Construction Estimates

D5 Quality Forum

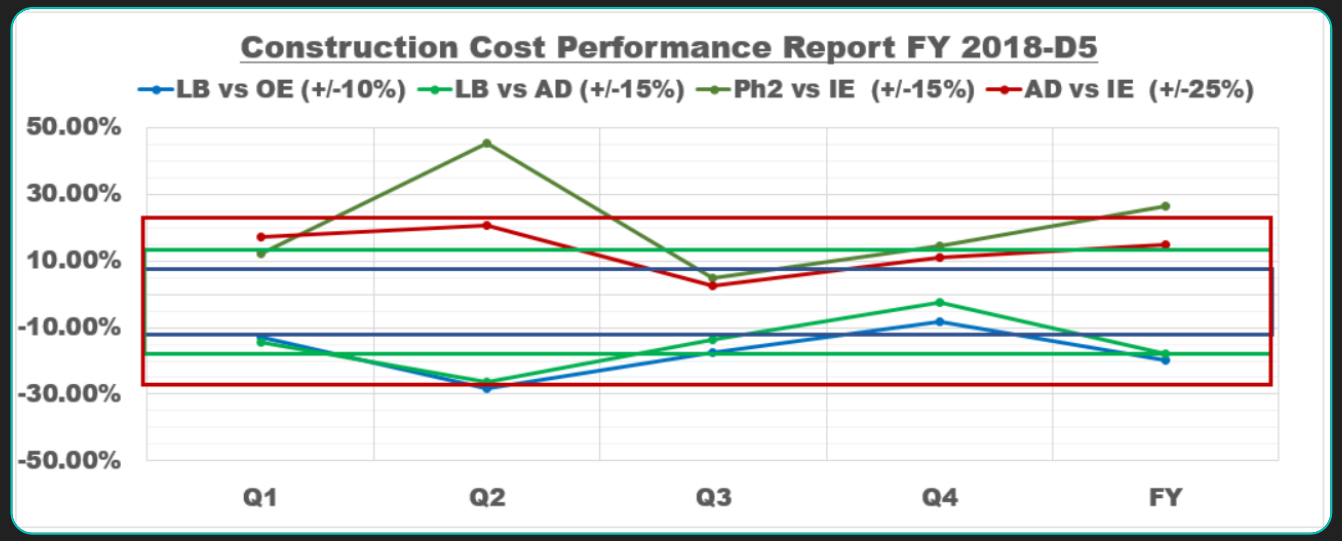
September 18, 2018

Why we're here

- Initiative to Focus on Estimates
- New district practices/processes
- Lessons learned
  - Items often missed in LRE
  - Frequently incorrect quantities in LRE
  - Common errors in Trns*port
- Quality Assurance Review results

Focus on Estimates

- District Estimates was tasked with thoroughly evaluating our entire construction cost estimating process, with a focus on quality and reliability of the estimates
- Construction Cost Performance Measures
  - Adopted vs Low Bid
  - Official Estimate vs Low Bid
  - Initial Cost Estimate vs Phase II
  - Initial Cost Estimate vs Adopted



New District 5 practices

ERC Responses to Estimates Comments

- Update the cost estimate to address all Estimate comments and resubmit to Estimates by the scheduled due date for ERC Responses (approval of the estimate is needed to move forward to the next design phase)

New District 5 practices

Project Milestones

- A Snapshot must be taken of each approved Cost Estimate at all of the Project Milestones (PM to notify Estimates at the highlighted milestones)

3.1 Required Milestones

Snapshots are required at the following milestones:
Initial Long Range Estimate (LRE)
Scope Estimate (or scope just prior to beginning of final design)
Phase I Estimate (or whenever preliminary typical section is available)
Phase II Estimate (or whenever preliminary pay items are available)
Phase III Estimate (or whenever complete pay items and quantities are available)
Phase IV Estimate (or 100%/Final plans)
Authorization Estimate (based on PS&E submittal)

New District 5 Practices

Percentage based pay items:

- Submit recommendations for MOT, Mobilization, Project Unknowns, and Design Build percentages (LRE)
  - Include an explanation detailing why the % was chosen
- As Traffic Control pay items are added to the cost estimate, the % used for the MOT pay item should decrease

New District 5 Practices

Engineer's Estimate

- Each estimate submitted *(through either LRE or Trns*port)* is to be accompanied by an Engineer's Cost Estimate, including all suggestions or considerations for pay item unit costs
  - Already required for: UWHC's (Phase 56), Landscaping, Special Detours, Specialty items with limited bid history (such as trailheads, rest area buildings, and decorative items)

New District 5 Practices

Project Edit Report

- Identify and delete/replace the obsolete pay items in Trns*port by running the Project Edit Report
- Submit the Project Edit Report with your estimate update

Items often missed in LRE

- **Yellow striping**
  - Despite 6" white striping being included in almost every LRE, it is rarely accompanied by 6" yellow
- **Thermoplastic striping**
  - Thermoplastic striping is often neglected in early LREs and it is it never listed as a portion of the project unknowns. This is almost always a notable addition to the cost and needs to be incorporated earlier in the schedule.

Items often missed in LRE

- **Earthwork**
  - While difficult to quantify accurately in early phases, it should be known whether or not it will be needed, and which earthwork pay items will be required.

Quantities most frequently incorrect in LRE

- **Erosion Control**
  - Erosion Control related pay items are frequently added to intermediate versions of the LRE and subsequently removed in later versions, or vice versa
    - The need for erosion control should be known and solidified earlier
- **6” White Painted pavement markings**
  - Frequently grossly overestimated in length.
- **Removal of Thermoplastic**
  - Removal of thermoplastic at the beginning of construction is not paid separately. Conflicting pavement markings are included under payment for Maintenance of Traffic items, per specification.

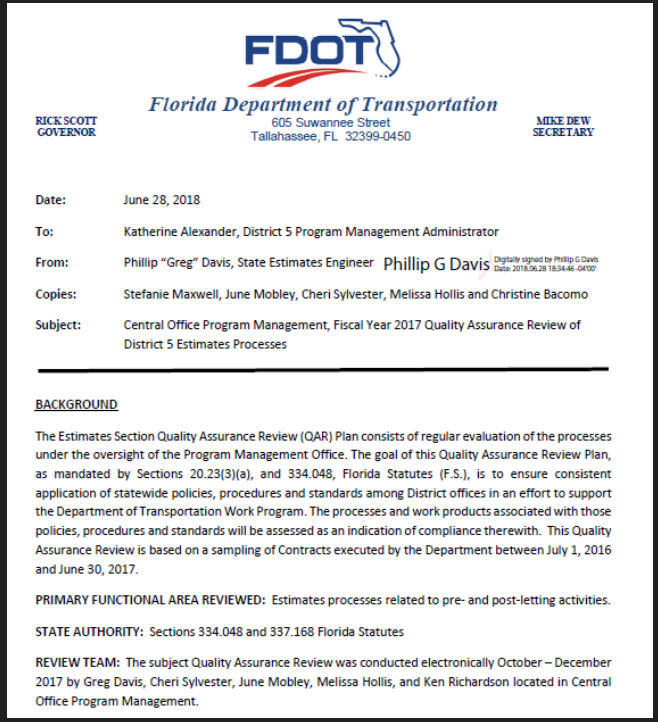
Common errors in Trns*port

- **Initial Contingency**
  - Add Pay Item 999-25 (this is priced in accordance with CPAM 7.4.6.1)
- **Proposal Summary of Pay Items**
  - Do not manually edit Proposal Summary of Pay Items(frequent error on Revisions)

QAR Results

- Quality Assurance Review (QAR) received June 28, 2018
  - Evaluated five contract packages posted between 7/1/2016 and 6/30/2017
  - Goal is to ensure consistent, statewide applications of policies and procedures.
  - Five projects evaluated
  - 28 findings
- Summary sheet of findings will be posted under General Information on the district "Pre-Spec Meeting to Letting" site

http://www.fdot.gov/designsupport/Districts/D5/production_to_letting.shtm



FDOT

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RICK SCOTT
GOVERNOR

MIKE DEW
SECRETARY

Date: June 28, 2018

To: Katherine Alexander, District 5 Program Management Administrator

From: Phillip "Greg" Davis, State Estimates Engineer Phillip G Davis Digitally signed by Phillip G Davis Date: 2018.06.28 18:34:46 -04'00'

Copies: Stefanie Maxwell, June Mobley, Cheri Sylvester, Melissa Hollis and Christine Bacomo

Subject: Central Office Program Management, Fiscal Year 2017 Quality Assurance Review of District 5 Estimates Processes

BACKGROUND

The Estimates Section Quality Assurance Review (QAR) Plan consists of regular evaluation of the processes under the oversight of the Program Management Office. The goal of this Quality Assurance Review Plan, as mandated by Sections 20.23(3)(a), and 334.048, Florida Statutes (F.S.), is to ensure consistent application of statewide policies, procedures and standards among District offices in an effort to support the Department of Transportation Work Program. The processes and work products associated with those policies, procedures and standards will be assessed as an indication of compliance therewith. This Quality Assurance Review is based on a sampling of Contracts executed by the Department between July 1, 2016 and June 30, 2017.

PRIMARY FUNCTIONAL AREA REVIEWED: Estimates processes related to pre- and post-letting activities.

STATE AUTHORITY: Sections 334.048 and 337.168 Florida Statutes

REVIEW TEAM: The subject Quality Assurance Review was conducted electronically October – December 2017 by Greg Davis, Cheri Sylvester, June Mobley, Melissa Hollis, and Ken Richardson located in Central Office Program Management.

QAR Findings

- Plan and pay item notes continue to duplicate text from the Specifications. This is to be avoided.
- All Painted Pavement Markings are to be paid under pay item: 710-90 [*Painted Pavement Markings- Final Surface*]
  - RPMs are also to be included under this pay item.
- All pay items must be identified by both quantity and location on the summary box. When an Area ID or length & width columns are present, the designer must complete the required information.
  - Soil Tracking Prevention Devices and Inlet protection systems are to be identified by each location, not total quantity for the project.
  - Litter Removal and Mowing quantities should not be grouped together. They are to be shown separately, by location, using either Area IDs or Length and Width.

QAR Findings

- Pavement Overbuild quantities must be totaled separately from Structural Course pavement quantities.
  - Any pavement pay items that are used must be detailed on either typical sections or typical details.
- Always verify that Tabulation of Quantities sheet labels correspond correctly with plan sheet numbers.
- Traffic Operations sites should not use 695- pay items.
- Do not include permanent work items in Summary of Temporary Traffic Control Plan Items.
- Pay items 102-1 Maintenance of Traffic, and 102-2 Special Detour items should be located only in the Summary of Temporary Traffic Control Plan Items summary box and not in Summary of Lump Sum Items.

QAR Findings

- Non-standard summary boxes are not to be used.
- Pay item descriptions are not to be modified or altered.
  - All descriptions are to match the pay item descriptions from the Master Pay Item List.
- Despite being a Lump Sum pay item, Clearing and Grubbing quantities must include shape/location details and may not be listed with bounds from project “end to end.”
  - Clearing and Grubbing should also include all removal of flexible pavement.
- Maintenance Only pay items (such as Desilting pipe) may not be used without being explicitly requested by District Maintenance.

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Questions?