

# Cost Estimating & Cost Management Florida DOT Approach

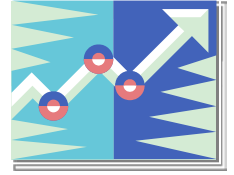
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**Cost Estimating & Cost Management  
Capacity Building Workshop  
Peer Exchange  
FHWA/AASHTO/MnDOT  
Minneapolis, Minnesota**



**Phillip "Greg" Davis, P.E.  
State Estimates Engineer  
Florida Department of Transportation**

**Specifications & Estimates Office  
August 11-13, 2010**

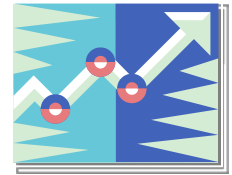


# OVERVIEW

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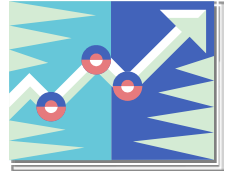
- Construction Cost
- Bid Competition
- Work Program (STIP)
- FDOT Mitigation Strategies





# Construction Cost

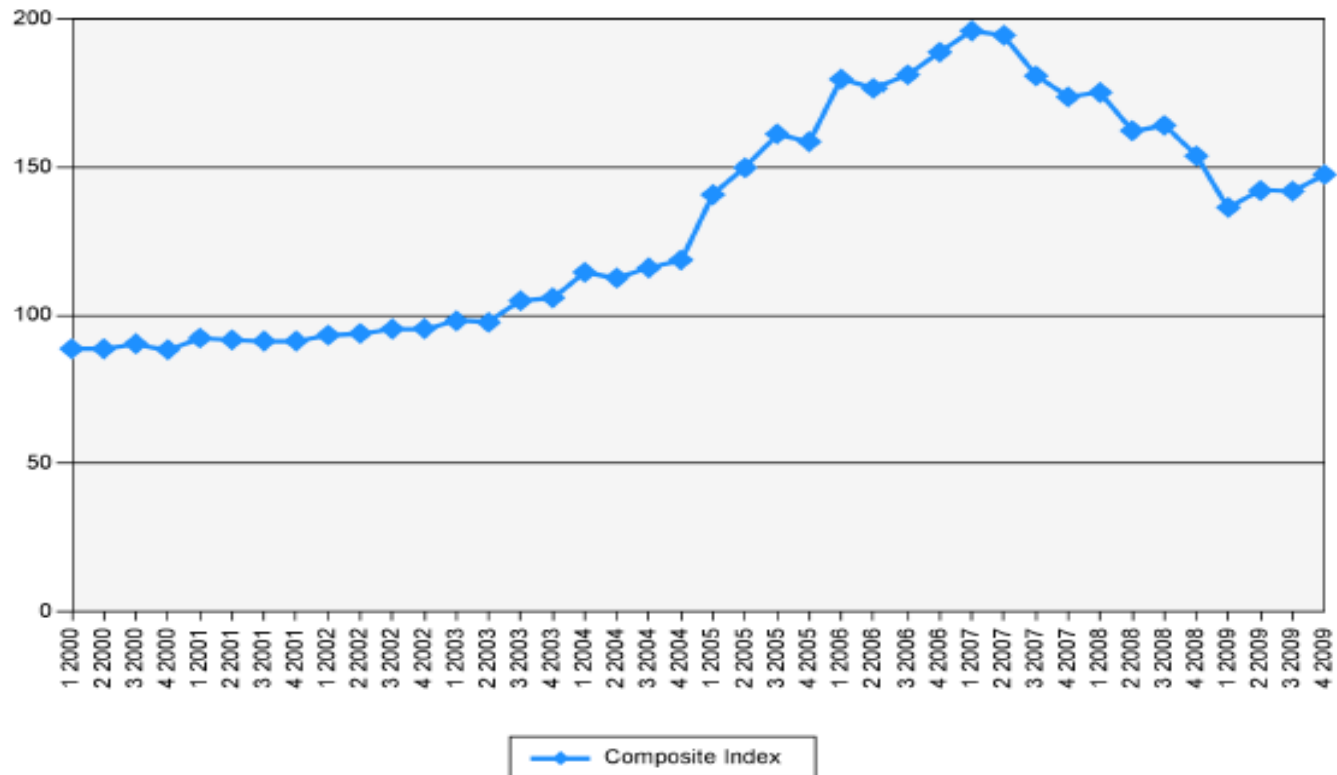


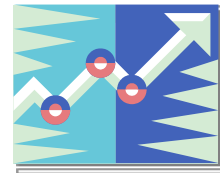


# Construction Cost

## Three Quarter Moving Price Trends Report

All Cost Group Items





# Bid Competition

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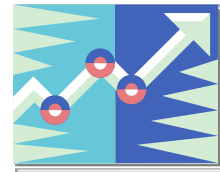


# Bid Competition

Fiscal Year	Number of Contracts	Avg Number of Bidders per Contract	Percent of contracts with 2-bids or less
2002/2003	243	4.3	14.0%
2003/2004	238	3.8	26.5%
2004/2005	240	3.5	27.5%
2005/2006	300	2.3	46.7%
2006/2007	243	3.5	31.3%
2007/2008	195	5.2	10.8%
2008/2009	242	5.9	5.8%
2009/2010	282	6.1	7.4%
2010/2011	27	6.1	3.7%

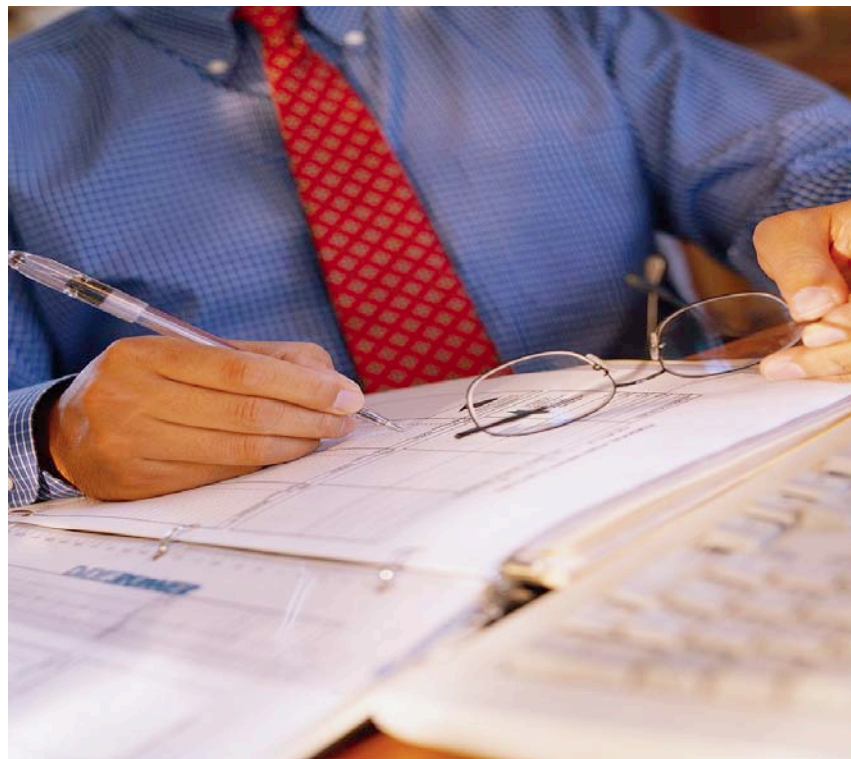
Contract Class 1 lettings thru July 2010





# Work Program (STIP)

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# Budget vs Awards

Fiscal Year	Budget (Million \$)	Awarded (Million \$)	Percent Difference
2004/2005	2,578.9	2,890.6	12.0%
2005/2006	1,714.3	2,076.7	21.1%
2006/2007	3,231.4	3,230.4	0.0%
2007/2008	3,009.3	2,757.4	8.4%
2008/2009	3,424.6	2,449.6	28.5%
2009/2010	3,126.4	2,270.4	27.4%





# Impacts to Florida's Program

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## FY05/06 Impacts

### Rejected 71 contracts because of high bids

These were advertised at \$600M and bids came in at \$977M

28 of these were re-let.

43 contracts were moved into FY 06/07



# Impacts to Florida's Program

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## FY06/07 Impact

- Rejected 11 contracts because of high bids
  - These were advertised at \$23.1M and bids came in at \$37.3M
  - 2 of these were re-let.
  - 9 projects were deferred to 07/08

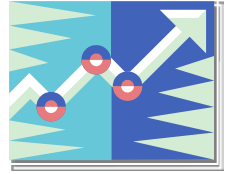


# Impacts to Florida's Program

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- FY07/08 to present
  - Budget surplus
    - Identify additional Projects to consume excess budget

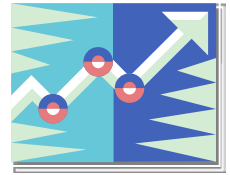




# FDOT Mitigation Strategies

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# Draft Guidebook

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# NCHRP

## REPORT 574

NATIONAL  
COOPERATIVE  
HIGHWAY  
RESEARCH  
PROGRAM

**Guidance for Cost Estimation and  
Management for Highway Projects  
During Planning, Programming,  
and Preconstruction**



# FDOT Cost Increases Summit

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*“Commitments Made are Commitments Kept”*



**A summit to address delivering improvements to  
Transportation infrastructure.**

**February 2006**

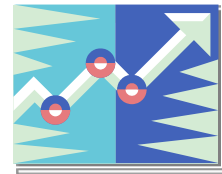


# **FDOT Cost Increases Summit**

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- Nearly 200 Attendees**
- Brainstorm Strategies**
- Short/Long Term Strategies**





# Alternative Contracting

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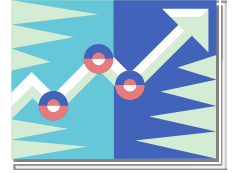
Bid Options

Scope Alternates

Pavement Alternates





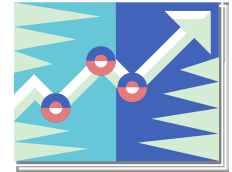


# Maximum Budget

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- Specification
- Contractor Feedback
- Results



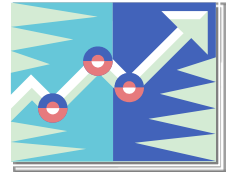


# Flexible Design & Engineering

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- Design what can be build easily  
rather than build what can be  
designed easily
  
- Do not design everything to federal-aid standards





# Refine Awards Criteria

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- Normal Criteria
  
- Additional Criteria
  
- Rejected Contracts



# Cost Estimate Study

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**August 2006**



# Purpose of Cost Estimate Study

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- Improve Cost Estimating Processes
- Enhance Tracking of Project Cost Changes
- SAVE MONEY \$\$\$
- Manage Project Cost
- Stabilize Work Program



# RECOMMENDATIONS



# DOCUMENTING/APPROVING SCOPE OF WORK AND COST ESTIMATES

- Develop a statewide Estimates Tracking System that extracts data from existing Department systems. This system will be used to document scope of work and cost estimate changes from project inception to contract award.
- Every project scope of work and cost estimate should be reviewed by the appropriate Department Head(s) and approved by the Director of Transportation Development. Each District/TPE should decide what level of approval is required based on the size of the change.
- Central Office Estimates working with the Districts/TPE shall develop a sample electronic form for documenting these changes to be used by the Districts/TPE as they deem appropriate.



# **SCOPE OF WORK & COST ESTIMATE COMMUNICATION**

- Program Manager, Project Manager or EOR/Designer should be responsible for communicating the approved scope of work including changes to the District Estimates Office.
- District/TPE Estimates Office should be responsible for communicating all construction cost estimates including updates and reasons for cost changes to the District/TPE Work Program Office. District Work Program Office should only accept cost information from the District/TPE Estimates Office.
- A representative from the District/TPE Work Program Office should attend all Production Meetings.





# HANDLING REQUESTS FROM OUTSIDE GROUPS FOR ADDED WORK TO A PROJECT

- Each District/TPE shall establish an approval process for all requests. Included in this directive should be guidance when an outside group will be required to pay for the enhancements.
- Enhancement requests affecting project cost shall require District Secretary approval.



# PROJECT DEVELOPMENT AND ENVIRONMENTAL (PD&E) PHASE COST ESTIMATES

- Prior to entering a project that has gone through a PD&E study into the Work Program, a detailed LRE shall be done on the preferred alternative.
- All projects in the Five Year Plan shall be entered into the LRE system.



# Construction Cost Performance Measures

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# Construction Cost Performance Measures

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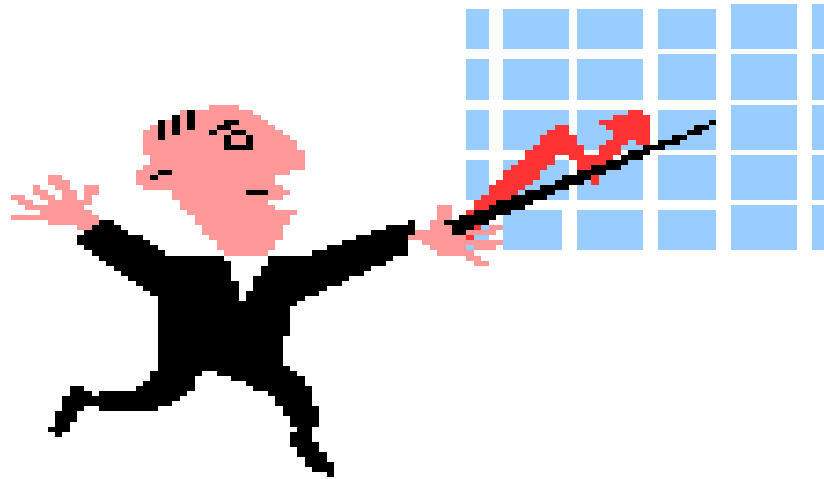
- Adopted vs Low Bid
- Official Estimate vs Low Bid
- Initial Cost Estimate vs Phase II
- Initial Cost Estimate vs Adopted



# Estimates Report Tracking System (ERTS)

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- ❑ ERTS was developed to support cost estimate performance measures
- ❑ Contains 5 years of cost estimates
- ❑ Data refreshed every night



# Implementation of Cost Risk Analysis



# Cost Risk Analysis Team

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- ❑ Team Members
- ❑ Mission/Vision/Goals/Objectives
- ❑ Team Activities



# Team Members

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- Greg Davis – State Estimates Engineer**
- Kurt Lieblong – State Value Engineer**
- Alan Autry– State Alternative Contracting Engr**
- Tim Brock – D4 Value & Utilities Engineer**
- Jose Theiler – D4 Program Service Administrator**





# Mission Statement

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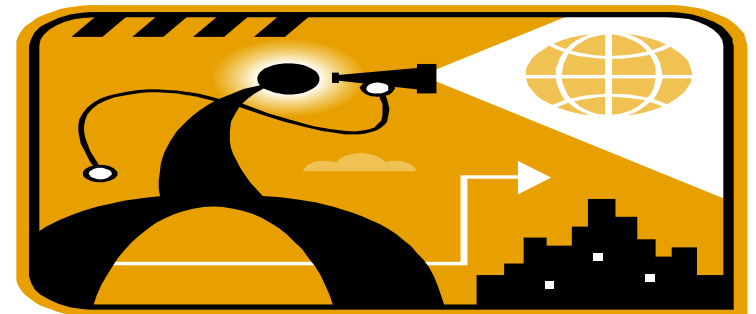
**“Manage/control the quality of construction cost & schedule estimates to ensure they are reasonable, defensible and reliable.”**



# Vision Statement

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**“Risk Management...the way FDOT controls project unknowns and manages their impacts to cost and schedule by incorporating those risks into the decision process.”**



# Goals

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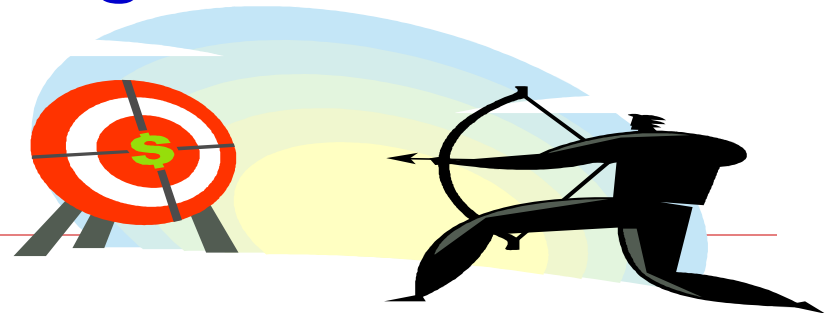
- ❑ **Develop and Implement Cost Risk Analysis Program**
- ❑ **Conduct Cost Risk Analysis Workshops on major projects**
- ❑ **Develop a mentoring/succession/training plan**



# Objectives

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- To conduct cost risk analysis workshops for projects between \$100M and \$500M
- To manage a consultant contract for cost risk analysis workshops on projects greater than \$500M
- To develop training program for cost risk analysis



# Team Activities

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- Draft Procedures
- Identify List of Projects
- Software Selection
- Consultant Contract Scope of Services
- Training and Culture Change



# Pilot Workshops

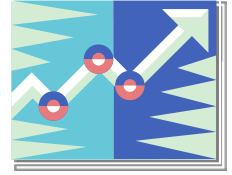
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- I-4 Lee Roy Selman Expressway & Tampa Port Connector
- CSX Commuter Rail
- I-595 Corridor Improvements
- First Coast Outer Beltway
- I-75 Corridor Improvements



# Thank You and Any Questions!





# CONTACT INFORMATION

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