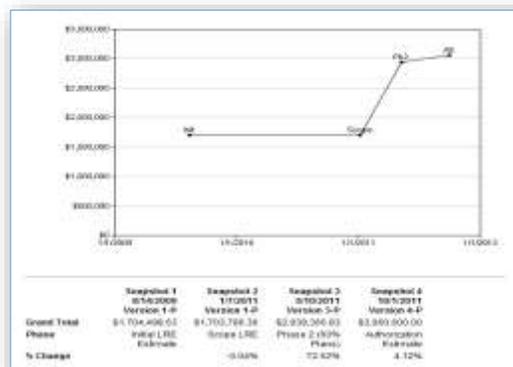
Version 2-P Project Grand Total	Version 4-P Project Grand Total
Date Taken: 01/07/2011 11:25:21 AM	Date Taken: 08/15/2011 01:55:33 PM
Manual / Auto: Manual	Manual / Auto: Manual
Last Update: 08/18/2011 03:13:08 PM by KNA	Last Update: 08/18/2011 04:53:01 PM by KNA@RE
Snapshot Label: Scope LRE	Snapshot Label: Scope LRE
Snapshot Description: Scope added noise wall	Snapshot Description: Scope estimate, unit prices adjusted
Reason(s) for Change: Scope Changes	Reason(s) for Change: Material Cost Changes
Description: Scope added noise wall	Description: Unit prices adjusted based on recent bids.
System Generated	System Generated
	\$5,092,171.00
	\$120,132.12



Innovative Solutions for tomorrow's transportation needs

Scope Changes

What happens to the estimate when the scope changes?




Innovative Solutions for tomorrow's transportation needs

Cost Estimate Task Team

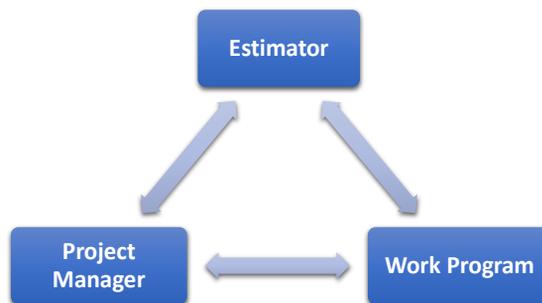
(Recommendations to Ensure WP Stability)



- “Estimates should NEVER be artificially constrained to stay within budget.”
- “The project Scope of Work should be well defined early in project development. Significant scope changes should be approved by upper management.”
- “Districts should foster a culture that requires a close working relationship between project consultants, project managers and estimators to ensure the project features are accurately reflected in the estimate.”



Communication is Essential!



Useful Reports

- (R7) WPA vs. LRE
- (R6) Scope Tracking
- (R9) Project Summary for Selected FY
- (R10) District Summary Report (All FY)



Useful Reports

The screenshot shows a web application interface for 'LONG RANGE ESTIMATES'. At the top left is the 'myfloridacomm' logo. The page title is 'LONG RANGE ESTIMATES'. Below the title, it displays 'User ID: SP955FT', 'Role: Guest', and 'Date: 6/10/2014'. A navigation bar contains 'Home' and 'Reports'. Under the 'Reports' section, there are four buttons: 'R6 Scope Tracking Report', 'R7 WPA vs LRE Report', 'R9 Project Summary for Selected Fiscal Year(s) Report', and 'R10 District Summary Report'. At the bottom, there is contact information for the 'Service Desk', 'FDOT Privacy Policy', 'State Estimates Office', and 'Cheri Sylvester, State Administrator' with the telephone number '(850) 414-4179'. Logos for 'FDOT Office of Information Systems' and 'LRE LONG RANGE ESTIMATES' are also present.



Useful Reports

- WPA vs. LRE
- Scope Tracking
- Project Summary for Selected FY
- District Summary Report (All FY)

FDOT Long Range Estimating System - Production						
R10: District Summary Report						
District 91						
(This report includes Official Primary Services)						
Project Number	Project Description	Project Manager	Letting FY	Project	Grand Total	
193008-2-52-01	US 17 FROM CR 156A (KODACEE) TO HEARD STREET	CS-HEM-RP	2015	\$21,243,797.89		
19A425-2-52-01	SR 17 (SE LAKEVIEW) FROM US 27 N8 TO KEYLAWORTH BLVD	RLC-EAP-JAL	2015	\$1,930,293.27		
19A425-4-52-01	US 27 (SR 25) FROM LAKE EBE AVENUE TO POKA (CL)	PS-RLP-JEW	2014	\$225,239.00		
195416-4-52-01	SR 84 (DAVIS BLVD) FROM E OF SANTA BARBARA BLVD TO W OF RADIO ROAD	PS-DFH-DE	2015	\$81,250.26		
195718-4-52-01	SR 738 (METRO PKWY) FROM S OF WINKLETOWN N OF WAREHOUSE ROAD	PS-DFH-RFH	2008	\$4,921,500.00		
195718-5-52-01	SR 738 (METRO PKWY) FROM S OF HUNTER ST TO HANSON STREET	DEL	2008	\$2,250,792.95		
195718-6-52-01	SR 738 (METRO PKWY) FROM WESTWOOD ENTRANCE TO HANSON STREET	PS-RFH-DEL	2008	\$13,510,923.00		
196114-2-52-01	US 41 (SR 45) FROM I-275 TO HILLSBOROUGH CL	CS-EAP-MBO	2014	\$3,254,159.12		
196904-2-52-01	SR 76 FROM I6 34TH AVENUE TO NE 30TH AVENUE	CS-HEM-JYK	2014	\$21,379,511.58		
196904-4-52-01	SR 76 FROM NE 34TH AVENUE TO BERMH ROAD	CS-HEM-RP	2014	\$20,444,824.99		
197304-1-52-01	SR 163 (N ROUTE) FROM PPHH ROAD TO DR PDS-27A (STORINE FIELDS)	PS-DFH-DMB	2008	\$81,925,331.76		
197534-4-52-01	US 27 FROM BARRY ROAD TO LAKE COUNTY LINK	RLC-HEM-DMB	2013	\$25,780,433.00		
197652-1-52-01	SR 27 (SR 28) AT SR 68 INTERCHANGE	CS-DFH-DMB	2006	\$8,864,836.28		
197709-1-52-01	US 27 FROM N OF CR 547 TO HOLLYHILL GROVE RD#1	PS-DFH-DMB	2006	\$11,034,997.00		
198010-1-52-01	US 984 FROM WOOD STREET TO S OF UNIVERSITY PKWY	PS-JYW-DMB	2006	\$34,389,976.24		



Contact Information



Estimating Systems Support Team / Program Management Office			
Cheri Sylvester	LRE Administrator	cheri.sylvester@dot.state.fl.us	(850) 414-4179
Melissa Hollis	BOE Coordinator	melissa.hollis@dot.state.fl.us	(850) 414-4182
Kwan-Li Ling	LRE Coordinator	Kwan-li.ling@dot.state.fl.us	(850) 414-4053





Demo



Questions?

