



# Major Project Requirements

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# Agenda

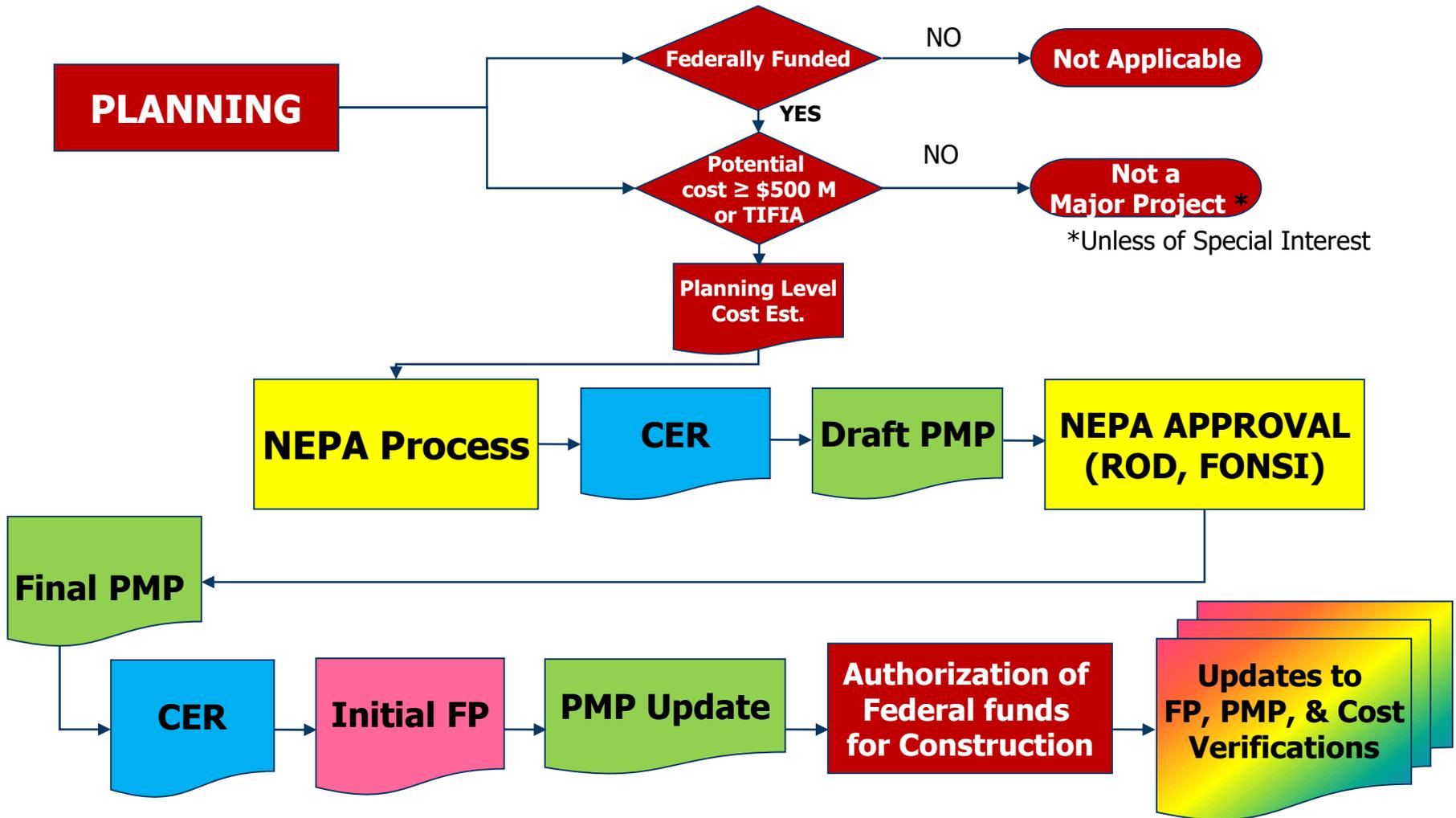
Discuss Major Project Requirements:

- Cost and Schedule Risk Analysis
- Cost Estimate Reviews
- Financial Plans
- Project Management Plans

# What Is a Major Project?

- A project that has received or will receive federal funding
- Over \$500 million in total project cost OR has a high level of public or congressional interest; are unusually complex; or has extraordinary implications for the national transportation system
- Based on NEPA scope

# Basic Major Project Process



# FDOT'S Major Projects

| District | Major Project               | Project Manager                                 | Status                  |
|----------|-----------------------------|---|-------------------------|
| 6        | PortMiami Tunnel            | Jacqueline Sequeira / Leonard Salazar           | Construction complete   |
| 4        | I-595                       | Freddy Acevedo-Diaz                             | Construction complete   |
| 7        | I-4 Connector               | Allan Urbonas                                   | Construction complete   |
| 4        | I-75/Palmetto Express Lanes | Robert Bostian (D4) / Judy Solaun-Gonzalez (D6) | Under construction      |
| 5        | I-4 Ultimate                | Loreen Bobo / Jennifer Vreeland                 | Under construction      |
| 6        | Miami Intermodal Center     | Teresita Alvarez                                | Under construction      |
| 6        | Palmetto 5                  | Claudio Diaferia                                | Under construction      |
| 4        | I-95 Express III            | Robert Bostian                                  | Under construction      |
| 5        | Wekiva                      | Kevin Moss                                      | Under construction      |
| 3        | Pensacola Bay Bridge        | Kerrie Harrell                                  | Under construction      |
| 6        | I-395                       | Maria Perdomo                                   | In procurement          |
| 7        | Gateway Expressway          | Eyra Cash                                       | Approaching procurement |
| 5        | I-4 Beyond the Ultimate     | Beata Stys-Palasz                               | Under evaluation        |
| 7        | Tampa Bay Express           | Amy Neidringhaus                                | Under evaluation        |
| 6        | Palmetto/Golden Glades      | Dat Huynh                                       | Under evaluation        |
| 6        | Okeechobee/SR 25            | Bao-Ying Wang                                   | Under evaluation        |
| 2        | First Coast Expressway      | Jim Knight                                      | Under evaluation        |



# **Cost and Schedule Risk Analysis and Cost Estimate Reviews**

**Greg Davis**  
*State Estimates Engineer*  
**Program Management**

# What Is Risk?

Project Management Institute (PMI) Says:

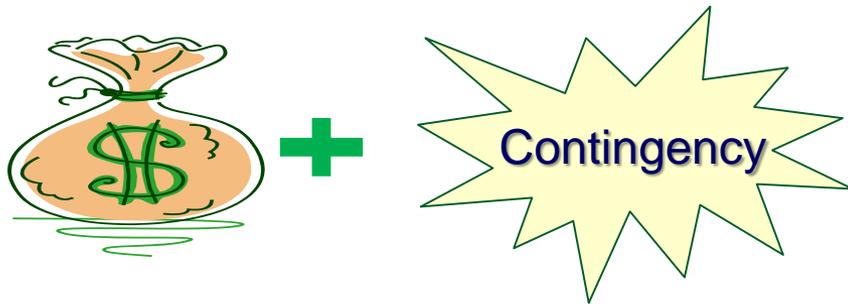
“An uncertain event or condition that, if it occurs, has a positive or negative effect on the project’s objectives.”



# What Is Risk Analysis?

## Traditional Estimating

- Contingency is intended to include all risk known/unknown
- Little control of cost and schedule
- Reactive



## Risk-Based Estimating

- Risk are clearly identified and quantified in estimate
- Reasonable control of cost and schedule
- Proactive



# Why Risk Analysis?

- Stabilize & Support Work Program with better cost estimates and schedules
  - Validate cost & schedule for accurate project delivery
  - Replace general project contingency with risk-based cost
- Enhance Project Management activities by including risk assessment and mitigation
- Support FHWA requirement for financial plans on major projects by providing risk-based cost estimates

**Maximizes the Likelihood of Meeting Time & Budget Goals**

# Objectives of a Risk Workshop

- Identify project risk to account for uncertainty in scope, cost and schedule
- Assess project risks by quantifying impacts to cost and schedule:
  - ✓ Likelihood (probability) of occurrence
  - ✓ Impact (if it occurs)
- Analyze the project risks through modeling to develop a baseline risk assessment.
- Produce a Risk Register for future monitoring of identified project risks
- Review cost and schedule for ROW, Environmental, PD&E, Design / RFP Development (Design-Build), Construction, CEI, Utilities, Railroad, etc.

# Project Selection Guidelines – Risk Analysis

- Complex project or total project cost greater than \$500 Million – Consultant-led Independent Risk Analysis Workshop
- Total project cost between \$100 - \$500 million - Risk Analysis Workshop using commercial risk modeling program
- Projects not requiring a formal workshop - Risk Analysis Modeling Tool by HDR
- Qualitative Risk Analysis - Risk Based Graded Approach Worksheet

# Risk Analysis Workshops

- 2 to 3 day structured event
- Identify and quantify threats and opportunities
- Identify risk management strategies
- Collaborative team approach!



# Who Participates in a Risk Workshop

- Project Manager and Design Team
- External subject matter experts
- Internal and external stakeholders
- FHWA (for major projects)
- Disciplines
  - ✓ Construction
  - ✓ Bridge & Structures
  - ✓ Environmental
  - ✓ Right of Way
  - ✓ Geotechnical
  - ✓ Construction
  - ✓ Utilities
  - ✓ Local agencies
  - ✓ Others depending on project scope



# Risk Assessment

- Review Base Inputs
  - ✓ Validate base cost estimate
  - ✓ Develop project flowchart
- Conduct Risk Assessment Workshop
  - ✓ Identify and quantify risk factors
  - ✓ Develop Risk Analysis Model
- Produce Cost and Schedule Risk-Adjusted Results
- Ranking of key risk factors

# CSRA vs. CER

*What is the difference between FDOT's Cost Schedule Risk Analysis (CSRA) and FHWA's Cost Estimate Reviews (CER)?*

## FDOT CSRA

- Led by Consultant/In-house
- Recommended for projects with total cost \$100M+ or complex projects
- Analysis of *future cost only*\*
- 2-3 days for workshop; base cost & schedule completed in advance
- Emphasis on cost & schedule management by risk mitigation

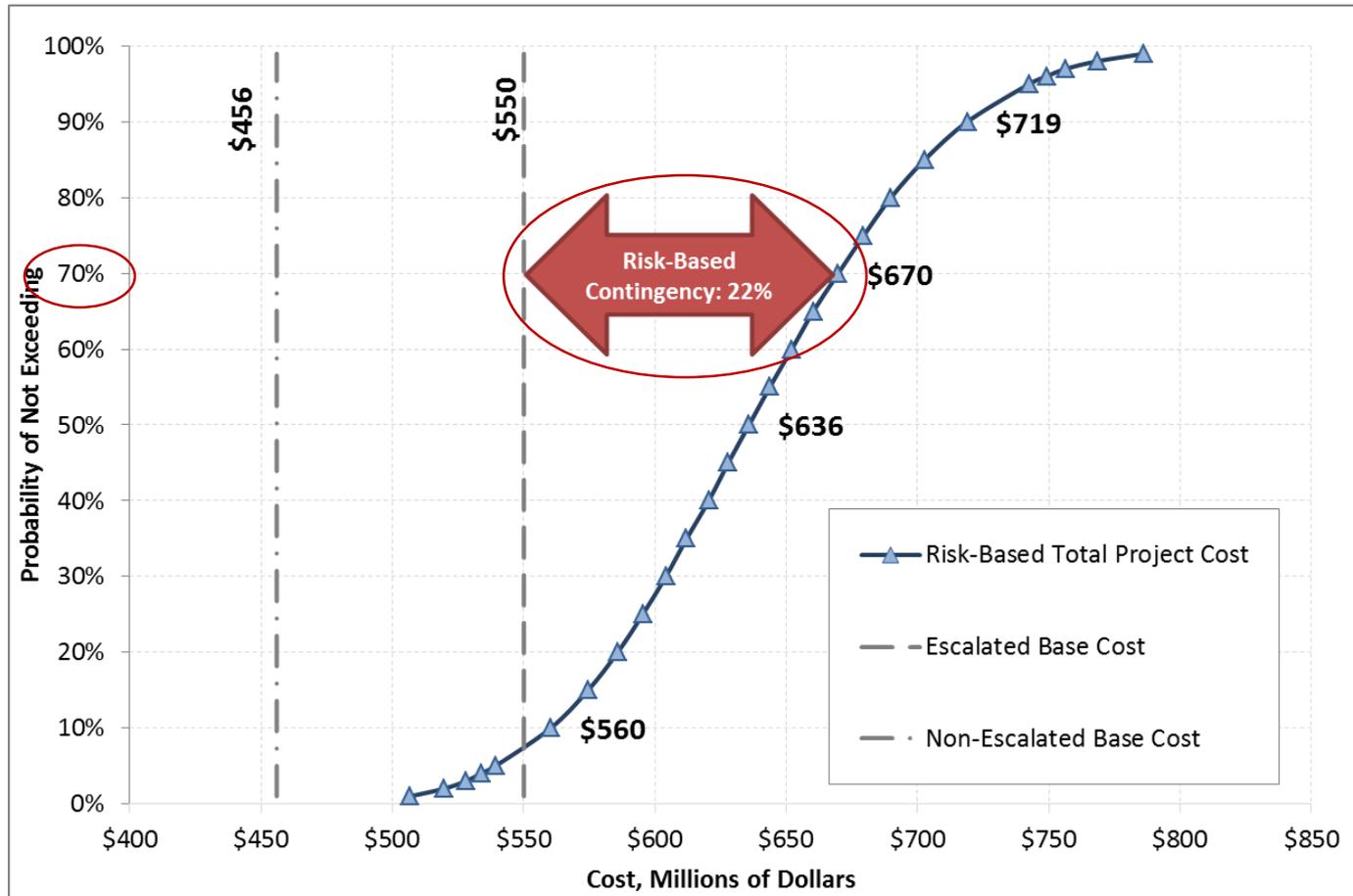
*\*Includes expended cost if performed on a FHWA Major Project*



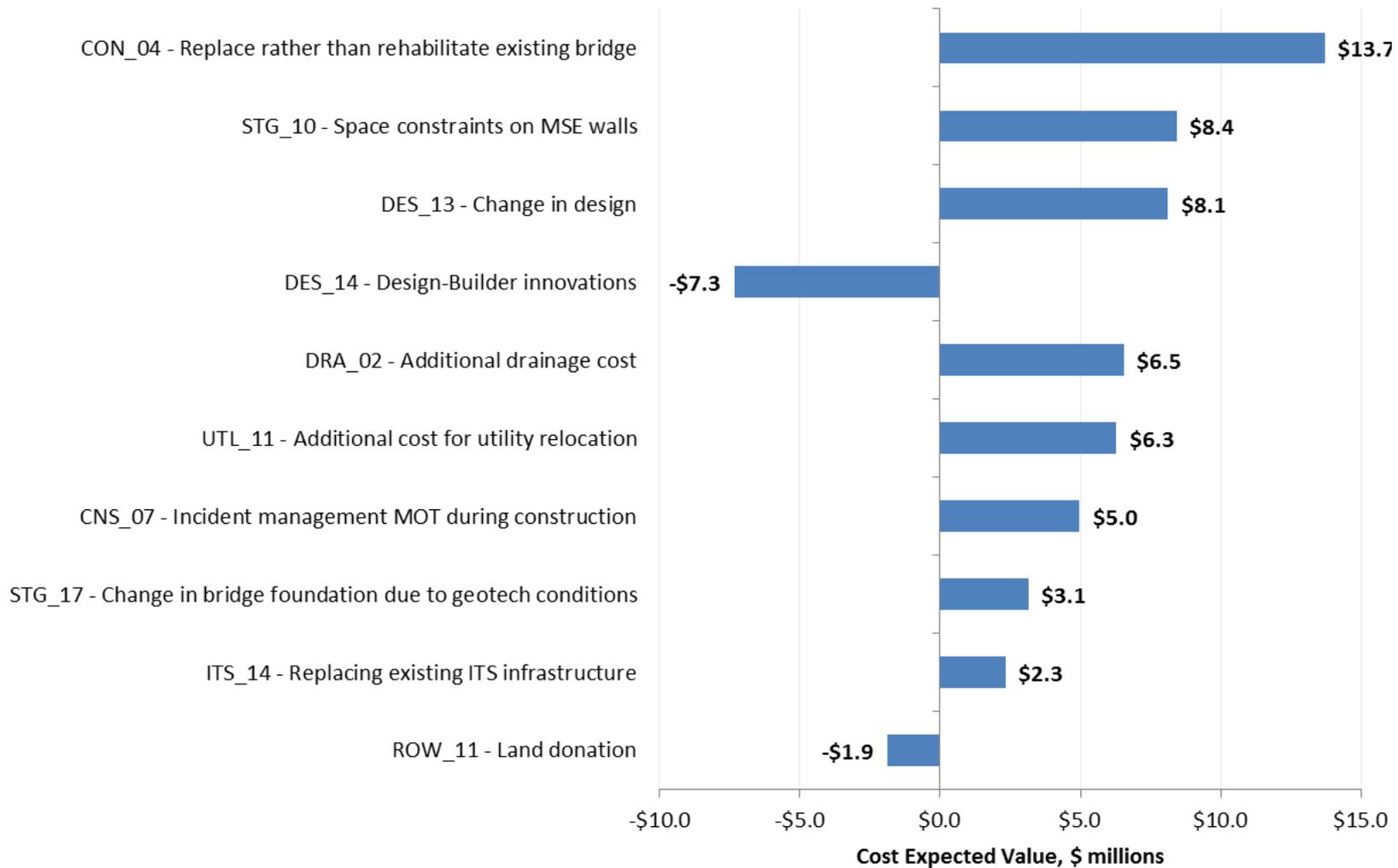
## FHWA CER

- Led by FHWA DC Office
- Required for projects with total cost \$500M+ or complex projects
- Analysis of *future and expended cost*
- 3 days for workshop; includes base cost & schedule review and preliminary results
- Emphasis on identifying & mitigating risk (pre-NEPA) and programming & funding 70% percentile cost value (pre-Construction)

# 70% Reliability Cost Estimate



# Risk Assessment Results: Tornado Diagram



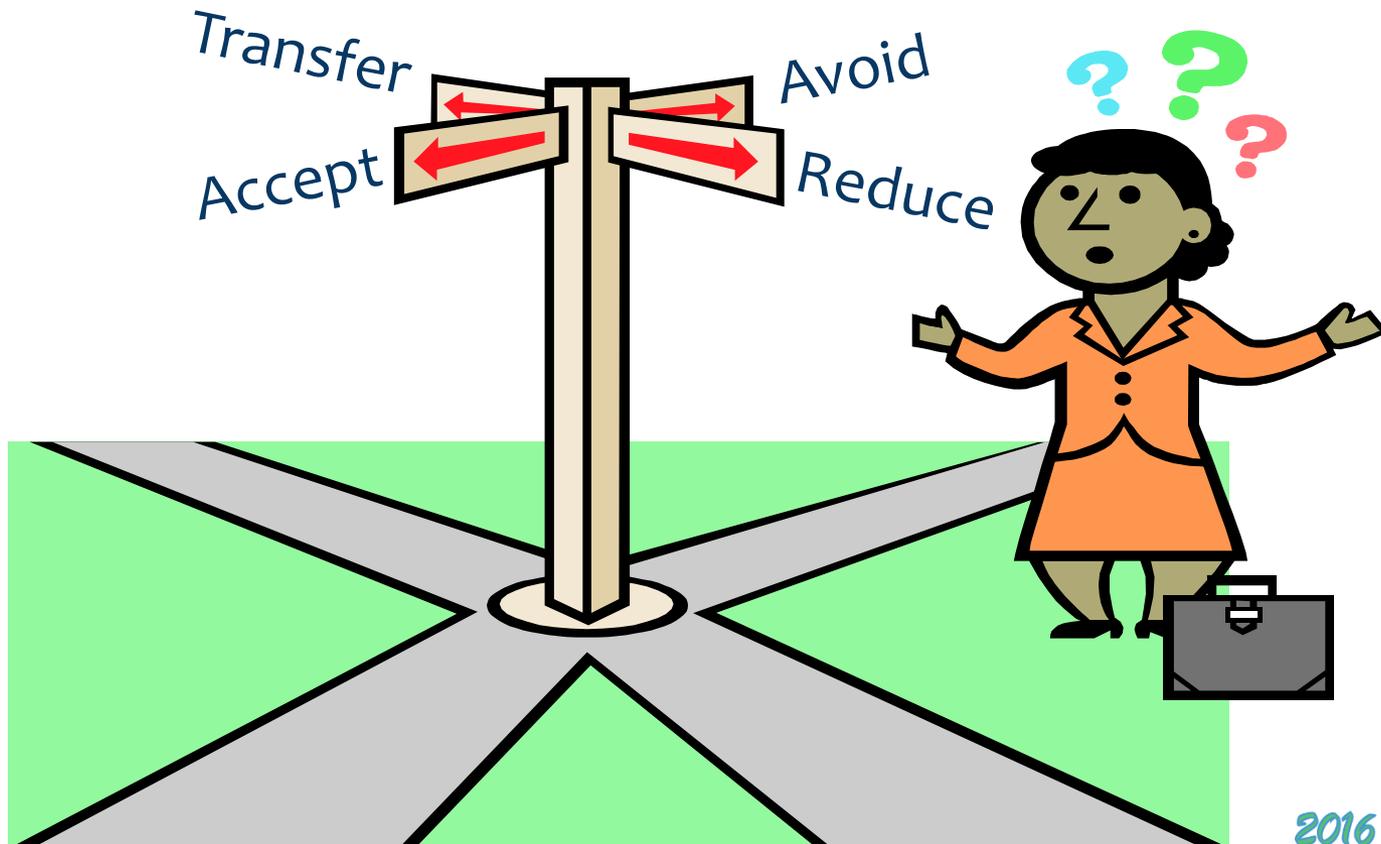
# Risk Register

| Risk        |     |   | Pre-Mitigation (Data Date = 01-Feb-12) |          |              |       | Mitigation |       |            |
|-------------|-----|---|--|----------|--------------|-------|------------|-------|------------|
| ID          | T/O | Title   | Probability                            | Schedule | Cost         | Score | Response   | Title | Total Cost |
| CNS 10.01   | T   | Traffic Management - baseline solution does not work          | L (25%)                                | N (0)    | L (\$60,0... | 3     | Reduce     |       | \$0        |
| CNS 10.03   | T   | Maintaining local access                                      | VH (80%)                               | N (0)    | L (\$60,0... | 9     | Reduce     |       | \$0        |
| CNS 50.01   | T   | Delay in obtaining temporary permit                           | VL (10%)                               | H (30)   | N (\$0)      | 4     | Reduce     |       | \$0        |
| CNS 900.03  | T   | Removal of existing bridge                                    | VH (80%)                               | N (0)    | H (\$300,... | 36    | Reduce     |       | \$0        |
| CTR 40.01 A | O   | Competitive Market Results in Lower Bid Prices - Scenario 1   | VH (75%)                               | N (0)    | VH (\$5,0... | 72    | Enhance    |       | \$0        |
| CTR 40.01 B | O   | Competitive Market Results in Lower Bid Prices - Scenario 2   | M (50%)                                | N (0)    | VH (\$5,0... | 40    | Enhance    |       | \$0        |
| DES 10.01   | T   | Changes in Profile  | M (50%)                                | VH (80)  | VH (\$75...  | 40    | Accept     |       | \$0        |
| DES 10.02   | T   | Changes in Design Standards                                   | VL (5%)                                | N (0)    | VH (\$75...  | 8     | Reduce     |       | \$0        |
| DES 20.01   | T   | Changes in Design - Wider Trail                               | VL (10%)                               | VH (100) | VH (\$2,2... | 8     | Reduce     |       | \$0        |
| ENV 30.02   | T   | New permits or new information required                       | L (25%)                                | N (0)    | L (\$66,6... | 3     | Accept     |       | \$0        |
| ENV 40.02   | T   | Unanticipated Cultural or Archaeological Findings             | VL (10%)                               | H (36)   | N (\$0)      | 4     | Accept     |       | \$0        |
| ENV 60.02   | T   | Additional wetlands mitigation area needed                    | M (50%)                                | N (0)    | VH (\$1,5... | 40    | Reduce     |       | \$0        |
| ENV 60.03 A | T   | Additional wetlands mitigation area needed (Schedule)         | VL (10%)                               | VH (60)  | N (\$0)      | 8     | Reduce     |       | \$0        |
| ENV 70.01   | T   | Design Changes for Ponds                                      | M (50%)                                | N (0)    | M (\$90,...  | 10    | Reduce     |       | \$0        |
| MGT 40.02 B | T   | Priorities change on existing program (Bridge Maintenance)    | VH (100%)                              | N (0)    | VH (\$1,7... | 72    | Reduce     |       | \$0        |
| MGT 900.04  | T   | Threat of Lawsuits  | VL (10%)                               | VH (100) | N (\$0)      | 8     | Reduce     |       | \$0        |
| ROW 900.02  | T   | Coordination of the removal of the Shipyard Pedestrian Bridge | M (50%)                                | N (0)    | M (\$126...  | 10    | Reduce     |       | \$0        |
| STG 20.01   | T   | Encountering Unexpected Subsurface Conditions                 | VH (90%)                               | VH (90)  | VH (\$1,1... | 72    | Reduce     |       | \$0        |
| UTL 20.03   | T   | FDOT Utilities Relocation Cost                                | VL (10%)                               | N (0)    | H (\$250,... | 8     | Reduce     |       | \$0        |

✓ The Risk Register is the single most powerful Control Tool

✓ Incorporate it in your Progress Reports!

# Risk Response Strategies

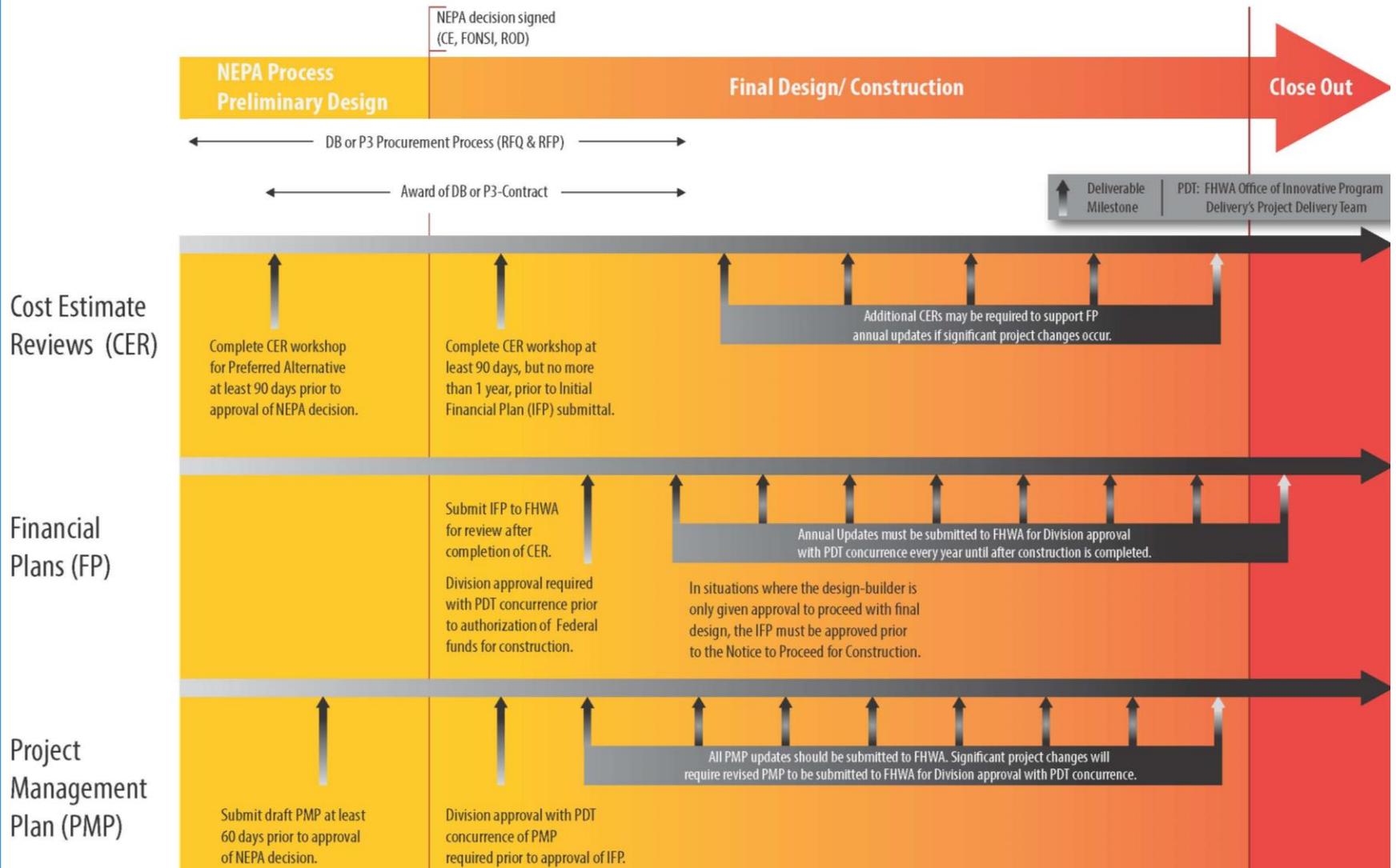


# Risk Response Strategies



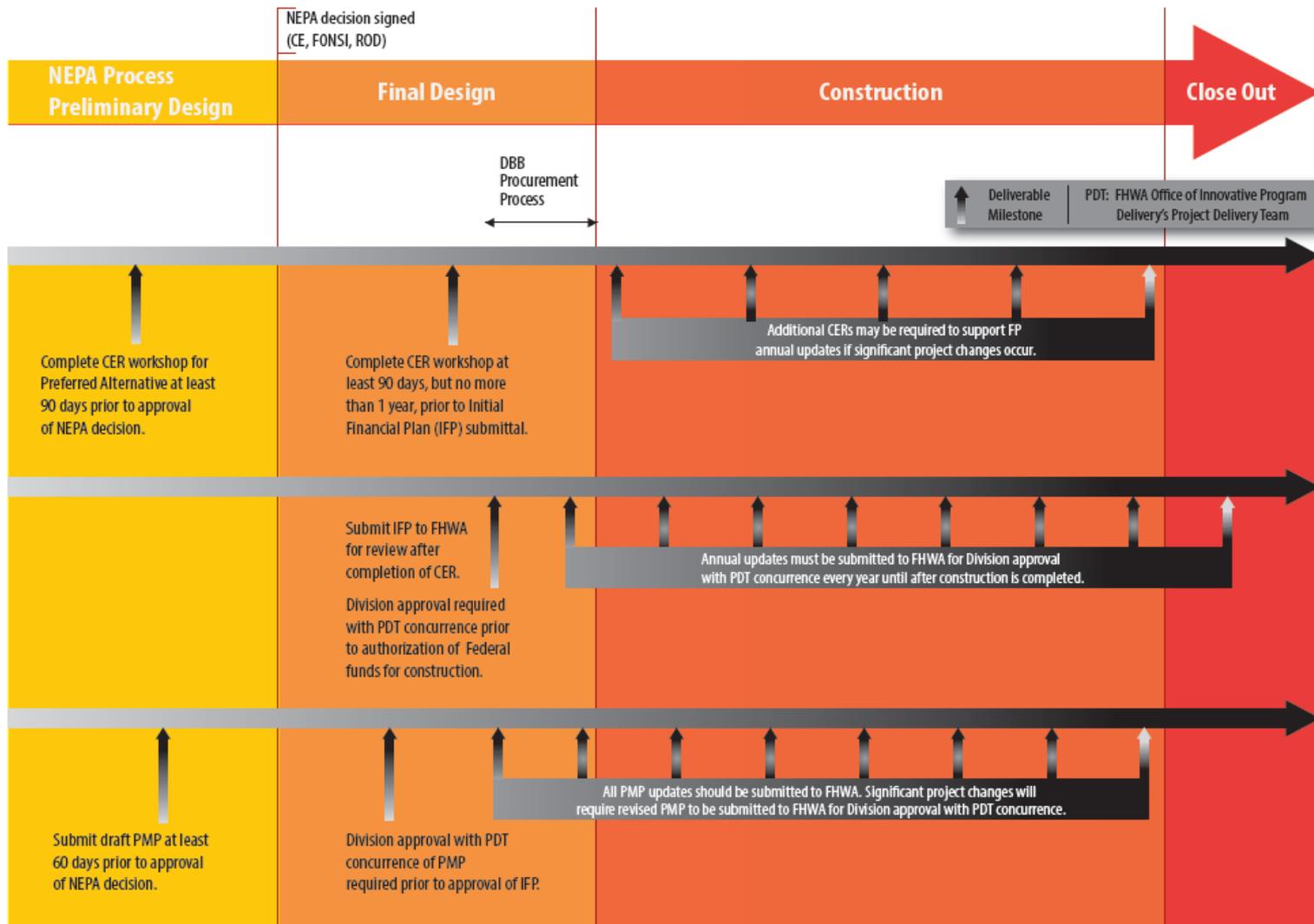
“Hope is not a Strategy”

# Major Projects Timeline - DB



# Major Projects Timeline - DBB

NEPA decision signed  
(CE, FONSI, ROD)



# Consultant Led CERs – Approval Process

- Initial coordination with FHWA (HQ & Division Office) at least 2- months prior to the risk analysis workshop
- Consultant scope of services and proposed workshop agenda must be submitted for approval prior to the workshop
- Preparation session conference call 3-4 weeks prior to workshop – FHWA (HQ & Division Office) must participate
- FHWA Division/HQ Office must have the opportunity to participate in all pre-workshop activities (i.e. base cost review).
- No conflict of interest between consultant conducting the workshop and performing other engineering services on the project
- CER draft report must be reviewed by FHWA HQ and Division Office within 30-days of the workshop; all comments must be addressed; also provide Monte Carlo report (file)

# Q & A





# Major Project Financial Plans

**Diane Flowers**

***Major Project Financial Plans Coordinator***

**Project Finance Office  
Office of the Comptroller**

# Major Project Financial Plans

| Project                              | Initial Report Submittal Date | Effective Date | Next Report Due Date                              |
|--------------------------------------|-------------------------------|----------------|---|
| Miami Intermodal Center              | 8/2/1999                      | February 28    | 5/31/2016   |
| I-595 Corridor Improvements          | 3/7/2008                      | December 31    | 12/31/2016 (brief annual financial status report) |
| Port of Miami Tunnel                 | 6/25/2009                     | June 30        | 9/30/2016   |
| Palmetto 5 - SR826/SR836 Interchange | 9/4/2009                      | June 30        | 9/30/2016   |
| I-4/Selmon Expressway Connector      | 10/20/2009                    | August 31      | 11/30/2016  |
| I-75 / Palmetto Managed Lanes        | 4/10/2013                     | April 30       | 7/31/2016   |
| I-4 Ultimate                         | 7/1/2013                      | June 30        | 9/30/2016   |
| I-95 Express III                     | 10/8/2014                     | September 30   | 12/31/2016  |
| Wekiva                               | 5/15/2015                     | June 30        | 9/30/2016   |
| Pensacola Bay Bridge                 | 9/15/2015                     | August 30      | 11/30/2016  |
| I-395                                | 4/13/2016                     | February 2017  | 5/31/2017   |
| Tampa Bay Express                    | TBD                           | TBD            | TBD   |
| Gateway                              | TBD                           | TBD            | TBD   |
| Okeechobee/SR 25                     | TBD                           | TBD            | TBD   |
| Palmetto/Golden Glades               | TBD                           | TBD            | TBD   |

# Financial Plan Purpose

- Helps to ensure that necessary financial resources are identified, available, and managed through life of project
- Provides scope, cost estimate, schedule, funding, and reasonable assurance that there is funding to complete the project
- Developed and submitted by the project sponsor(s)

# Major Projects Financial Plans

- Required for all projects over \$500 million total cost
- Presented in year-of-expenditure dollars
- Includes all phases: PD&E, preliminary engineering, right-of-way, construction, and CEI
- Coordinated by the Project Finance Office
- Project managers should start discussions with the Project Finance Office as PD&E nears completion, or earlier

# Major Projects Financial Plans (cont'd)

- Based on programming “as of” an effective date
- Ensures sufficient funds to complete the project
- Programming must be at or above the 70<sup>th</sup> percentile as reported in the Cost Estimate Review
- Initial financial plan must be approved before FHWA will authorize federal funds and approve the release of the final RFP
- Annual financial plan updates are required until the project reaches final acceptance

# Elements Needed from CSRA/CER

The Financial Plan uses elements from the CSRA or CER including:

- The 70<sup>th</sup> percentile for the Project (escalated/YOE\$ and include all prior costs).
- For phased financial plans, 70<sup>th</sup> percentiles are needed for each segment.
- Top 10 risks to cost and schedule. Districts must report their mitigation efforts until the risk is eliminated.

# Inputs Needed from the District

- All FM numbers associated with the Project (everything under NEPA)
- Map that shows both PD&E(s) limits and construction limits
- Project description – project limits, features, LOS
- Environmental and ROW status
- Project schedule – from procurement to final acceptance
- Local partners
- Mitigation strategies for top risks to cost and schedule
- Construction payout percentages by year

# OINCCs

An OINCC designation is a waiver to exclude certain project segments (approved under NEPA) from the Financial Plan. These segments are usually far in the future and unfunded.

- Operationally Independent and Non-Concurrent Construction Projects (OINCC) have 3 criteria:
  - ✓ Segment can be operated without any other portion of the overall project being completed
  - ✓ Time between segments must exceed 5 years
  - ✓ Time for construction of the final portion of the overall project must exceed 20 years from the start of the project
- An OINCC designation must be made by FHWA

# Phased Financial Plans

- If there are insufficient financial resources to complete the entire project, financial plans may identify a phasing plan that will address the purpose and need of the overall project in the short term
- Fundable phases should be presented as one individual funded phase in the financial plan
- Phasing plans will be closely coordinated with FHWA
- Will require updates to the CSRA or CER

# Financial Plan Timelines

- Initial Financial Plan (IFP)
  - ✓ Draft IFP should be submitted prior to/with the draft RFP submittal to FHWA
  - ✓ IFP must be approved prior to FHWA's approval of the final RFP and authorization of Federal funds for construction
- Annual Updates
  - ✓ Should be submitted no later than 90 days after the end of the reporting period (“effective date”)



# Initial Financial Plans - Outline

1. Project Description
2. Schedule
3. Project Cost
4. Project Funds
5. Financing Issues
6. Cash Flow
7. P3 Assessment
8. Risk and Response Strategies
9. Annual Update Cycle

# Financial Plan Annual Updates - Outline

10. Summary of Cost Changes Since Last Year's Financial Plan
11. Cost and Funds Trends Since Initial Financial Plan
12. Summary of Schedule Changes Since Last Year's Financial Plan
13. Schedule Trends Since Initial Financial Plan

# Project Management Plans (PMP)

- PMPs are produced in the District under the direction of the Project Manager.
- A draft Project Management Plan must be submitted to the FHWA for review prior to approval of the NEPA decision document.
- FHWA will provide comments and the sponsor must submit a Project Management Plan for approval within 90 days of the date of the signed NEPA decision document.

*A PMP is the guide for implementing the major project and documents assumptions and decisions regarding communication, management processes, execution and overall project control. The purpose of the PMP is to clearly define the roles, responsibilities, procedures and processes that will result in the project being managed such that it is completed on-time, within budget, with a high degree of quality, in a safe manner and in a way in which the public trust, confidence and support in the project will be maintained.*

# Financial Plans Sharepoint Site



FA Home DOT InfoNet OOC Home Disbursement Operations Financial Management General Accounting Project Finance OOC Systems Support Statewide Grant Coordination

- Libraries
- Site Pages
- Shared Documents
- Lists
- Calendar
- Tasks
- Discussions
- Team Discussion

- Recycle Bin
- All Site Content

## Major Project Financial Plans

Major projects are defined as projects receiving Federal financial assistance: 1) with an estimated total cost of \$500 million or more, or 2) that have been identified by the FHWA as a [Major Project](#). Management Plans are required for major projects. There is a major project [timetable](#) for Design-Build and P3 projects and [timetable](#) for Design-Bid-Build projects.

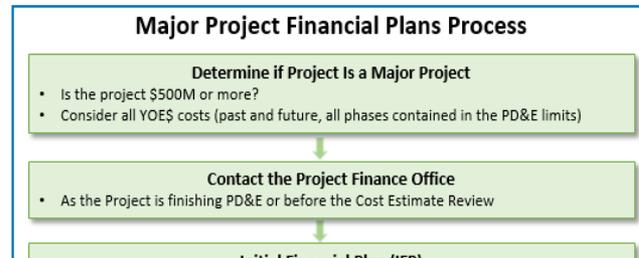
The Project Finance Office in the Office of the Comptroller coordinates all Major Project Financial Plans for the Department. Districts with a major project should contact the Project Finance Office as Cost Estimate Review Workshop is scheduled.

A Financial Plan is a comprehensive document that reflects the Project's cost estimate and revenue structure, and provides a reasonable assurance that there will be sufficient financial resources available. Department should follow FHWA's [Guidance](#) for major project financial plans. [READ MORE...](#)

### Links

- WEBINAR on Major Projects
- FDOT Major Project Financial Plans
- FHWA Major Projects
- FHWA Major Projects - Financial Plans
- FHWA Major Projects - Cost Estimating
- FHWA Major Projects - Project Management Plans
- Public-Private Partnerships

+ Add new link



# Contacts and Resources

| Contact        | Office                          | Area                          | Phone          | E-mail                         |
|----------------|---------------------------------|-------------------------------|----------------|--------------------------------|
| Diane Flowers  | Project Finance,<br>Comptroller | Financial Plans               | (850) 414-4387 | diane.flowers@dot.state.fl.us  |
| Leon Corbett   | Project Finance,<br>Comptroller | Financial Plans               | (850) 414-4421 | leon.corbett@dot.state.fl.us   |
| Greg Davis     | Program Management              | Cost Estimates                | (850) 414-4170 | greg.davis@dot.state.fl.us     |
| Rob Quigley    | Production Support Office       | Project Management<br>Plans   | (850) 414-4356 | robert.quigley@dot.state.fl.us |
| Andrew DeTizio | FHWA Division Office            | Major Projects<br>Coordinator | (407) 867-6411 | andrew.detizio@fhwa.dot.gov    |
| Marvin William | FHWA Division Office            | Major Projects Engineer       | (850) 553-2241 | marvin.Williams@fhwa.dot.gov   |

|                               | Website   |
|-------------------------------|---|
| FHWA Cost Estimating Guidance | <a href="http://www.fhwa.dot.gov/ipd/project_delivery/resources/cost_estimating/">http://www.fhwa.dot.gov/ipd/project_delivery/resources/cost_estimating/</a>   |
| FHWA Major Projects           | <a href="http://www.fhwa.dot.gov/ipd/project_delivery/defined/major_project.aspx">http://www.fhwa.dot.gov/ipd/project_delivery/defined/major_project.aspx</a>   |
| FDOT Financial Plans          | <a href="http://cosharepoint.dot.state.fl.us/sites/OOC/PFO/MPFPs/SitePages/Home.aspx">http://cosharepoint.dot.state.fl.us/sites/OOC/PFO/MPFPs/SitePages/Home.aspx</a>   |
| FDOT Project Management Plans | <a href="http://www.fhwa.dot.gov/ipd/project_delivery/tools_programs/project_management_plans/guidance.aspx">http://www.fhwa.dot.gov/ipd/project_delivery/tools_programs/project_management_plans/guidance.aspx</a> |

# Q & A

