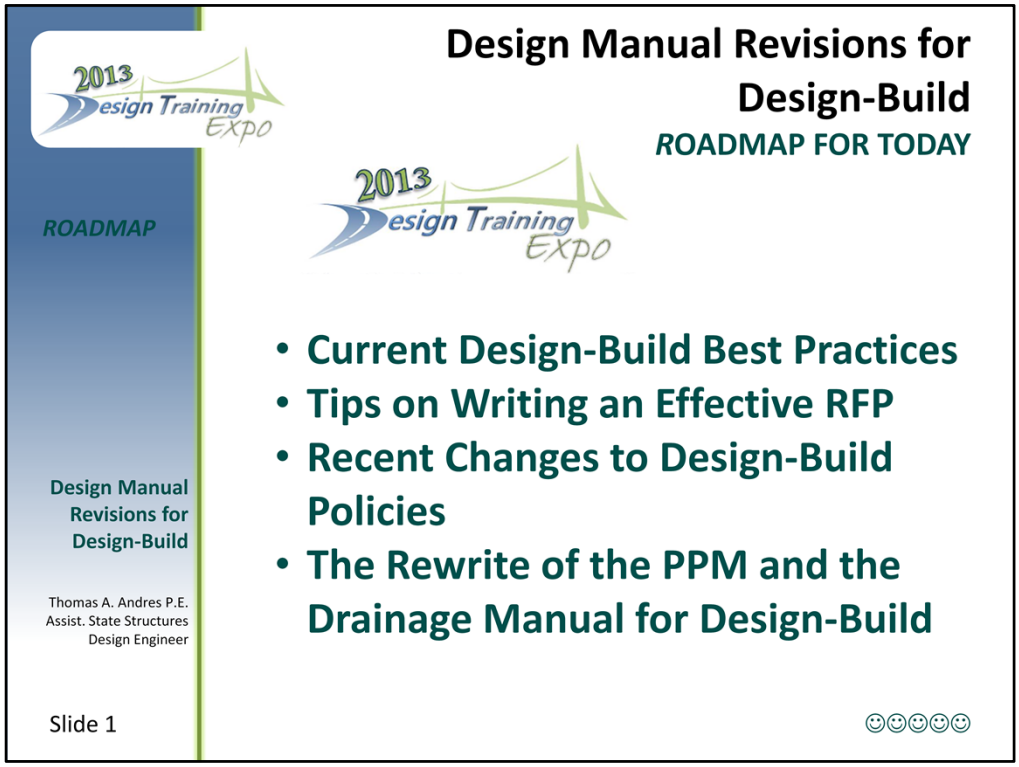


Good afternoon. Let's go ahead and get started. We have a lot of information to cover in this session. It is a pleasure to be with you today. My name is Tom Andres. I work in the Structures Design Office in Tallahassee where I oversee the Bridge Plans Review Group. I am here today with Frank Sullivan, the Roadway Design Administrator. We are here to talk about design-build related changes within the Office of Design.

The title of this training session is: "Design Manual Revisions for Design-Build". But this session will also cover other items related to design-build. Today:

-☺- I plan to discuss the latest "best practices" in the area of design-build – certainly these "best practices" have been developed based on "lessons learned" from the dozens of design-build projects that we have procured over the last fifteen or so years.

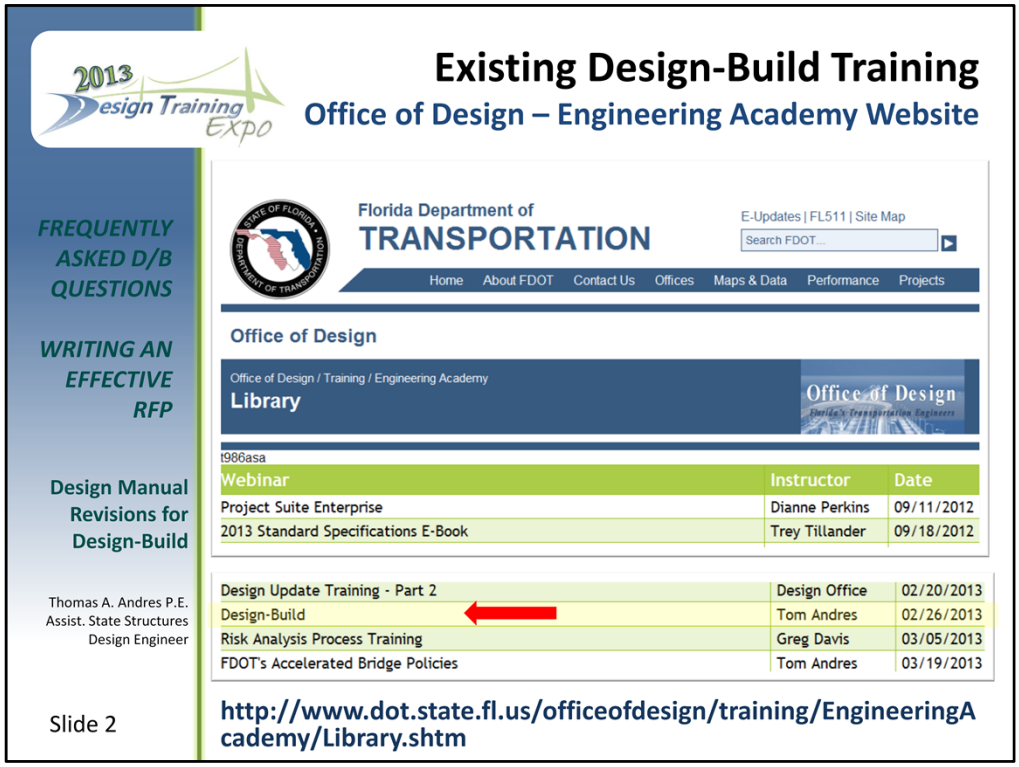
-☺- I'm going to briefly discuss strategies for writing an effective RFP.

-☺-Then I going to give you a quick overview of some recent design-build policy changes.

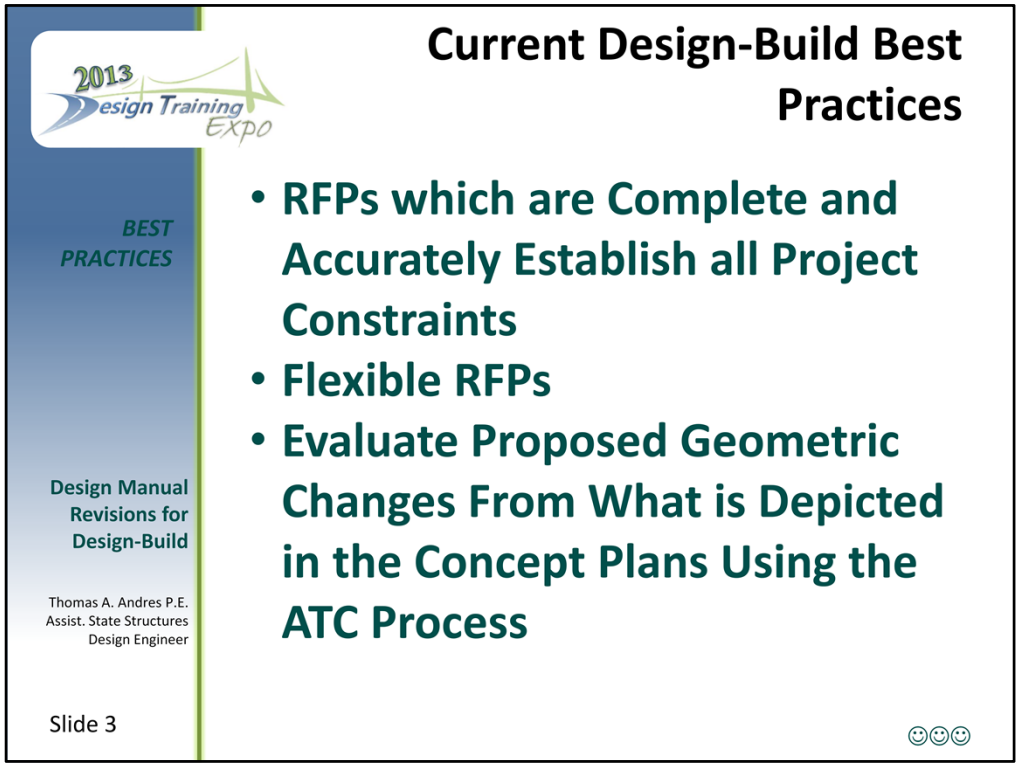
-☺-☺-Then I am going to turn it over to Frank who will discuss changes to the PPM and the Drainage Manual, Respectively.

One thing I will point out: Dan Scheer will be covering the Structures Manual Rewrite for Design Build here at the Expo. His training is tomorrow at

9:00. I will not be covering any of that here today.



Before I get started, let me point out that there is design-build training already available as part of the Office of Design Engineering Academy Webinar Series. The webinar conducted back in February is posted on the Engineering Academy website. The training addresses some "frequently asked questions" about design-build that really explains many of the Department's underlying philosophies and policies. Also included in the training are some useful tips for writing an effective RFP. I am going to give you a very broad overview of writing an effective RFP in today's discussion, but I highly recommend that if you want a more detailed discussion, that you go back and view this training.

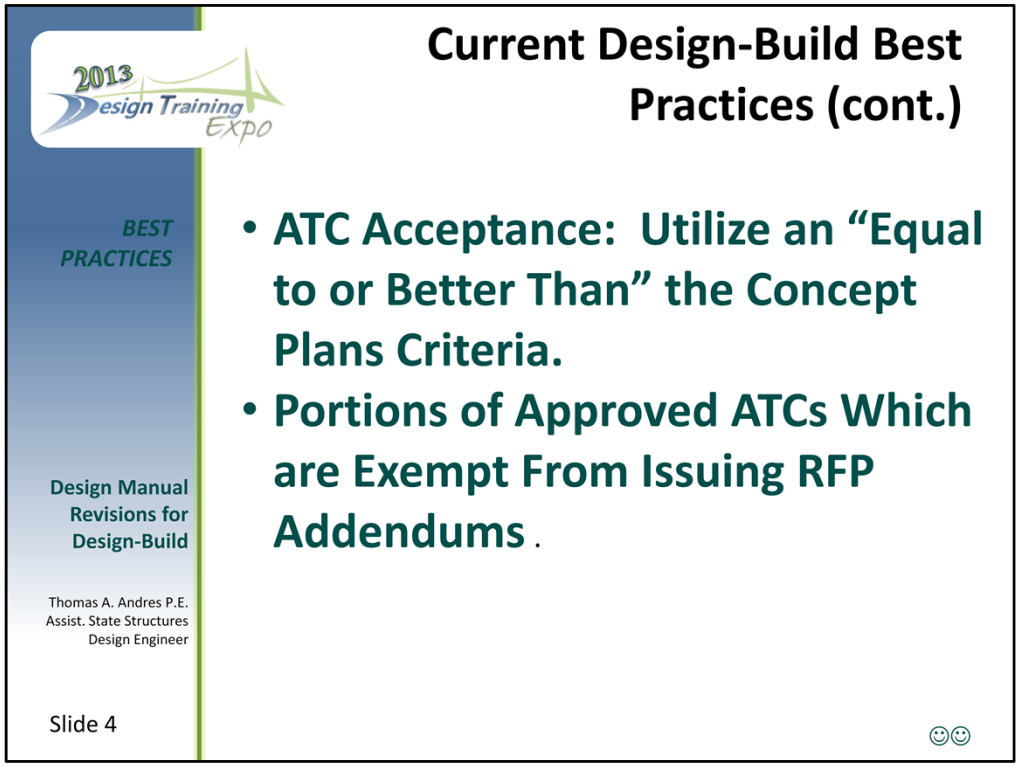


Okay let's go ahead and get started. Let's talk about FDOT's current best practices as it relates to Design-Build which are based on the "lessons learned" from many past projects.

-☺-the first useful best practice I want to mention is to make sure that the RFP is complete. That it accurately depicts all project constraints. The Department has developed Pre-scoping Questions to help establish project constraints. These questions are posted on the Construction website and the link is given at the beginning of the design-build boilerplate language.

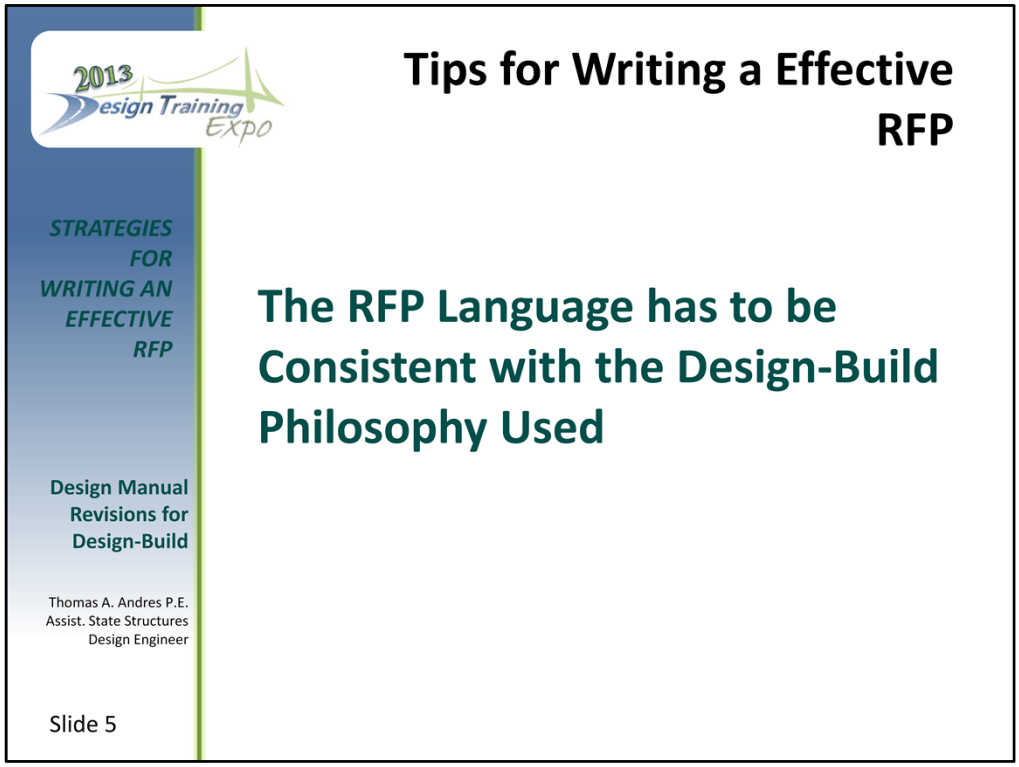
-☺-the next "best practice" is to write a flexible RFP – I will talk more on that in a minute.

-☺-also it has become the norm throughout the Department, to require all Design-Build Firm proposed geometric changes which deviate from the Concept Plans to be presented as an Alternative Technical Concept so that they can be vetted and approved prior to allowing the team to proceed to technical proposal. On this point, the district needs to have the appropriate experts involved to properly evaluate each ATC proposal.



-☺-it is important is to specify the evaluation criteria in the RFP which measures all ATC proposed changes against the Concept Plans – here we have endorsed an "equal-to-or-better-than criteria" - more on how that is accomplished a little later.

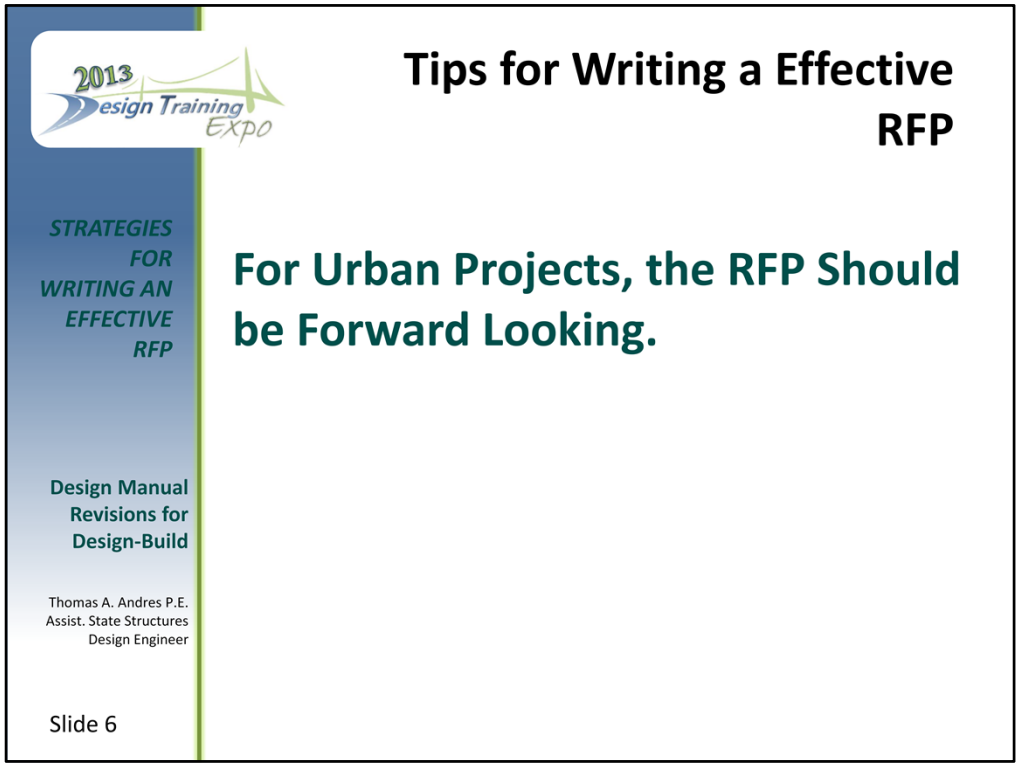
-☺-lastly we have learned that issuing RFP addendums based on approved ATCs is a tricky process – especially if the RFP does not anticipate, in advance, proposed changes – the problem of course, is how do you make an agendum to the language, if the original language is too prescriptive in the first place without giving away the idea. To solve this conundrum, the department endorses the idea of not issuing RFP addendums except for where the proposed change requires an exception, requires a variation , or involves a "change in project scope".



Okay changing gears here a little bit.

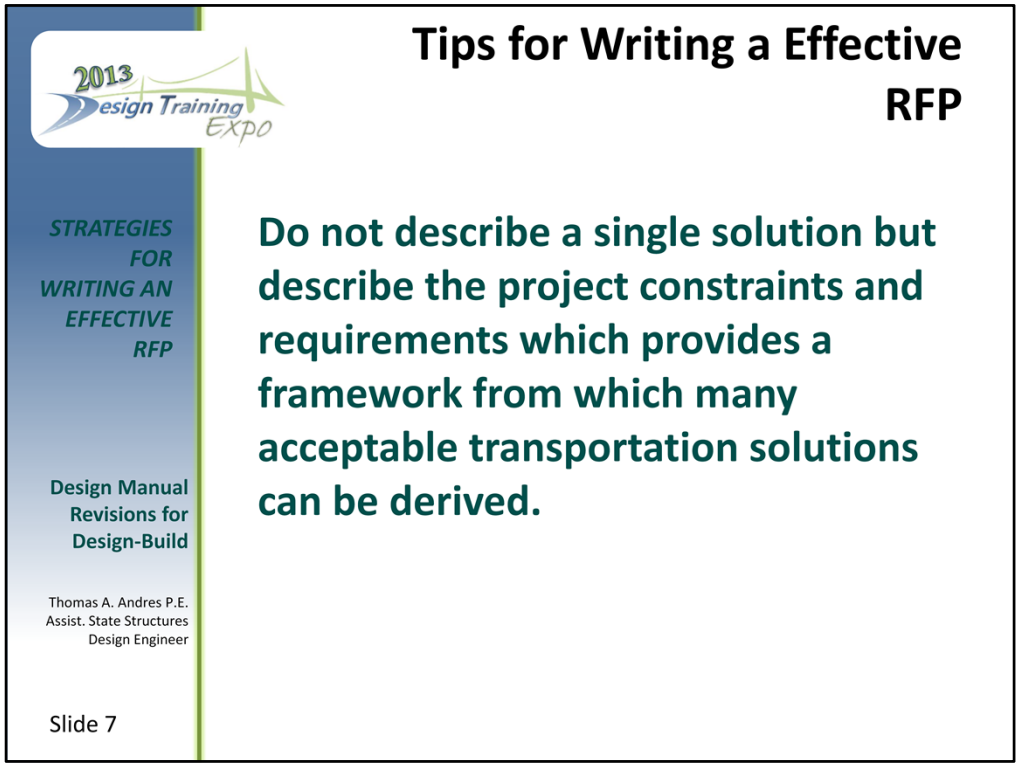
Let's discuss some of the strategies for writing an effective RFP. As I mentioned earlier, I will only cover the high points here, for more detailed information refer to the Engineering Academy webinar video posted on the Office of Design website.

The first point in writing an effective RFP is to acknowledge that the design-build philosophy has to be sorted out for each project first, before you can successfully draft the RFP language - because the two go hand in hand. So get with your district project manager early-on for guidance – but I will say that a good place to start, is the previous two slides describing the Department's best practices.



For all urban projects, RFP design considerations need to be forward-looking. That is to say, you need to define the ultimate build-out requirements in the RFP whether there is an official Ultimate Typical Section or not. This will serve to avoid costly "throw-away" work when the transportation facility is expanded in the future.

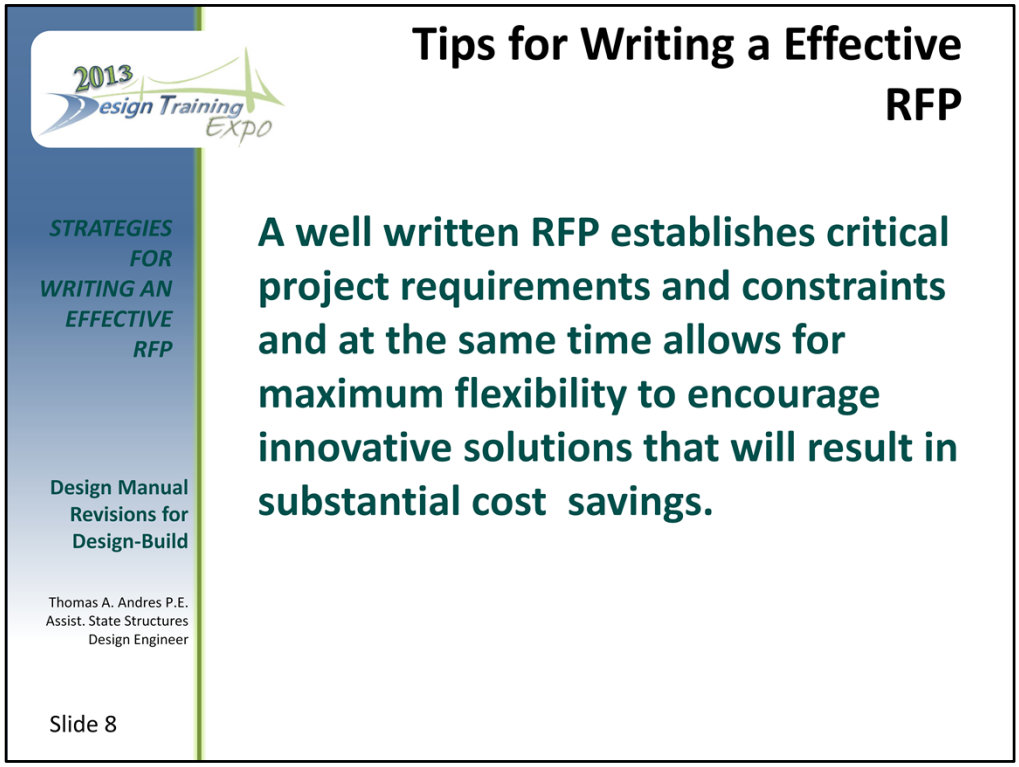
The important thing to consider here is that all project solutions should be evaluated based on current short term cost and best-value implications, and also on future costs associated with future expansion of the transportation facility. What you do not want is a solution that boxes you in the corner limiting expansion options in the future – I will cover this later in the presentation, but the new boilerplate evaluation criteria does specifically give points for solutions which reduce long-term expansion costs.



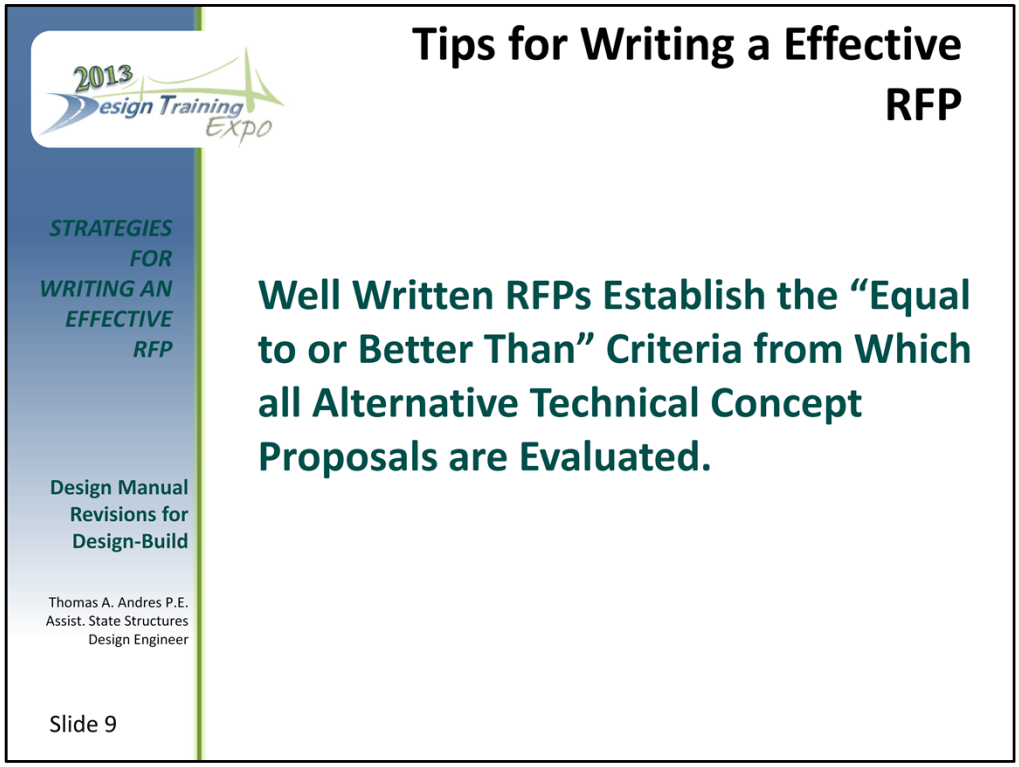
Other strategies for writing an effective RFP.

Do not – Do not !

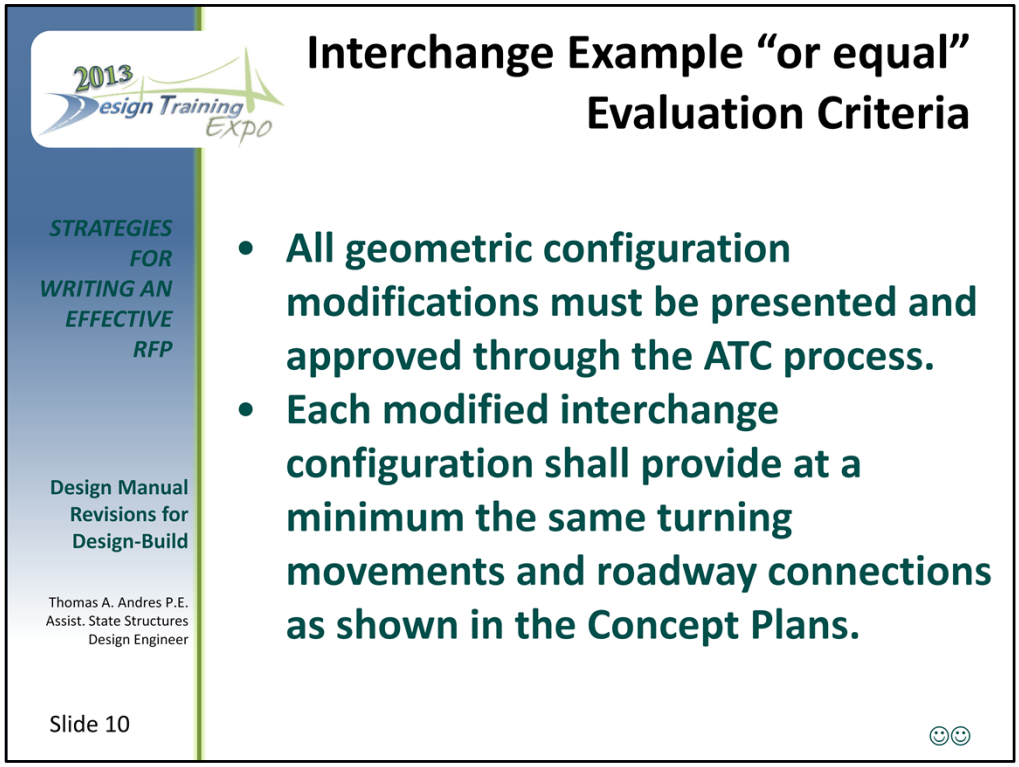
Simply describe the solution, but rather described the project constraints and requirements from which many acceptable transportation solutions can be derived.



A project constraint is a requirement conveyed in the RFP that defines the limitations or functional requirements that must be satisfied in the delivered project.



As I mentioned earlier, well written RFPs establish equal-to-or-better-than criteria from which all ATC proposals are evaluated. Instead of describing the Concept Plans in RFP, concentrate on defining the functional aspects of the concept plans that need to be followed. Examples of functional requirements may be "level of service", number of lanes, connections that need to be made, fee flow versus non-free flow movements, etc. I will give you more specific examples later in the presentation.

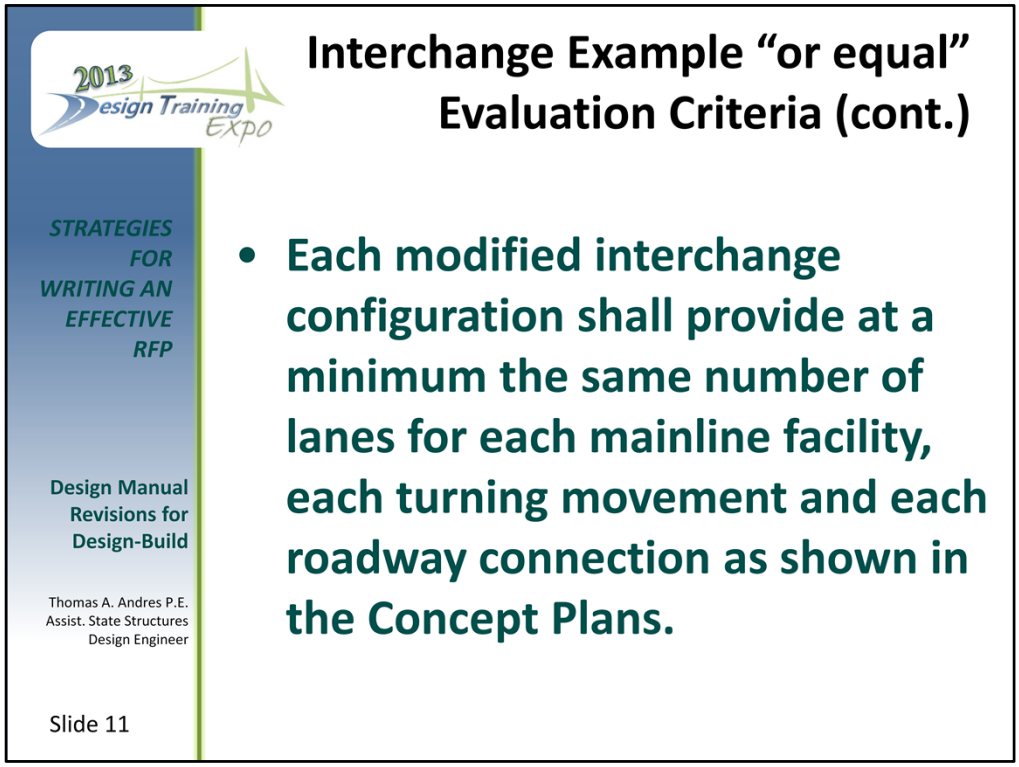


Here is an example of a series of RFP requirements which effectively define the "or equal" criteria for an interchange project.

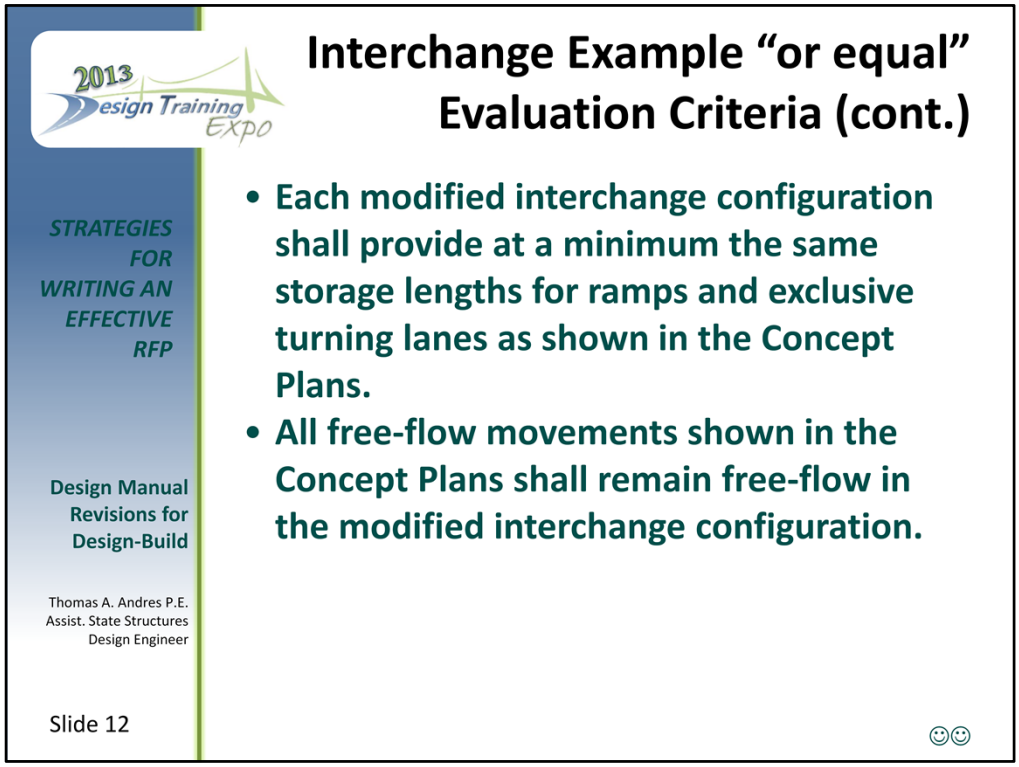
How about this list?

-☺-all geometric changes have to be presented and approved through the ATC process.

-☺-Each modified interchange configuration shall provide at a minimum the same turning movements and roadway connections as shown in the Concept Plans.



Each modified interchange configuration shall provide at a minimum the same number of lanes for each mainline facility, each turning movement and each roadway connection as shown in the Concept Plans.



How about these examples?

-☺-Each modified interchange configuration shall provide at a minimum the same storage lengths for ramps and exclusive turning lanes as shown in the Concept Plans.

-☺- All free-flow movements shown in the Concept Plans shall remain free-flow in the modified interchange configuration.

Interchange Example "or equal" Evaluation Criteria (cont.)

- **A traffic analysis for both the Concept Plans interchange configuration and the Design Build Firm's modified interchange configuration shall be conducted and presented in the ATC verifying that the modified interchange configuration operates as good as or better than the Concept Plans interchange configuration.**

STRATEGIES FOR WRITING AN EFFECTIVE RFP

Design Manual Revisions for Design-Build

Thomas A. Andres P.E.
Assist. State Structures Design Engineer

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A requirement for a traffic analysis establishing that the proposed ATC geometry provides a "roadway capacity" and "level of service" equal to or better than the Concept Plan geometry is also needed to fairly evaluate the ATC.

RECENT CHANGES TO DESIGN-BUILD POLICIES

Structure Plans Submittal Requirements

Exhibit 26-DD Summary of Design/Build Technical Proposal and Component Plan Submittals

Provide the sheets listed as applicable based on structure type.

Foundation Submittal

ITEM	Technical Proposal	90%	Final
Cover Sheet		C	F
Key Sheet		C	F
Sheet Index		C	F
General Notes	S	C	F
Surface Finish Details		C	F
Riprap Details		C	F
Slope Protection Details		C	F
Plan and Elevation	S	C	F
Bridge Typical Section	S	C	F
Hydraulics Recommendation	P	C	F
Construction Sequence	P	C	F
Borings		C	F
Foundation Layout	P	C	F
Pile/Shaft Data Table		C	F
Drilled Shaft Details		C	F
Temp. Bridge Foundation Layout	P	C	F
Existing Bridge Plans		F	F

All submittals shall include additional details and backup information necessary to substantiate the loading on the foundations. All submittals shall also include a copy of the Geotechnical Report.

90% and Final submittals for category 2 bridges require an Independent Peer Review.

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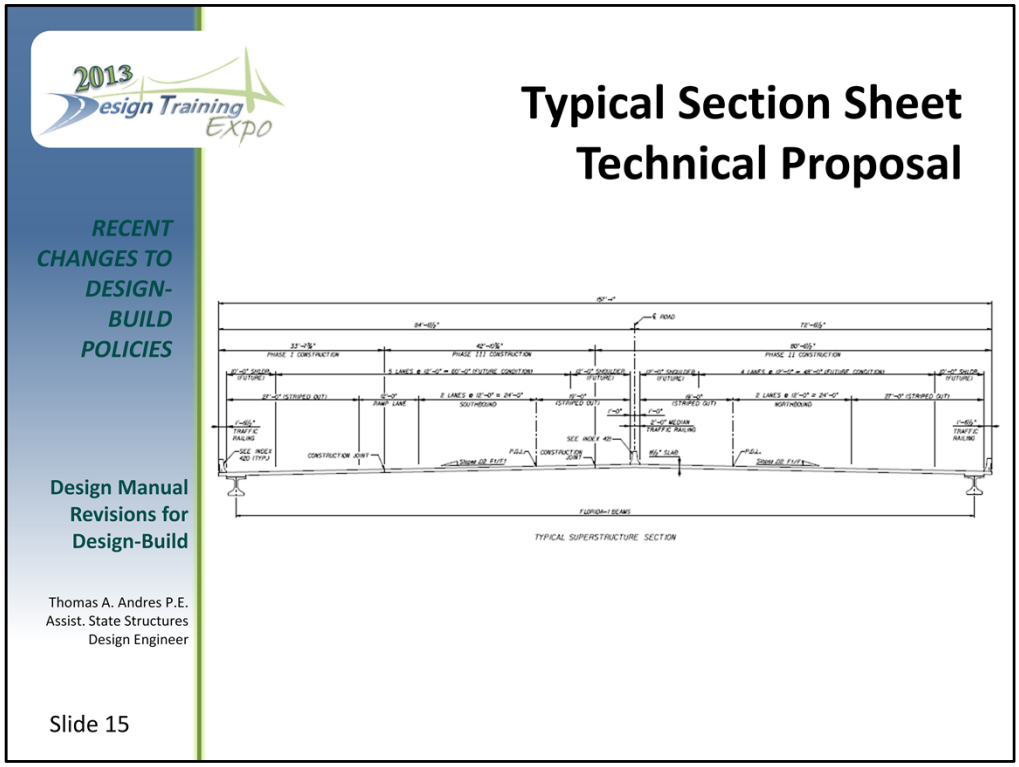
Okay, switching gears here, Let's talk about recent changes to design-build policies.

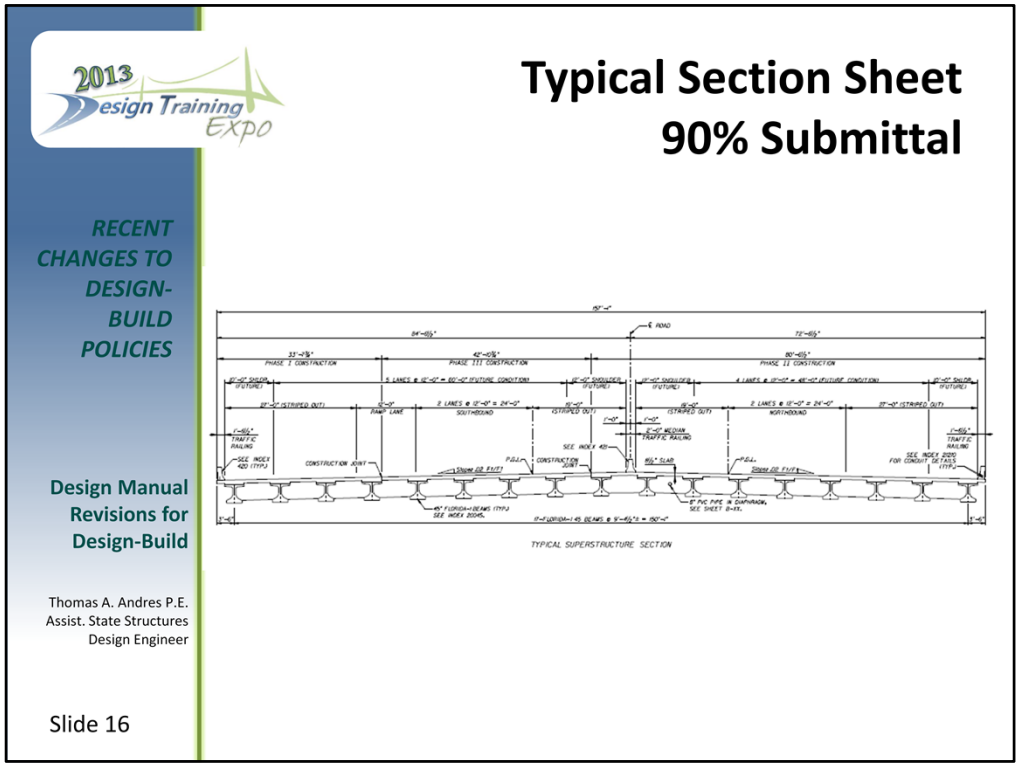
First of all, PPM Volume 1, Chapter 26 is being rewritten to give structures plan submittal requirements for design-build.

Here you can see the list of component plan sheets that make of the Foundation Component Plans with a P, S, C, F symbol for Preliminary, Substantially Complete, Complete, and Final.

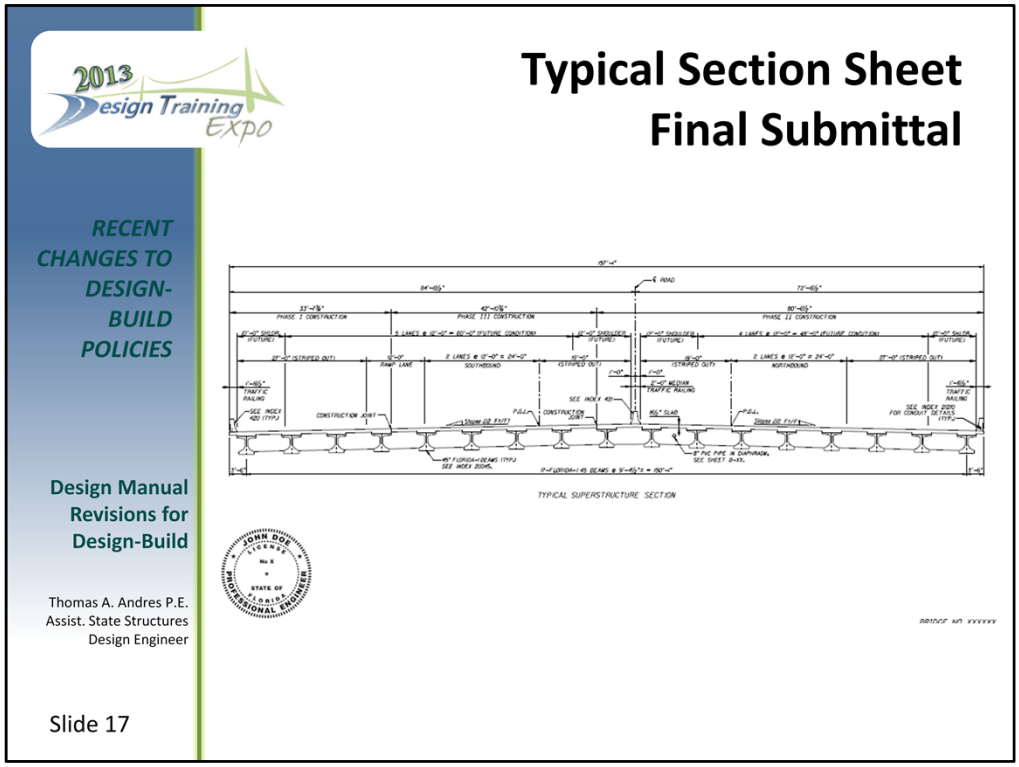
Note that the Technical Proposal Requirements are also established in this table.



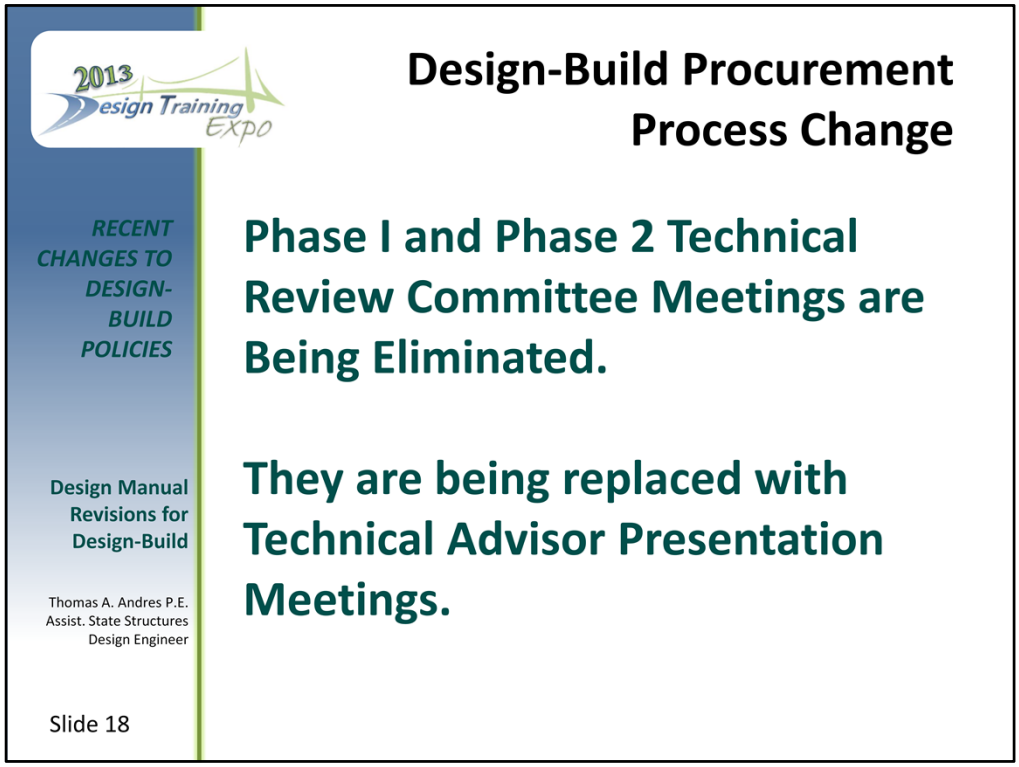
In addition we are expanding the Structures Detailing Manual Example Plans to show the sheet content for the technical proposal and the various phase submittals. Here is an example depicting the minimum information required on the typical section sheet for the Technical Proposal Plans. Note that the beam size and beam spacing is not required to be included in the technical proposal.



Here is the minimum information for the typical section sheet for the 90% component plans. Here you will see that beam size and spacing is included.



And here is the minimum information for the typical section sheet for the Final component plans. Essentially it is the same as what is required in the 90% submittal, signed and sealed.



A recent design-build procurement change is that due to restrictions associated public meeting requirements, the old TRC, Fact Finding Meetings are being replaced with Technical Advisor presentation meetings. In these meetings the technical advisors for the project will present their findings to the TRC after the review of the ELOIs or Technical Proposals are complete. The TRC members are NOT able to ask questions at the meeting with the other TRC members present, but can ask each Technical Advisor follow-up questions privately .

Design-Build Boilerplate Evaluation Criteria Update

RECENT CHANGES TO DESIGN-BUILD POLICIES

The Evaluation Criteria will be Limited to Four Scoring Areas as Follows:

Item	Value
1. Design	25-40
2. Construction	25-40
3. Innovation	0-10
4. Value Added	5-10
Maximum Score	80

Design Manual Revisions for Design-Build

Thomas A. Andres P.E.
Assist. State Structures Design Engineer

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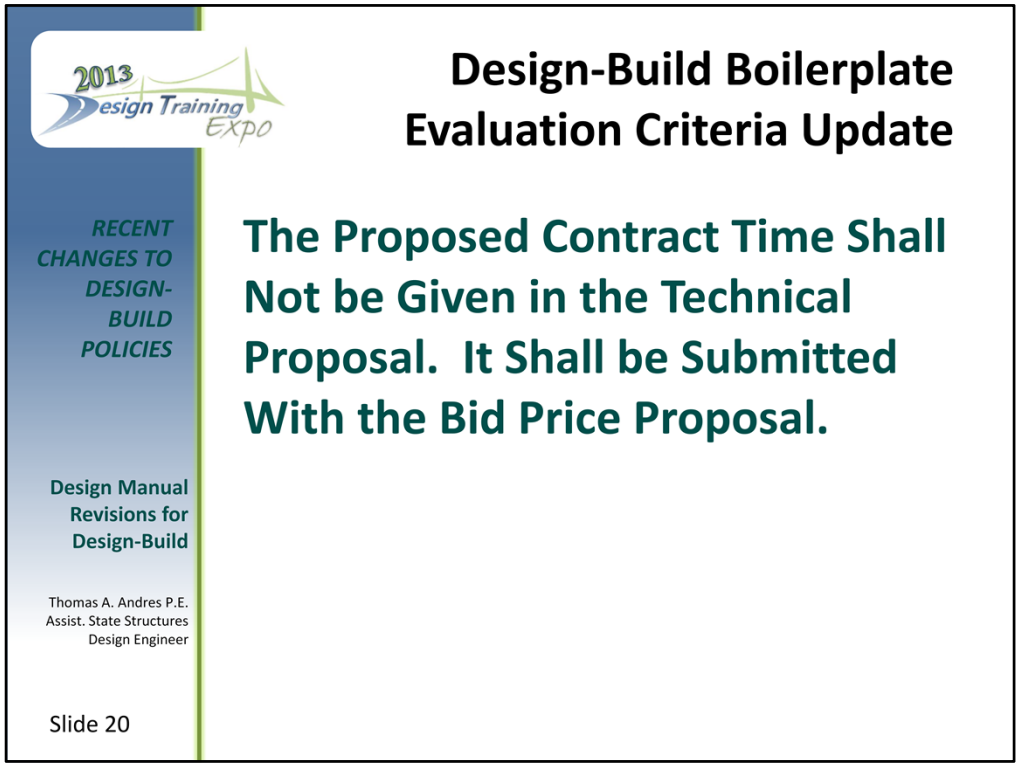
In the future, the scoring for design-build will be limited to the following scoring categories.

Under Design, credit will be given for the quality and suitability of the following elements:
Structures design, Roadway design, Drainage design, Environmental Design, Geotechnical investigation plan, Geotechnical load test program, Traffic Control Plan, Aesthetics, Utility Coordination, etc.

Under Construction, credit will be given for the quality and suitability of the following elements: Structures construction, Roadway construction, Drainage construction, Minimizing impacts to adjacent properties, etc.

Under Innovation, credit will be given for the quality and suitability of the following elements: Minimize or eliminate Utility relocations, Enhance Design and Construction aspects related to future expansion of the transportation facility

Under Value Added, credit will be given for the quality and suitability of the following elements: Broadening the extent of the Value Added features of the RFP, Exceeding minimum material requirements, providing additional Value Added project features proposed by the Design-Build Firm.



In the past, we have allowed the contract time to be submitted and evaluated as part of the Technical Proposal. Our new policies requires that the proposed contract time be excluded from the technical proposal; it shall be submitted as part of the bid price.

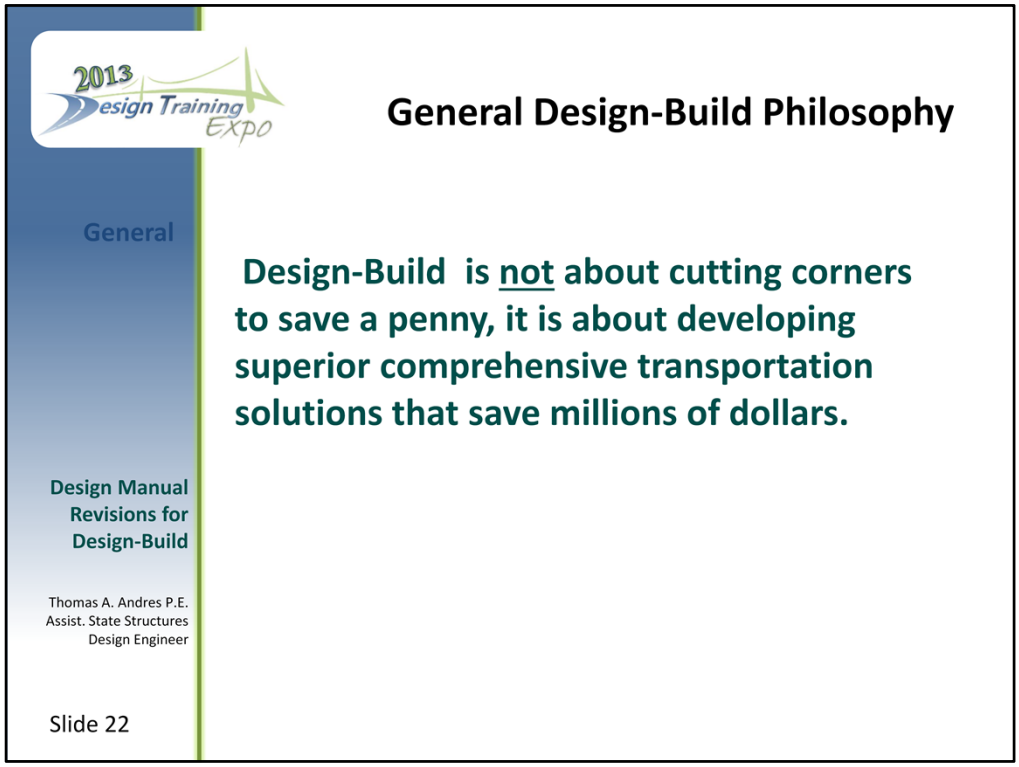
A few final thoughts before I turn the presentation over to Frank.

There are many within the department that are still struggling with the lack of control aspects of design-build.

But as I indicated, the current best practices requires all changes to the Concept Plans to be vetted in the ATC process.

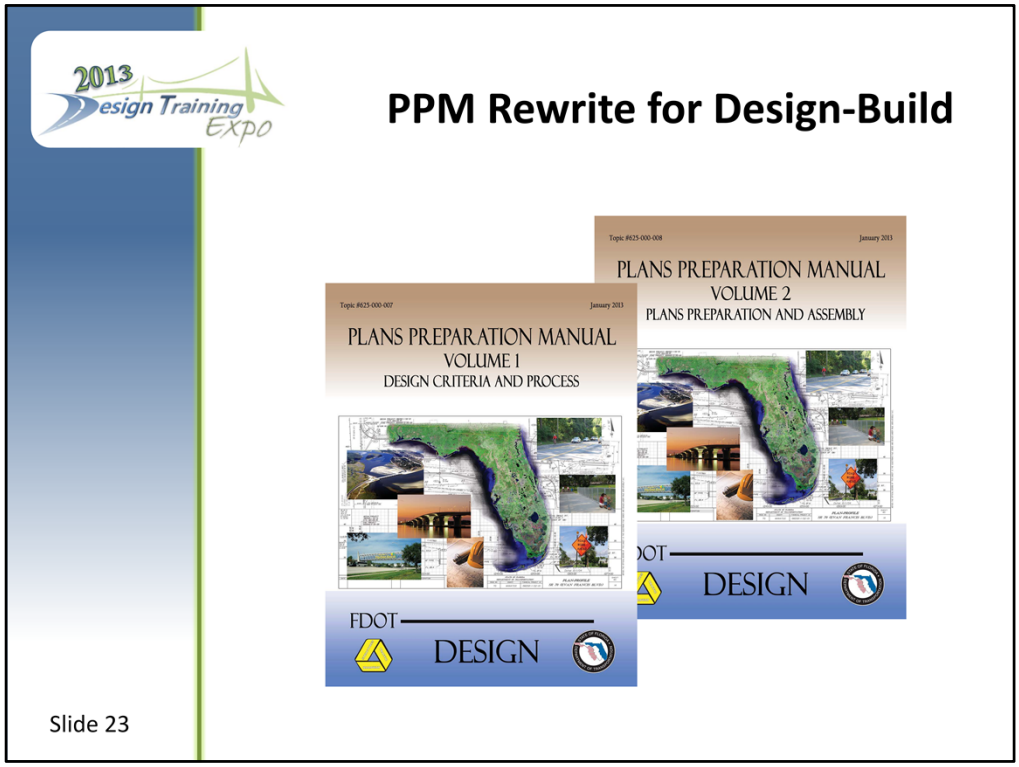
It does require a certain amount of expertise during the ATC process in order to assess whether a given proposal is equal-to-or-better-than the concept plans – and the RFP has to set objective evaluation criteria.

At the end of the day, we have to trust that through the enforcement of an effectively written RFP along with a rigorous Design-Build procurement process, that a superior final product at a reduced cost will result in the end.

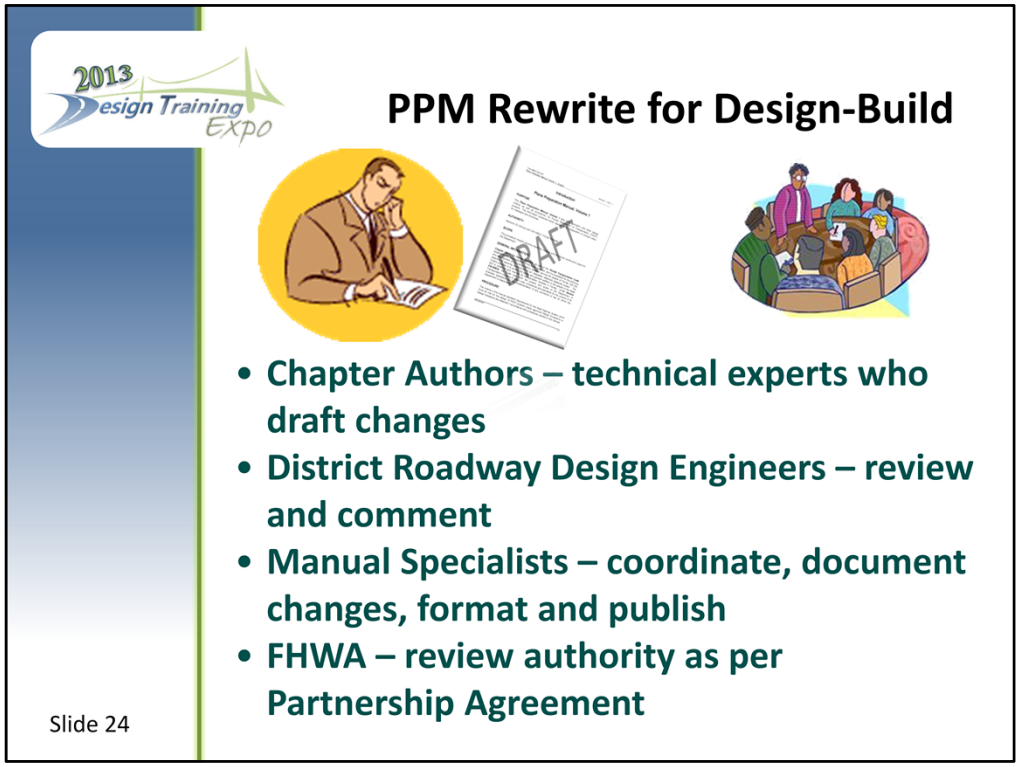


Lastly, and most importantly, Design-Build is not about cutting corners to save a penny, it is about developing superior comprehensive transportation solutions that save millions of dollars.

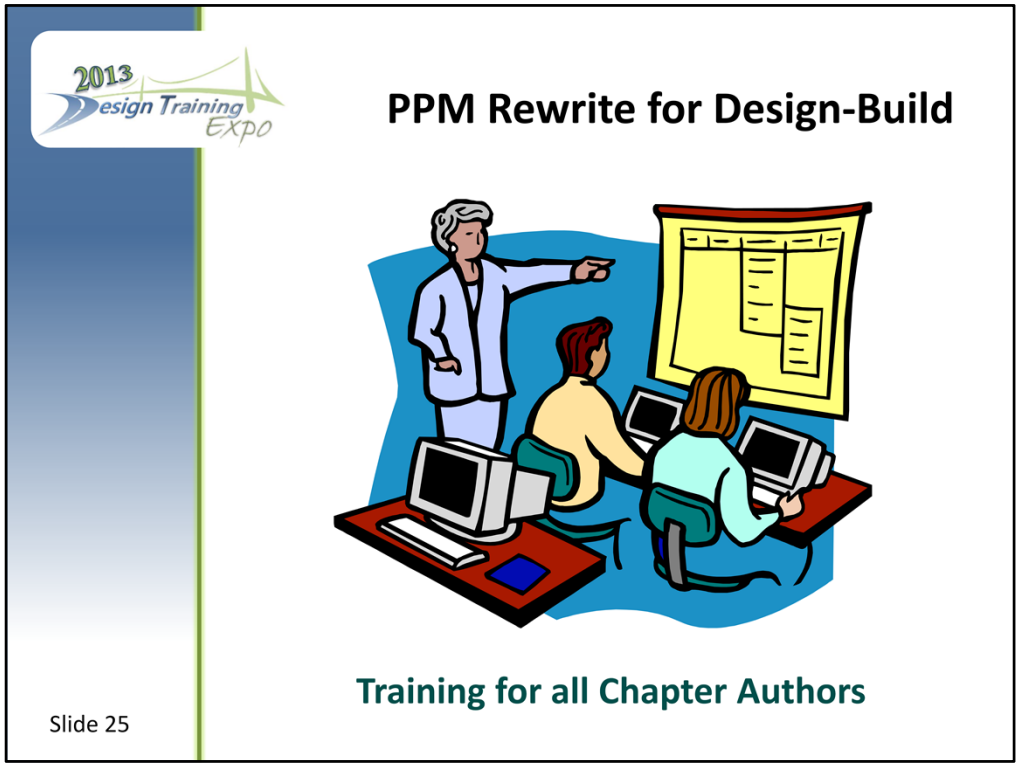
Make sure that when you are developing your next Technical Proposal for the Department that you are concentrating on the latter point, and not on the former point.



After the Structures Manual rewrite had been well underway, the decree went forth from Management that the remaining Design Manuals had to be rewritten to address Design-Build requirements. After a meeting with management in October 2012, it was decided that the Plans Preparation Manual and the Drainage Manual would be updated and published in July 2013.



- After I was somewhat oriented I started thinking of the current PPM process and who is involved. Typically the draft edits are prepared by a Chapter Author who is the technical expert in that subject area. So all the PPM chapters were assigned to Chapter Authors.



- Before beginning the revision process, all of the Chapter Authors received a two-hour training from Tom Andres in writing Design-Build requirements, much of the material you just saw was included in the training.

-In addition to the folks involved in the PPM updates, I knew we were going to need an oversight committee to review the changes for consistency and accuracy before they went to the Districts. So an oversight committee was established that included two Structures folks and some senior engineers from the Roadway Office.
- Committee and bullets)

PPM Rewrite for Design-Build

- Chapter Authors – technical experts who draft changes
- Design-Build Oversight Committee – review with Chapter Author
- District Roadway Design Engineers – review and comment
- District Design Engineer - 'Sign-off'
- FHWA – review authority as per Partnership Agreement
- Manual Specialists – coordinate, document changes, format and publish

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- The District Design Engineers had to review and 'sign off' on the changes.

PPM Rewrite for Design-Build

- Some entire Chapters deleted
- Some requirements changed for both Design-Build and Design-Bid-Build projects
- Some requirements modified just for Design-Build projects
- Some requirements modified for Design-Build with a Pre-scoping Question

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PPM Rewrite for Design-Build

Entire Chapter Deleted

Chapter 20

PLANS PROCESSING AND REVISIONS

Modification for Non-Conventional Projects:
Delete ***PPM*** Chapter 20. Changes made after initial release for construction will be addressed in CPAM.

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PPM Rewrite for Design-Build

Table 2.1.1 Lane Widths

LANE WIDTHS (FEET)						
FACILITY		THROUGH OR TRAVEL	AUXILIARY			
TYPE	AREA		SPEED CHANGE	TURNING (LT/RT/MED)	PASSING	CLIMBING
FREEWAY	Rural	12	12	----	----	12
	Urban	12	12	----	----	12
ARTERIAL	Rural	12	12	12	12	12
	Urban	12 [1]	12 [1]	12 [1,4]	12 [1]	12
COLLECTOR	Rural	12 [6]	11 [2]	11 [2,4]	11 [2,5]	12
	Urban	11 [3]	11 [3]	11 [3,4]	11 [3]	12

1. 11 ft. permitted on non-FIHS/SIS roads if one of these conditions exist:
   a. R/W and existing conditions are stringent controls
   b. Facility operates on interrupted flow conditions
   c. Design speed 40 mph or less
   d. Intersection capacity not adversely affected
   e. Truck volume 10% or less
2. 12 ft. lanes for all 2-lane rural.
3. 12 ft. lanes in industrial areas when R/W is available.
4. With severe R/W controls, 10 ft. turning lanes may be used where design speeds are 40 mph or less and the intersection is controlled by traffic signals. Median turn lanes shall not exceed 15 ft.
5. 12 ft. when truck volume more than 10%.
6. 11 ft. for low volume AADT.

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-Let's take a look at some examples from the PPM/ sneak preview

PPM Rewrite for Design-Build

Some requirements modified just for Design-Build projects

Modification for Non-Conventional Projects:

Delete *PPM* Table 2.1.1 and replace with the following:

LANE WIDTHS (FEET)						
FACILITY		THROUGH OR TRAVEL	AUXILIARY			
TYPE	AREA		SPEED CHANGE	TURNING (LT/RT/MED)	PASSING	CLIMBING
FREEWAY	Rural	12	12	----	----	12
	Urban	12	12	----	----	12
ARTERIAL	Rural	12	12	12	12	12
	Urban	12	12	12	12	12
COLLECTOR	Rural	12	11	11	11	12
	Urban	12	11	11	11	12

Slide

PPM Rewrite for Design-Build

Some requirements modified for Design-Build with a Pre-scoping Question

2.1.4.2 Bicycle Facilities

Bicycle facilities shall be provided as required by ***Chapter 8*** of this volume. Bicycle lanes on the approaches to bridges should be continued across the structure. The District Pedestrian/Bicycle Coordinator shall be consulted during planning and design to establish appropriate bicycle facility elements on a project-by-project basis. ***Chapter 8*** of this volume contains additional criteria for the accommodation of bicyclists.

Modification for Non-Conventional Projects:
Delete third sentence in above paragraph and see RFP for requirements.

Pre-scoping question: Are bike lane dimensions and limits included in the typical section package and attached to the RFP as a requirement? (District Bike/ Ped Coordinator)

Drainage Manual

- Revised to use more authoritative language.
- Modification Boxes for non-conventional projects added.

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PPM

- Vol.1 Ch. 27
  - DB firm responsible for all permits unless otherwise stated in RFP.
  - Scour calculations shall be submitted with 90% foundation plans.
- Vol.1 Ch. 28
  - Shop Drawing requirements

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PPM

- Vol 2. Ch. 8
  - Optional Materials ANALYSIS is required to be documented however sheet does not need to be created.
  - Optional Material installed must be shown on the optional materials sheet, summary of drainage structures sheet OR as-built plans.

Slide 35