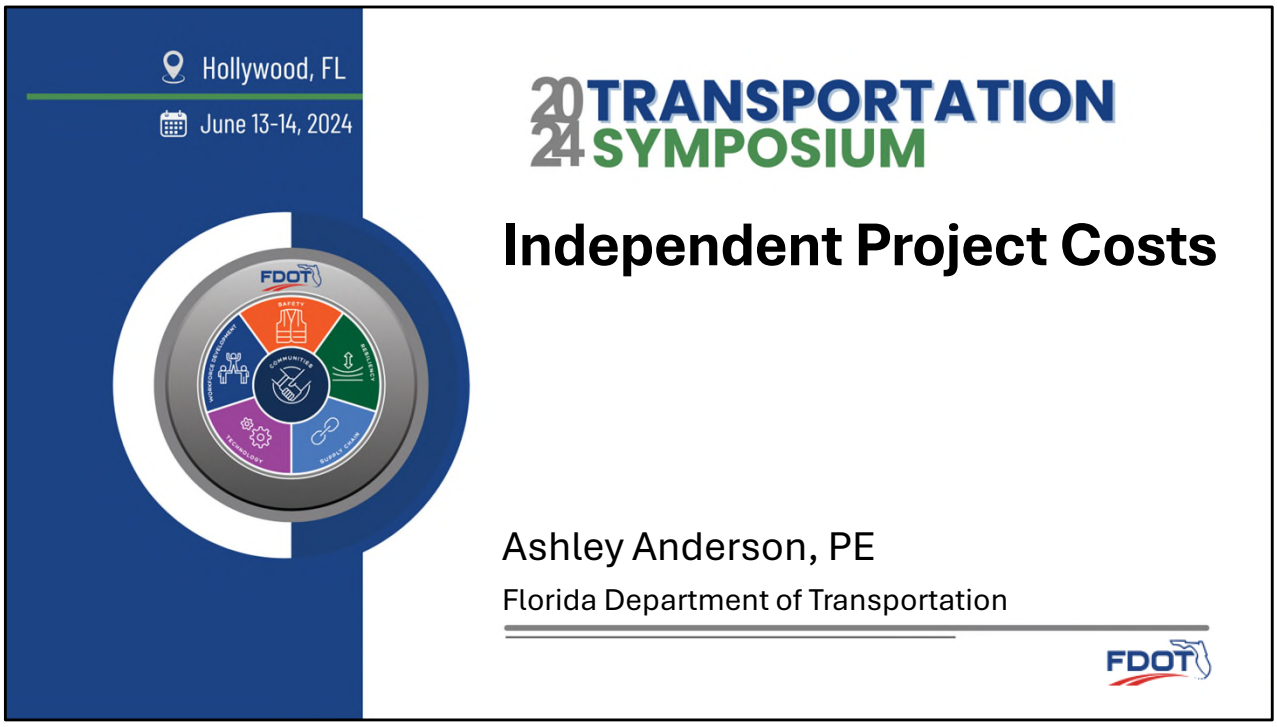
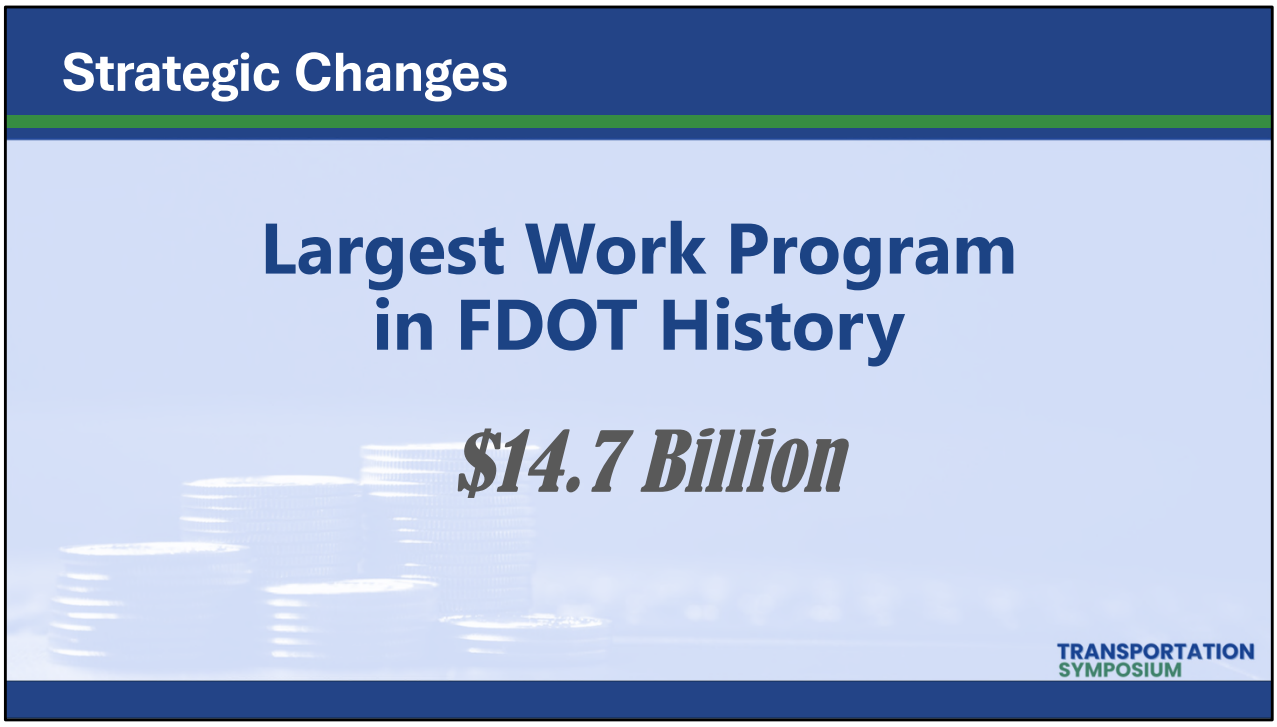


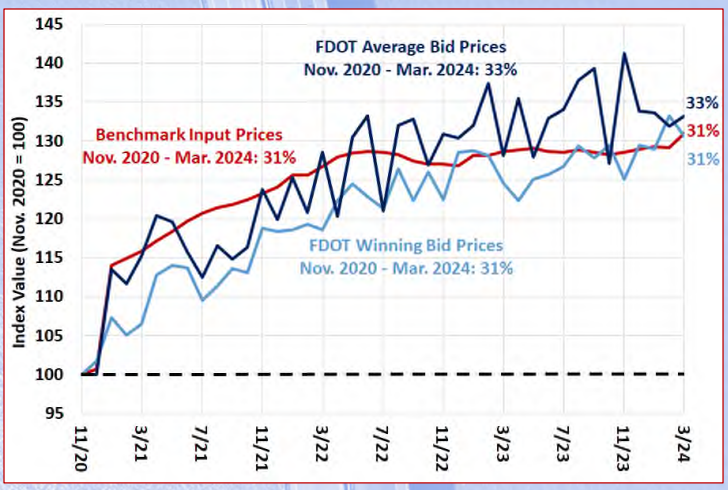
Good Afternoon! I'm Ashley Anderson – FDOT's Forecasting and Project Cost Engineer. I'm excited to be here to talk about Independent Project Cost with you.

We are going to start off talking about a few strategic changes FDOT is implementing to address concerns with Project Cost. I'll detail the Independent Project Cost process and get to some frequently asked questions, as well as any that you have.



Florida currently has its largest work program in history - $14.7 billion – while experiencing record high bid prices, labor availability concerns, and economic challenges. FDOT is implementing a few strategic changes to set us up to better forecast the impacts to the Department and successfully deliver our work program.

Strategic Changes

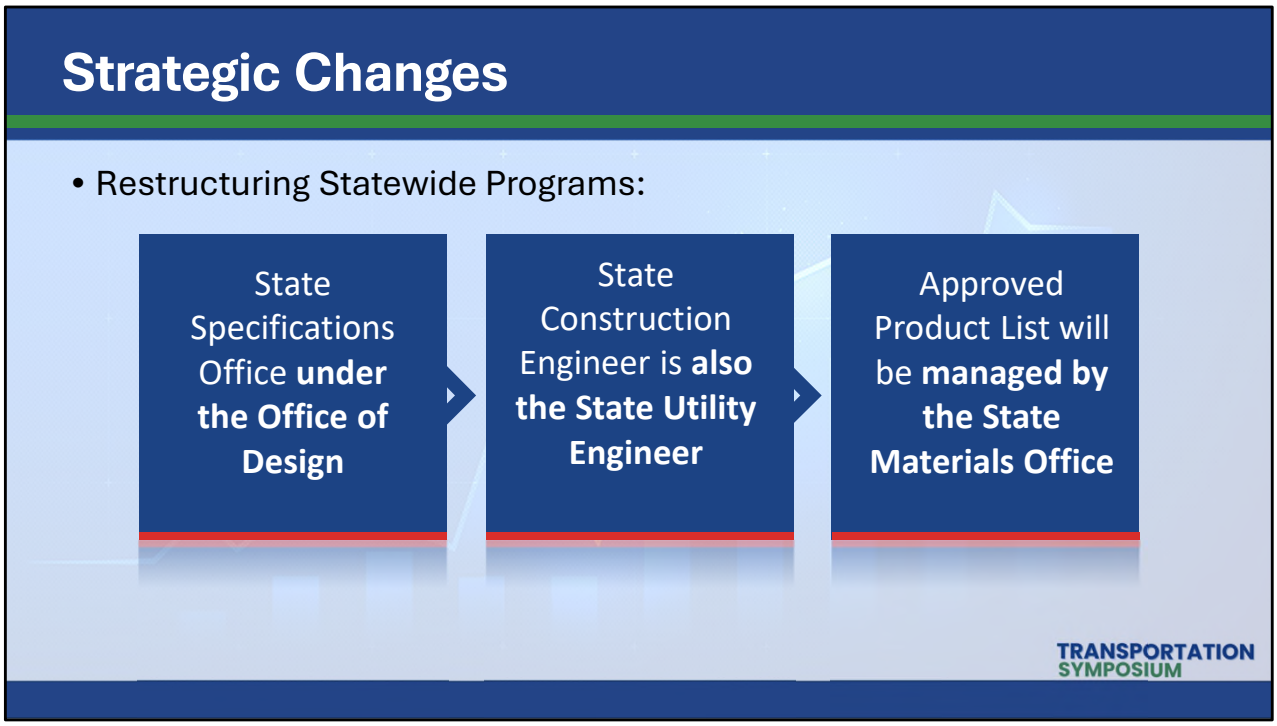


TRANSPORTATION SYMPOSIUM

We are all experiencing price increases in our day to day lives. This chart highlights the volatility of prices since 2020 showing that FDOT is currently hovering at over 30% price increases. These price increases mean millions of dollars on our very large-high profile projects that we need to account for when planning our work program. Current market conditions underscore the need for accurately forecasting projects costs and strategically accounting for risk to better react to volatility of inputs and their affects on cost.

I'll pause for a moment to explain this graph for those trying to figure out what it's showing us:

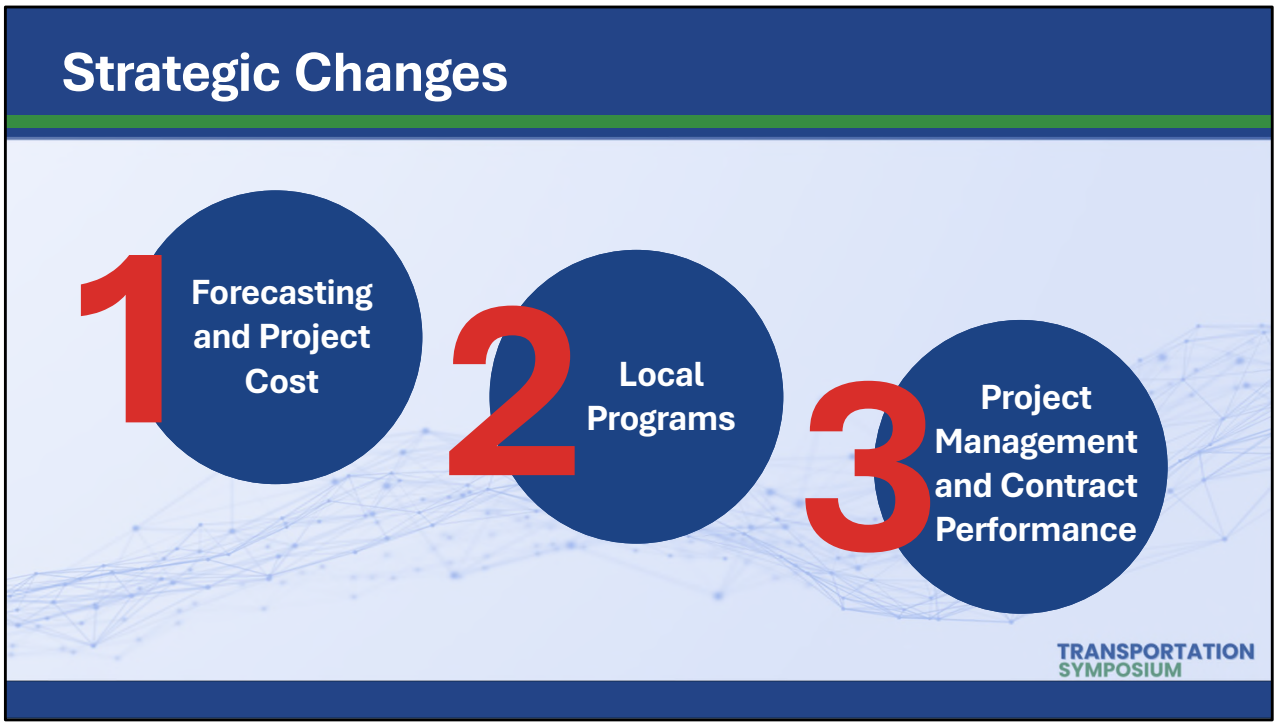
1. The Dark Blue Line is an average of all bid (winning and not)
2. The Light Blue line is an average of all winning bids
3. And the Red Line is the average SE commodity price for concrete/aggregate, Asphalt and steel all rolled up into a weighted average by historical cost shares



Our first strategic change is restructuring some statewide programs to better align with Department priorities and goals.

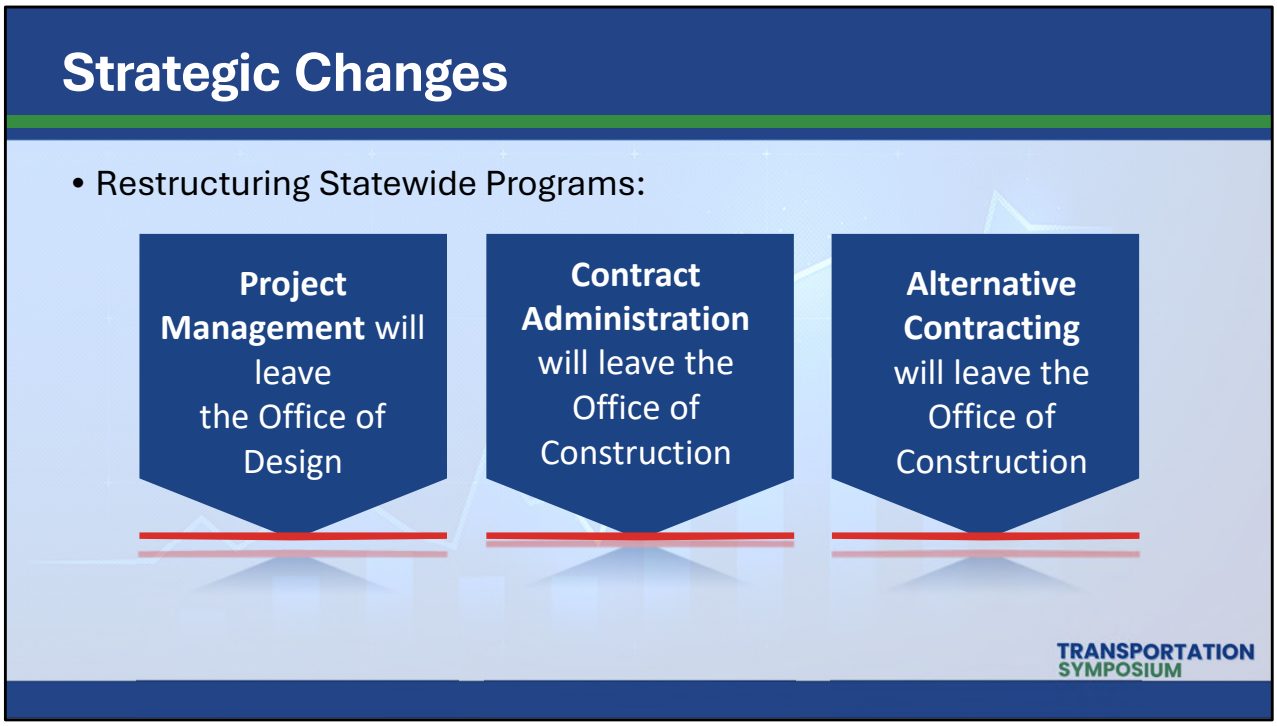
The State Specifications Office is moving under the Office of Design
The State Construction Engineer is also the State Utility Engineer
And the Approved Products List will be managed by the State Materials Office

Our next strategic change is retooling Central Office's Program Management Office to be the Forecasting and Performance Office. Our goal is to elevate the importance of project cost and be innovative in our approach to forecasting, while embracing new project delivery methods like phased design build – especially for major and mega projects.

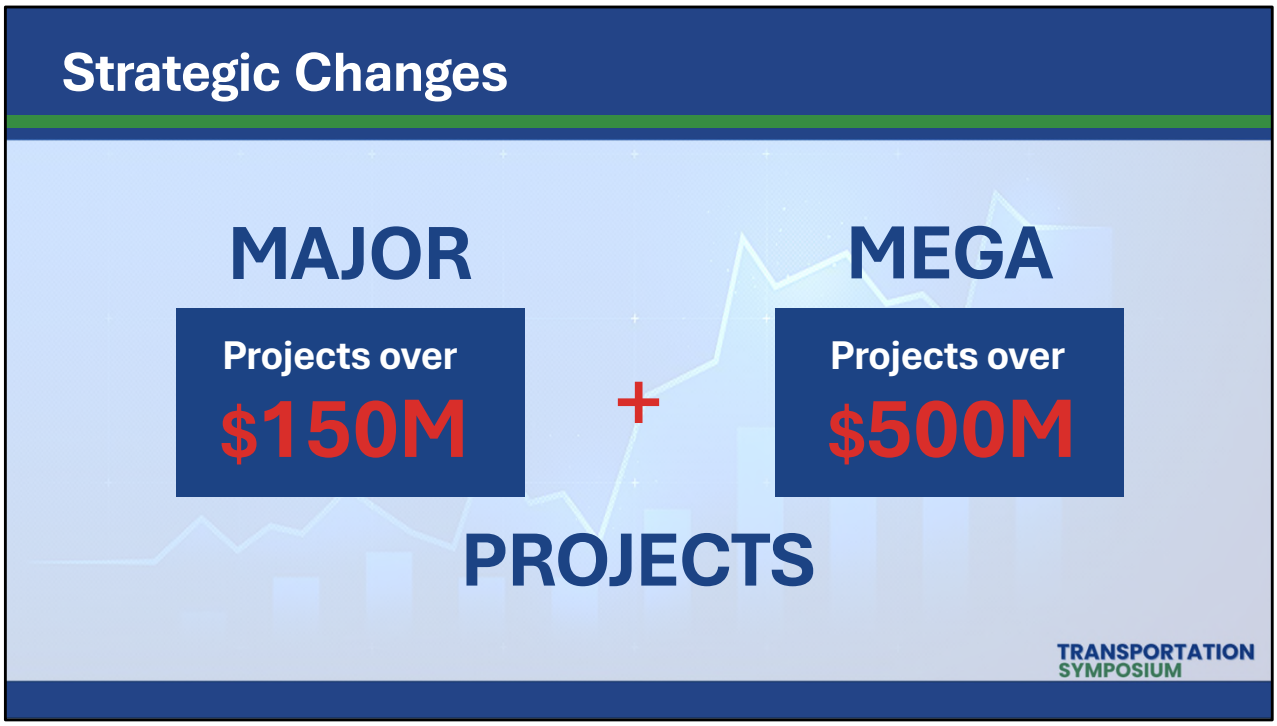


The new Forecasting and Performance office will have three main program areas.

- **1st:** Forecasting and Project Cost, formerly the State Estimates Office, will revamp policies and procedures for pricing and establish forecasting as a useable tool. This section will also determine the cost for projects over $150M – that's the Independent Project Cost (IPC) process we'll talk about in a moment
- **2nd:** Local Programs will focus on programs like SCRAP, SCOP, and LAP. This section will also add grant administration expertise to the Engineering and Operations team.
- **3rd:** Project Management and Contract Performance will focus on making PM a profession in FDOT with a new Transportation PM training program. This section will also add scheduling expertise within Central Office, add a contract performance group for all professional services, construction, and maintenance contracts and formalize the alternative contracts delivery group.



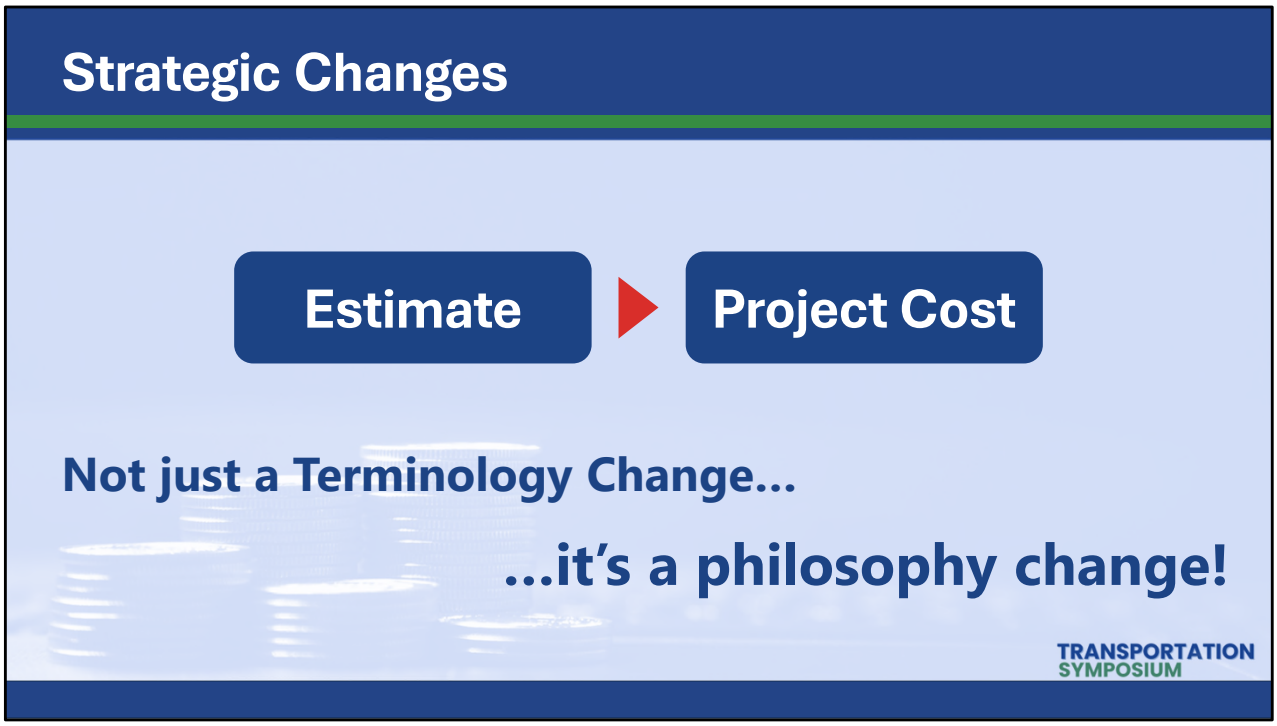
That means the Project Management team will be moving from Design and Contract Administration and Alternative Contracting teams will be moving from Construction to complete Forecasting and Performance Office.



Another strategic distinction we are making is between major projects, over $150M, and mega projects, over $500M.

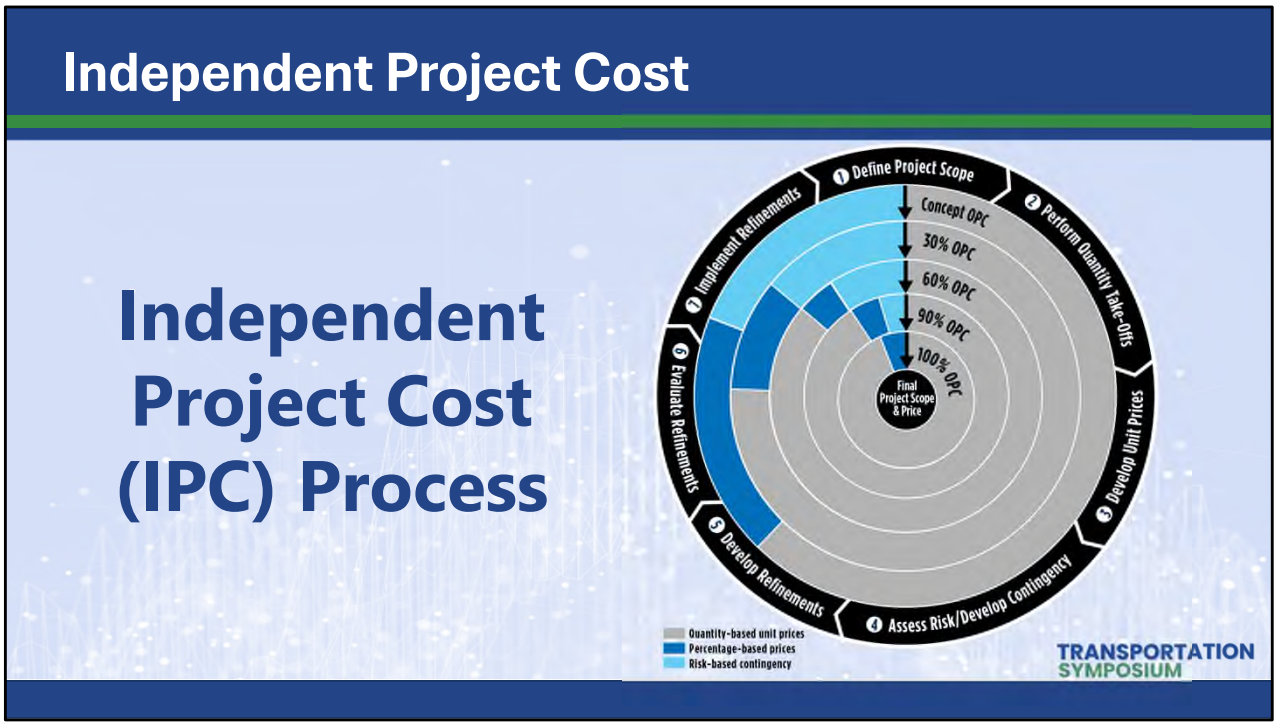
We plan to focus our efforts on fitting the right Project Manager to the right project and to go one step further on mega projects: we plan to establish dedicated Project Managers who will work full time to see our very large high-profile projects complete successfully throughout all project development, design and construction phases.

We also plan to establish two multi-functional area project review boards that will ensure risks are fully identified and considered during each step of major and mega projects. The Chief Engineer along w/ District Leadership will make up a major projects review board to evaluate the delivery schedule approach, cost, delivery method & project staffing.



As part of our Forecasting and Project cost effort, we are transitioning away from the term “estimate” and moving to “project cost”. This isn't just a name change, but a philosophy change to emphasize the importance and reliability of project cost to delivering our commitments to the public. We have had a habit of holding on to older estimates to "meet" budget and avoid missing performance measures. These practices have set us up with a lot of risk and few major misses in the past couple of years, so we want to make a shift in our mindset to help address the risk head on.

We are still analyzing the full impact of this terminology change and are in the process of determining all the possible replacement terms. This not only affects our vocabulary – it’s really hard to not use the word estimate when you haven’t realized the cost yet. It affects our applications, procedures, handbooks, resources, guidance, website and more. Management feels the word estimate inherently has forgiveness built in so they want a word that embodies confidence in our pricing so when we establish project cost it feels less like an approximation and more definitive with more confidence behind it. And building that confidence is where developing cost from a contractor perspective comes in with the Independent Project Cost Process.



The IPC process that was implemented January 1, 2024 for projects (or proposals) over $150M regardless of delivery method.

If you've heard about ICE (Independent Cost Estimate) before – that's an IPC but rebranded for FDOT. IPC reviews will start in PD&E and continue through each phase of development. These reviews will be performed by consultants with construction contractor backgrounds. The IPC teams will review the project from that contractor perspective.

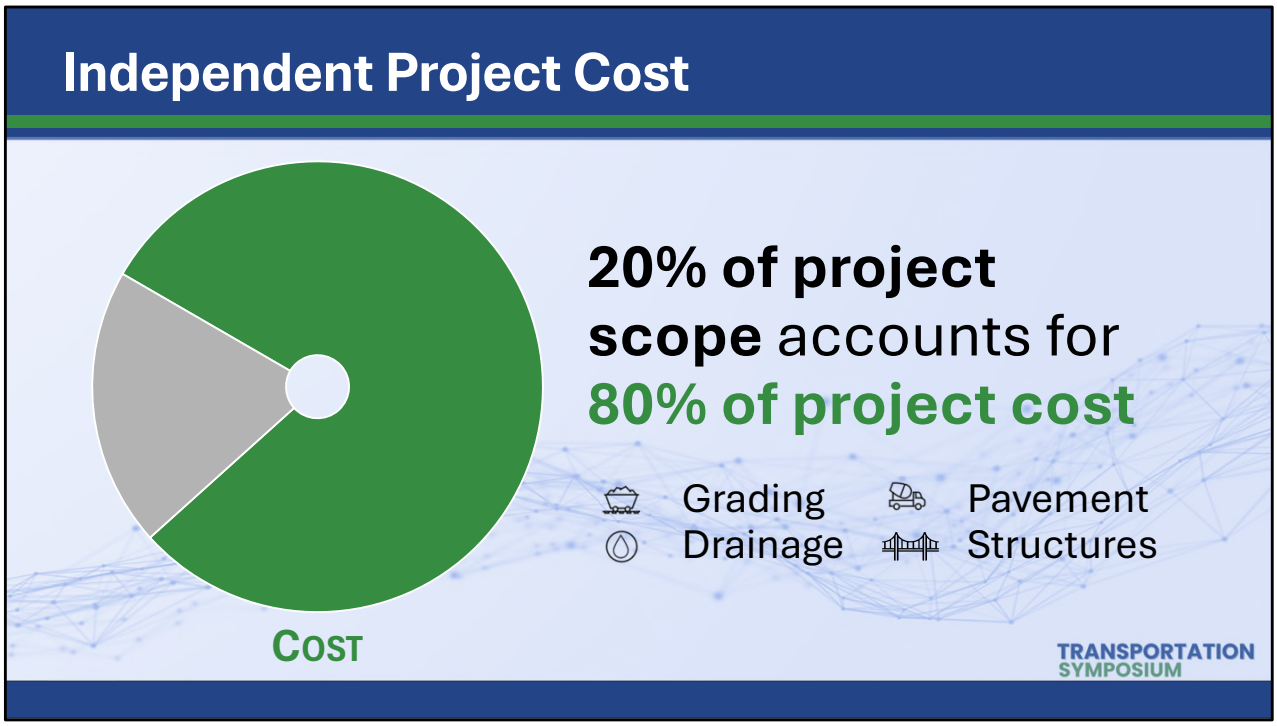
At the beginning of the IPC process the project cost includes contingencies and percentage-based pricing for many items. Then as the project scope is defined, the Project Cost becomes more precise, including less and less contingency. As projects approach final design and construction, the IPC team will study project specific conditions and evaluate cost bottom up using current local market pricing.

I'm sure the text is difficult to read, but on the outside of the circle we have the design progression cycle

- Define the Scope
- Perform Quantity Take-offs
- Develop unit prices
- Assess Risk and develop contingency

Develop, evaluate and implement refinements
And we are back at the top to start the process again

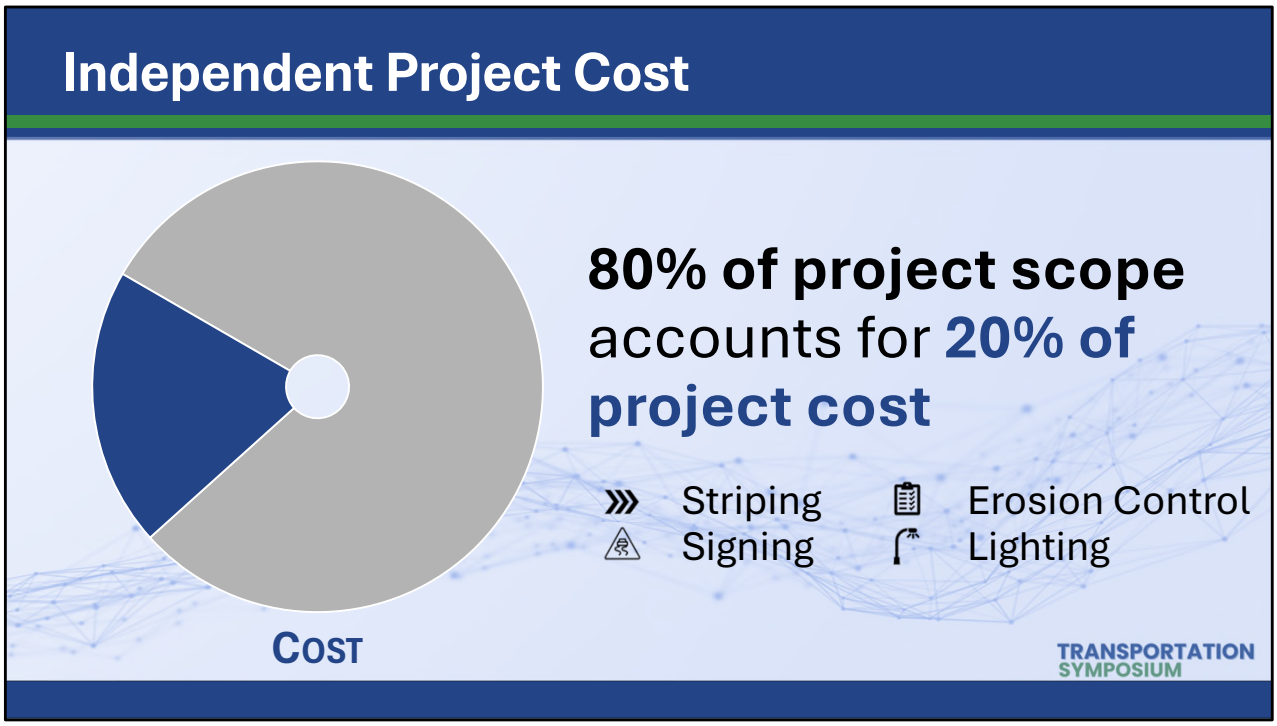
We will go through this cycle many time as we move from concept thru each phase of design to final project scope. And as we move thru the cycle, the opinion of probable cost (OPC) in the chart, or for our case the IPC, will start off with some quantities and percentage-based items and a lot of risk-based contingency. Then as we move to final project scope, the percentage-based pricing and contingency gets reduced by the refining the design and accounting for the risk. Ultimately, we are aiming to have an IPC that is very close to the eventual low bid. This will ensure we are ready to advertise the project and have the appropriate funding budgeted.



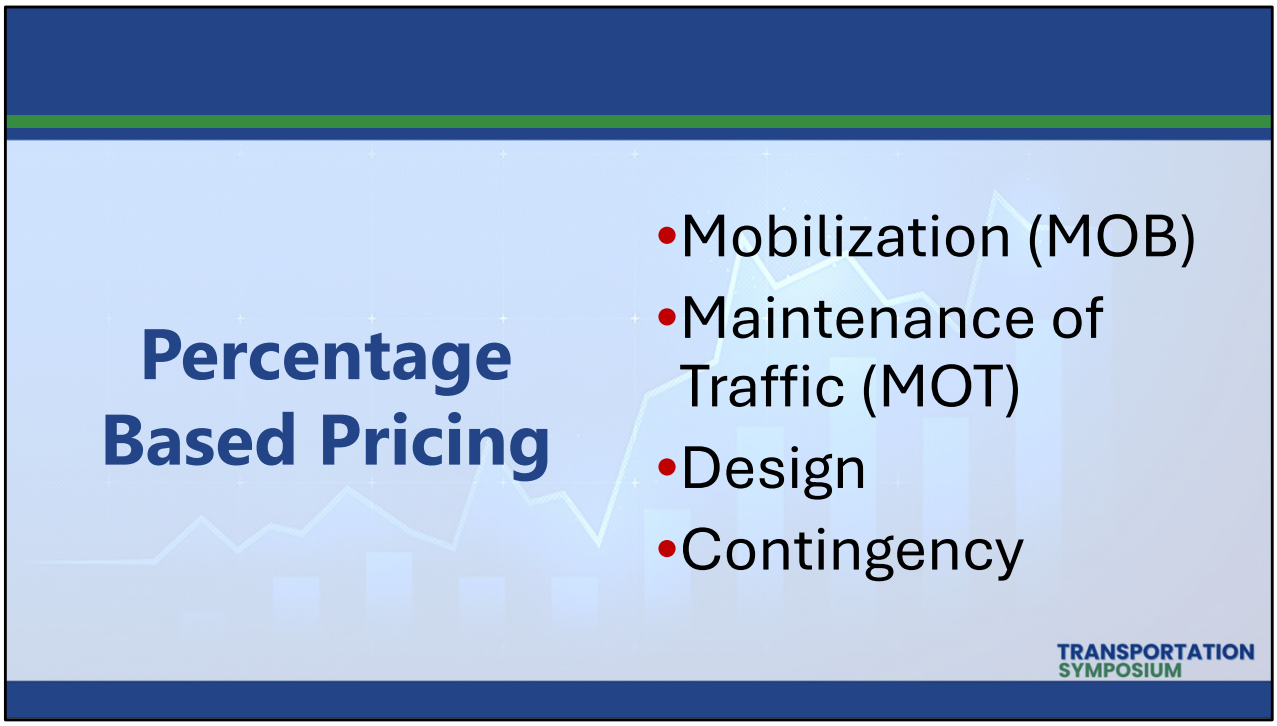
Let's start off talking about what the IPC review looks like when we have a detailed design and reliable quantities. These projects are evaluated with analytical estimating – this is the bottom-up approach I mentioned on the last slide.

The bottom-up approach uses the Pareto Principle to focus on the 20% of scope that makes up 80% of the cost. The IPC team uses the Engineer's Project Cost from LRE or DQE to establish this 20%, but it's the generally the big-ticket items like grading, pavement, drainage and structures, which are also the items the prime contractors typically self perform. The bottom-up evaluation is the most detailed type of cost estimating, where you break the item into smaller activities getting more granular, assigning costs to these smaller activities, then aggregating these cost back up to the overall cost.

The IPC team will build the cost up for these items by establishing assumptions for production, resources, and crew sizes for each item of work. They'll also consider options for haul distances, form rental, material pricing, subcontractor pricing, transportation costs, etc. Then they'll roll all those costs up into the item cost. If there are different areas with different assumptions and cost, each area item cost will all go into determining the overall item cost for the project.

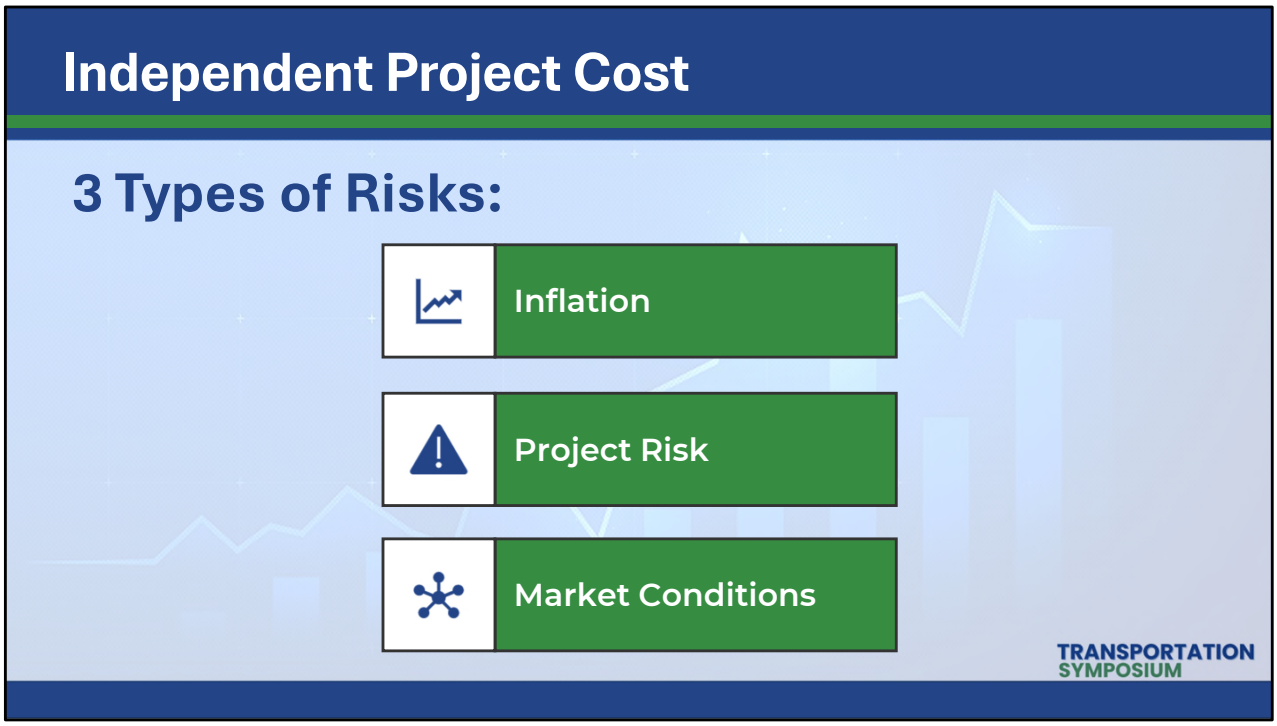


The remaining 20% of item costs are carried over from the Engineer or the IPC team will use parametric estimating techniques like adjusting historical market pricing for the project variables. These items are typically subcontracted items like striping, erosion control, signing and lighting. The IPC teams use several databases of pricing data that they analyze before determining the appropriate cost for the project. They not only look at the specific project county or market areas but several around the project as well as multiple time frames – not just the most current. Outliers are thrown out if quantities are extremely high or low. This is probably very similar to the how you've determined project cost or have seen project cost determined before.



Now let's talk about projects that are in early development phases or delivery methods that won't have a finalized design for the IPC to review like design-build. The IPC for these projects will have some items and quantities that can be estimated like we just discussed, but many items will be percentage-based pricing.

Percentage based pricing is establishing a price based on a percentage of the cost of certain line items or the overall cost. A standard example is MOB which is typically 5-10%, but these days sometimes even more, of the overall project cost. Design-build contracts usually have an item for design that is percentage based as well. MOT and contingency are a couple more examples.



Contingency is a percentage-based item applied to account for different forms of risk.

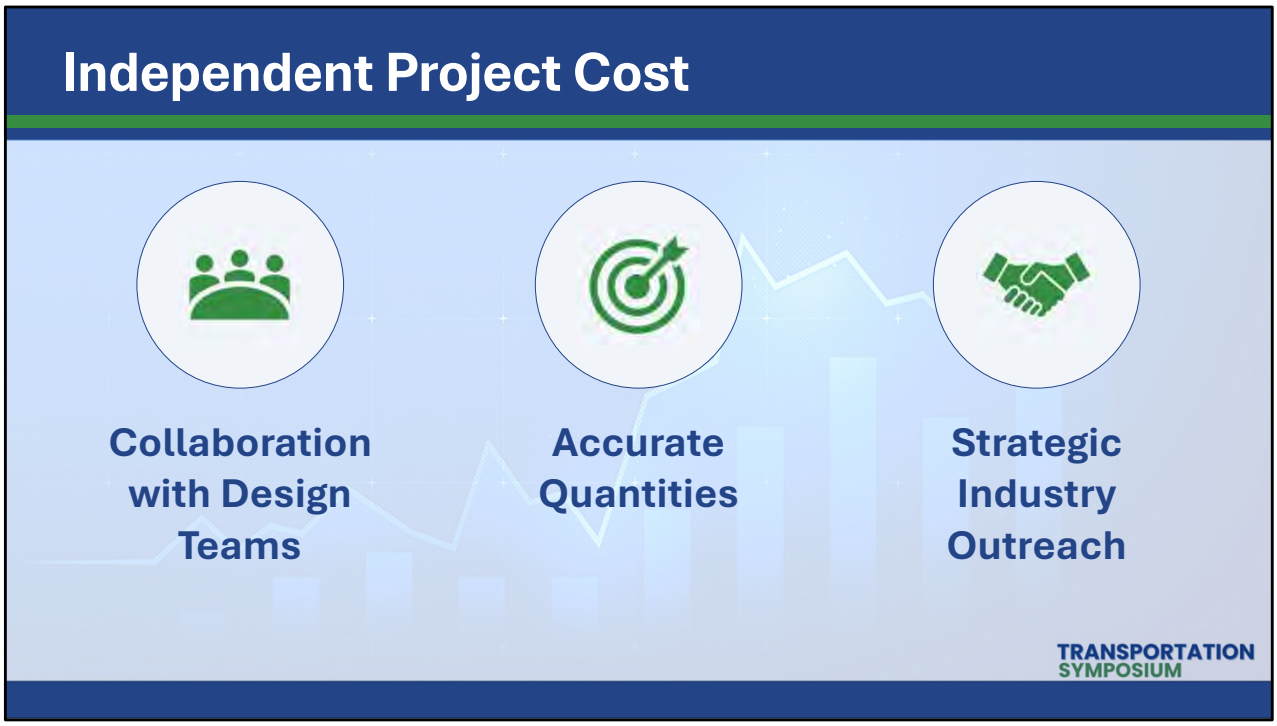
The bottom up and historical pricing are good methods to establish present day cost, but the first type of risk is inflation. There are tools out there to help make an educated guess on inflation – the Consumer Price Index (CPI), Producer Price Index (PPI) and the one that is most reliable for our industry FHWA's Construction Cost Index. These are all rear facing and are typically a quarter or 2 behind before they update. You can get an idea on trends and you can make assumptions on where things are going, then include a percentage in the project cost as inflation contingency.

The second type of risk, and the one we probably want to focus on the most, is Project Risk. What are the potential drivers that will affect the project? Most people know right of way, utilities, and unforeseen conditions are common project risks. These are major items that can impact the project from cost and schedule perspective, but there are a lot more that should be considered. A risk register is created to identify all the project risk items, then it is used to help guide the designer to mitigate risk thru the design progression. Once we've mitigated as much as we can thru design, we quantify the cost and schedule impact that should be accounted for in the project cost as project risk contingency.

And the third type of risk is market conditions. Market conditions have been more

important in the past 4-5 years than they ever have been. There is a strain on the market with the money flowing in for infrastructure, not just in Florida, but nationwide. Contractors are more selective on the work they are going after and we are seeing less bids than we've seen before. Contractors that choose to bid may add more volume to their portfolio than what they normally take on which requires more resources, and ultimately increases cost. It is important to add contingency for market conditions as well.

A couple of contingency examples are Marine Premium to account for the risk associated with significant expense of long term rental of barges and cranes and design-build contingency to account for the unknowns of an early design-build project.



Collaboration and coordination between the IPC and design is critical, especially early on, to ensure the IPC team understands the full scope of the project and to develop and validate quantities associated with the 20% of items that drive cost. Assumptions will need to be made for items early on, as well as on design-build contracts. Because accurate quantities are needed to build up labor, equipment, and material costs. Understanding and documenting the basis of how quantities were derived will help refine the IPC as the project develops. It is also beneficial when looking back at the IPC after the bids come in to determine which items needed adjustment and apply lessons learned to future projects.

The IPC teams will strategically reach out to local subcontractors and suppliers to get market prices. Industry is generally willing to provide input once they understand it gives projects and the program a better chance of overall success. The IPC team does not share project specific details, and care is taken not to over-exercise the market. We do not want to preclude anyone from bidding or pester vendors with frequent requests.

Independent Project Cost

- **Once an IPC is complete:**
  - IPC totals are shared with District staff
  - CO and District leadership will use IPC to determine if a project will be advertised
  - Districts are required to fund the IPC amount

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Now that we've talked about the IPC process, here are a few things you should know.

We will share the IPC total, narrative and spreadsheet with the District staff. And they will likely share it with the design team.
I'll set up a meeting with the District staff, EOR and IPC team to discuss any quantity differences and answer any questions about the IPC. I like to use this meeting as a feedback loop – not only for the design team, but for the IPC team as well. The more we all learn thru this process the better it will work.
CO and District leadership will review the IPC total alongside the programmed amount and the authorization project cost, then they will determine if the project can be advertised.
Ultimately the District is required to fund the IPC amount if approved to move forward.

Independent Project Cost

- **IPCs completed so far:**
  - D4 SW 10th
  - D6 Okeechobee Road
  - TP Widen Turnpike MP 94-98
  - D5 I-75 South
  - D5 I-75 North
  - D3 Dupont Bridge

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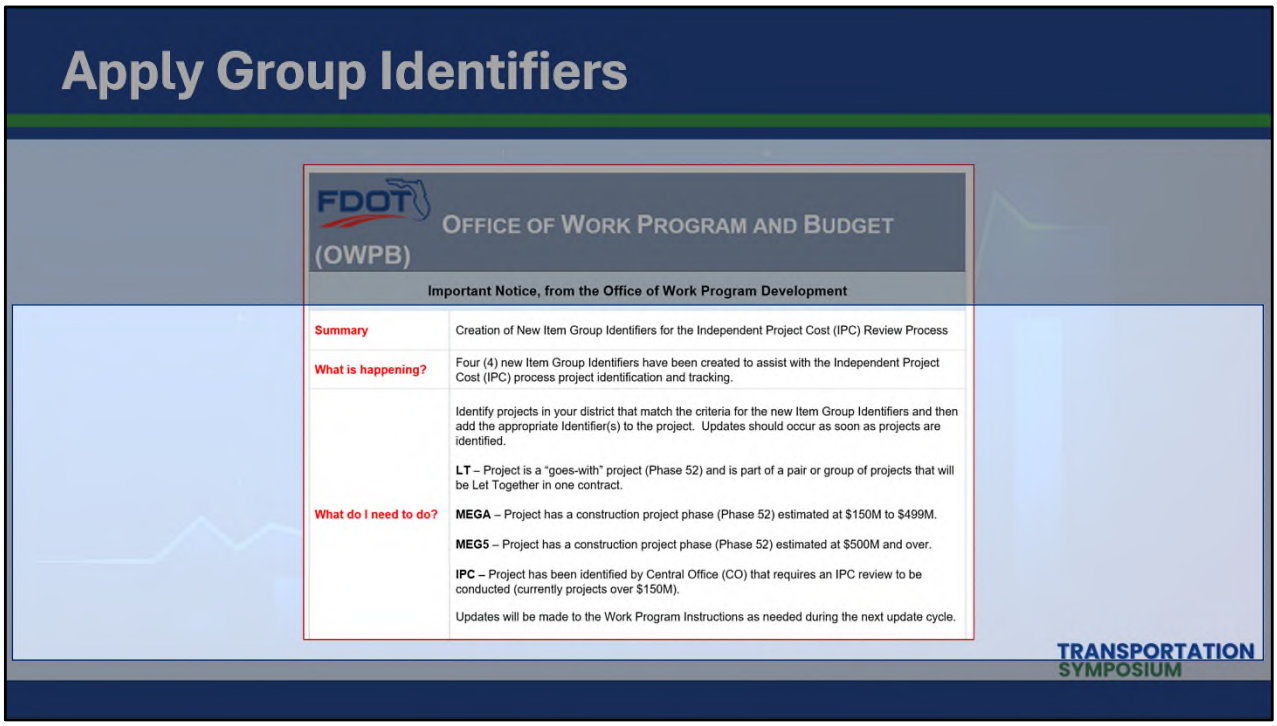
So far this year we have completed 6 independent project costs. Projects with letting results have IPCs that are coming in within a few percentage points of the low bids. Okeechobee Road, Widen TP, and I-75 North are all conventional projects. Dupont Bridge was our first design build project. SW 10th and I-75 South are both phased design build projects.

Soon, we will start performing IPCs on projects further out into the work program and determine what the process looks like to start in PD&E and move through the development cycle. For now, we are continuing to work thru the backlog of projects over $150M with at least 9 more IPC reviews this coming fiscal year and are focused on doing 1 IPC review right before advertisement to validate the budget.

How can you help?

TRANSPORTATION
SYMPOSIUM



Forecasting and Project Cost has been working very closely with Work Program to identify and track projects that qualify for Independent Project Cost reviews. But that has come with several challenges that we need your help with. Work Program issued this guidance to help.

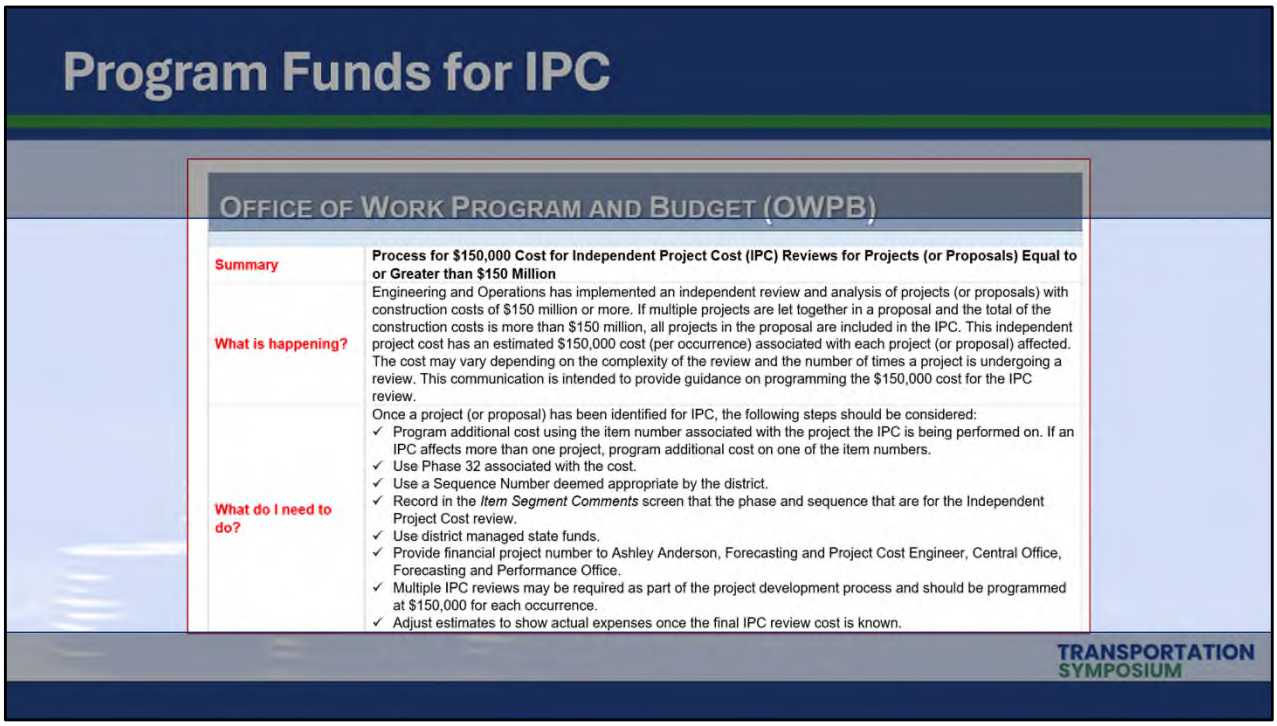
<CLICK>

Since IPC reviews apply to proposals that exceed the $150M threshold even if each individual project does not, we need the ability to identify when this occurs. We try to use proposal numbers when projects are grouped together in AASHTOWare Project Preconstruction (PrP), but most districts do not currently do this early in the development process. And we have found that the Work Program LT identifier for goes with projects is not consistently used or updated. Please ensure your district is using the LT identifier and proposal numbers to group projects together. It's worth noting we realize plans change, so it is expected to have projects grouped for a period then ungrouped as scope and funding changes. We also know this is creates extra steps, but please know this effort is worth our systems being more accurate. When you know something is changes, it really helps for work program and forecasting and project cost to know as well.

In addition to the existing LT group identifier, Work Program created 3 new group

identifiers:
MEGA for projects over $150M
MEG5 for projects over $500M
IPC for IPC reviews

We need you to use these identifiers to help us report on major and mega projects more effectively. Please work with your program management and work program administrators for us and get these identifiers added as soon as they are applicable.



We also need your help to ensure each applicable project has funds program for IPC. Work Program issued guidance for this as well.

<CLICK>

You only need to program $150,000 of Phase 32 funds on the lead project for proposal since we won't separate funding for all projects in a proposal.
The District can choose the sequence number.
IPC funds must district managed state funds
Once funds are programmed for your project let me know! I'll add it to our tracking information.
Funds will be adjusted to the actual expense, so any remaining funds can be used for other things.

Provide Project Reference Documents

List of reference documents to be provided for IPC reviews *(not all inclusive)*:

Concept Plans	RFP
Phased/Final Plans	Specifications (may be with RFP)
Typical Section Package	Nearby project info (past/future)
Pavement Design	Geotechnical Reports - soil borings
Construction Schedule/sequence	Bridge Development Report
Contract Duration Estimate (time)	CSRA
MOT Schemes (if not complete design)	Studies: Noise Wall, Lighting, Drainage, Signals, etc.
Procurement Schedule	CADD files
ROW	KMZ files
Permit Info	Utility/SUE
Quantities (minimum required as design-build)	

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For the development of the task work order scope and fee, the IPC team will need general project information and scope resources like a PD&E schematic, narrative project description and what phase of the plans they'll receive when preparing the IPC.

For the development of the actual IPC, the IPC team will need any documents that will help them understand the full project scope. We've put this list together so far. It certainly isn't all inclusive and of course not all documents will be available on all projects.

Please be prepared to provide these documents upon request.

FAQs

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FAQs

When was the Independent Project Cost process implemented?

January 1, 2024

TRANSPORTATION SYMPOSIUM

FAQs

What requires an IPC Review?

All projects or proposals over $150 Million (regardless of delivery method)

TRANSPORTATION SYMPOSIUM

FAQs

How many IPC reviews will be performed per proposal/project?

For now, 1 right before advertisement

Eventually, 1 at every phase of development

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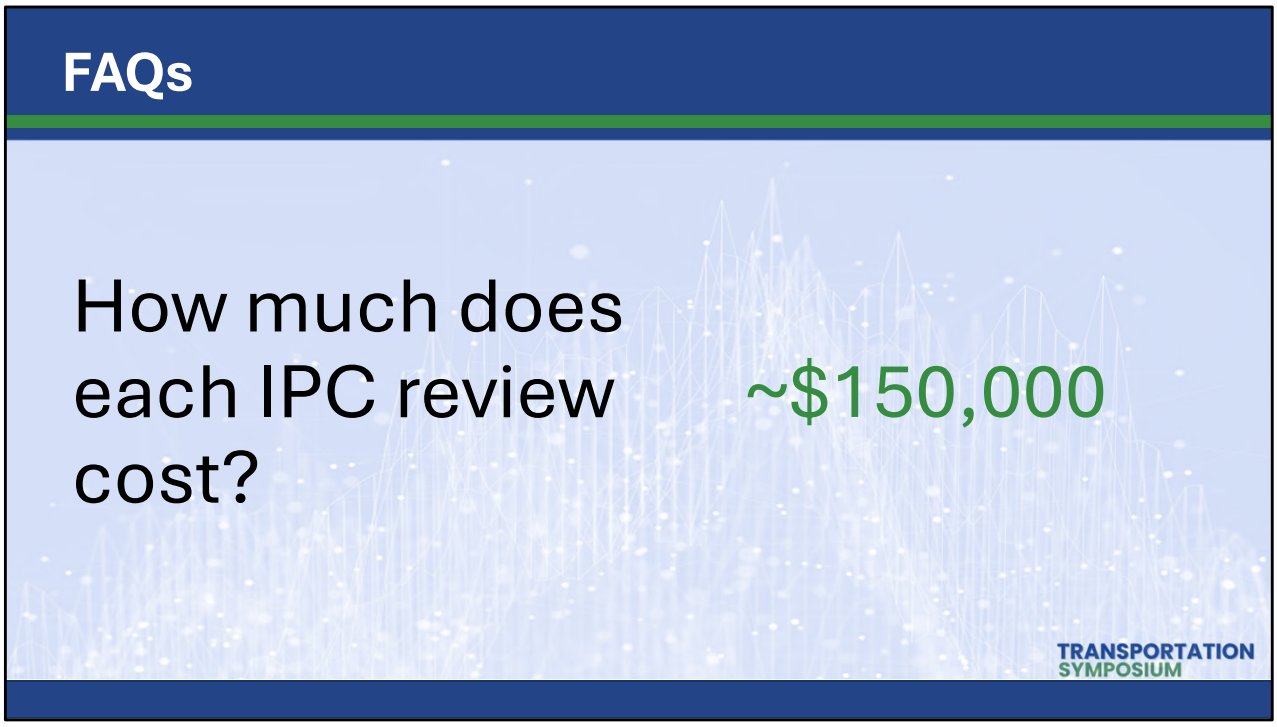
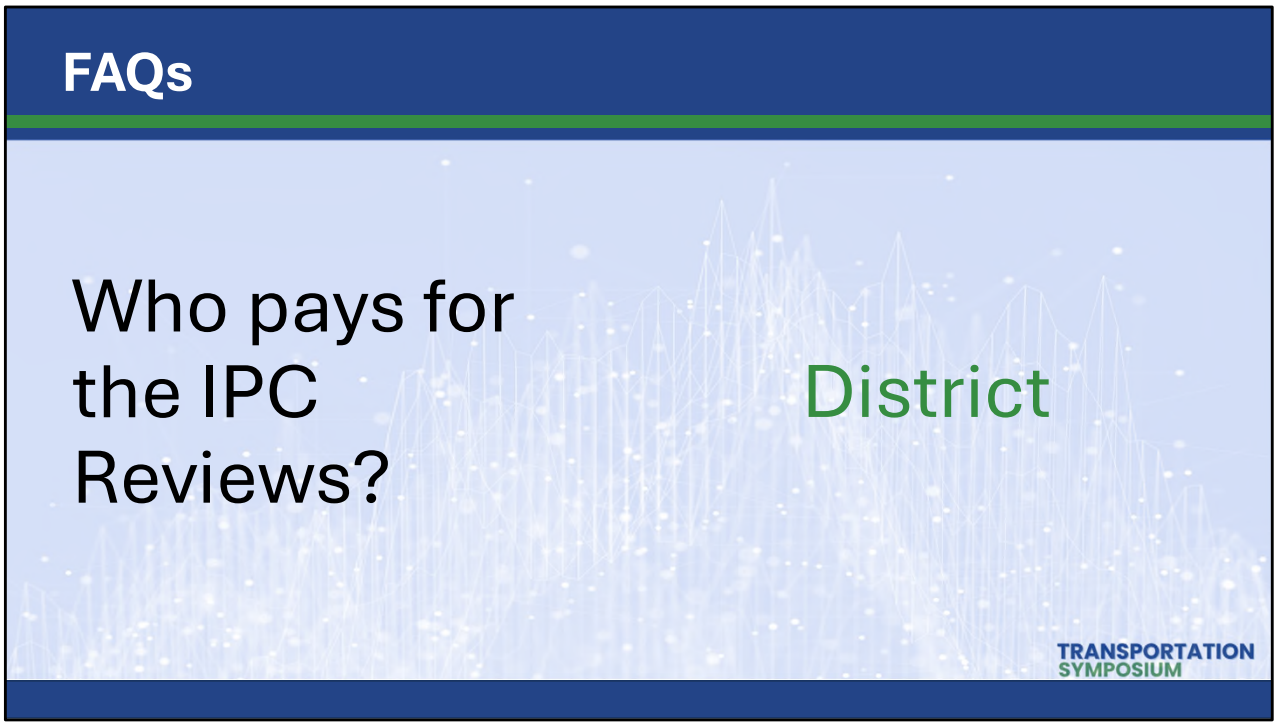


IPC reviews cost around $150,000. The cost of most IPC reviews so far have come in under this amount, but we've had a couple that have required additional resources that have come in slightly over. This cost is per review, so it covers all projects in a proposal or just the individual project depending on the case. As we move to reviewing projects at each development phase, we'll adjust our expectations for subsequent reviews because project assumptions, quantities and contingency will need to be updated, but the project discovery should be less and less with each review.



Each district is responsible for programming and covering the cost of required IPC reviews.

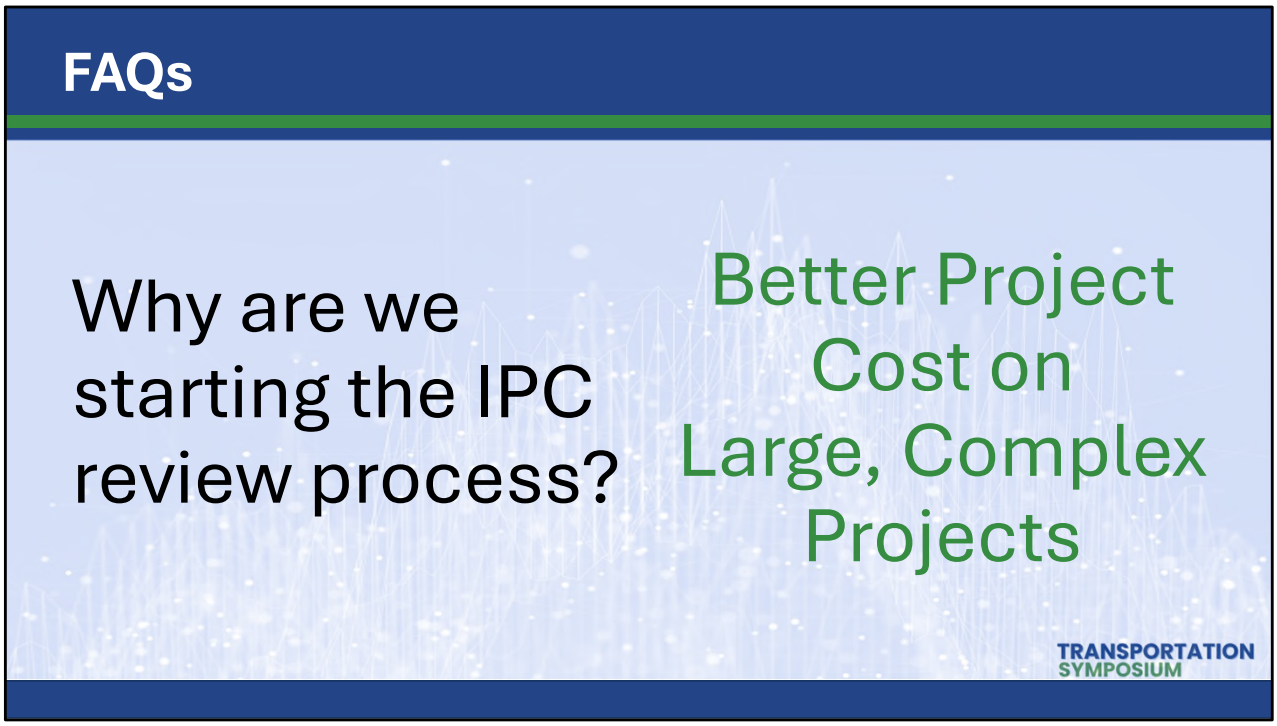
FAQs

Will IPC reviews replace the District process for establishing project cost?

No

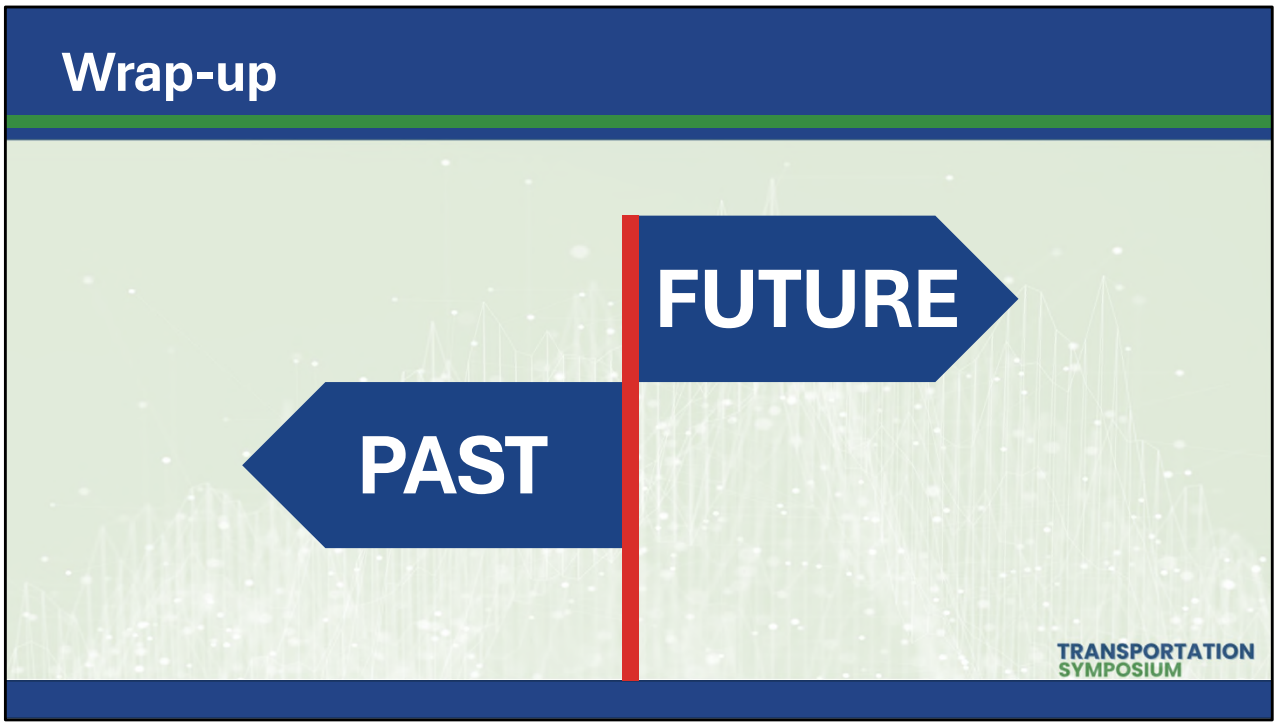
TRANSPORTATION SYMPOSIUM

No – we will continue to build our own internal project cost and the IPC process will run parallel to that. There will be periodic check ins and cross checks as these are built independently of one another, so we don't have surprises right before letting or when bids come in.



In short, we've had some surprises on some large projects. And when we have surprises, we have to stop and adjust. Sometimes that means that project can't move forward, but a lot of times it means several smaller projects have to be shifted around. Another part of us adjusting is putting a magnifying glass on our estimating process.

For years we have built our project cost, then the contractors builds their cost and they meet in the middle and very often we are are right on. But we've learned that on large projects, complex projects, projects with intricate phasing, and long duration projects, we need more tools in our tool box to establish project cost. We are using the IPC process to ensure we can gauge what the market is going to do, so we can deliver our work program without those surprises.



To wrap us up, I'll give a quick run down of what we've done in the past and how we are moving forward in the future.

Traditionally for project cost development, we have:

- Established historical unit prices and monitored trends much like the 80% of items in IPC reviews
    - It's been said that this process play catch up to the current economic conditions. Our bid prices take a cycle or two to indicate current market conditions, so our projects cost follow that cycle which can leave gaps between budget and low bids
- Considered market conditions, project location and unique project conditions to adjust estimated unit prices but we don't build the cost bottom up
- Focused on estimates needed to establish and update budgets
- If we have scenarios where there is a disparity between project cost and budget, then we adjust the project scope to fit budget by splitting big projects up or removing "goes with" projects or even delaying project lettings

Moving forward, we will:

- Continue the traditional methods mentioned on all projects by our District staff while bringing Central Office into the Production Cycle with the Indepent Project Cost

reviews
    - My hope is to take lessons learned from the IPC process and help add more tools to our District estimators tool boxes
- In parallel to the District processes, Forecasting and Project Cost office will ensure Independent Project Cost (IPC) is established on projects over $150 Million so we set our budgets appropriately

And to round out our effort, we've identified a couple of other effort and I'm sure there will be more to come:

- Establish an index of project cost to better forecast economic impacts to help eliminate the lag in historical data I mentioned earlier
- Collect pay item data on lump sum and design build contracts to fill gaps for those contracts in historical unit prices

As you can see, we are implementing quite a few changes in order to enhance our confidence in project cost so we can successfully deliver our work program.

Safety Message

FDOT

TARGET ZERO
FATALITIES & SERIOUS INJURIES

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And we'll end with a safety message: for more than two decades, speeding has been involved in approximately one-third of all motor vehicle fatalities. Please stop speeding before it stops you. Slow Down to Arrive Alive.

Contact Me

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Forecasting and Project Cost Section
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Forecasting and Project Cost Engineer
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850-414-4184

TRANSPORTATION SYMPOSIUM