



Standard Scope & Staff Hour Estimation Guidelines For Design Projects

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Agenda

- Objectives
- Procedures/Background
- Standard Scope of Services
- Staff Hour Guidelines & Forms
- Scope & Staff Hour Development Process
- Future of Scope and Staff Hours



Objectives of Training

- Describe Background on Standard Scope of Services and Staff Hour Forms and Guidelines
- Describe the Standard Scope of Services
- Describe Scope and Staff Hour Development Process
- Provide update on Scope and Staff Hour Forms



Authorizing Procedure

Procedure 375-030-020

3/26/2009: Pen & link to change office name at request of Director, Office of Design.

Approved:

 Jose Abreu, P.E.
 Secretary

Effective: May 19, 2005
 Office: Production Support
 Topic No.: 375-030-020-d

STANDARD SCOPE and STAFF HOUR ESTIMATION GUIDELINES for PROJECT DEVELOPMENT and ENVIRONMENT (PD&E) STUDIES and DESIGN SERVICES

PURPOSE:

The Department of Transportation (Department) employs consultant services for the purposes of PD&E Studies and Design Services. *The Standard Scope and Staff Hour Estimation Guidelines* is to provide guidance for efficient and uniform negotiations of these professional services contracts statewide. The *Guidelines* consist of the Scope of Services files, Staff Hour Forms and Staff Hour Estimation Basis. The purpose of this procedure is to implement the required use of the *Standard Scope and Staff Hour Estimation Guidelines* for Project Development and Environment Studies (PD&E) and Design services Projects.

The *Guidelines* for both PD&E Studies and Design Services are posted on the Project Management Office's web site. <http://www.dot.state.fl.us/projectmanagementoffice/>

AUTHORITY:

Section 287.055, Florida Statutes (F.S.) and 23 Code of Federal Regulations (CFR), Part 172.

SCOPE:

The Scopes of Services files, Staff Hour Forms and Staff Hour Estimation Basis (hereafter referred to as *Guidelines*) shall be utilized by both the Department and Consultant Project Managers in scoping and negotiating all consultant contracts for PD&E Studies and Design Services.

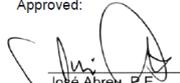
REFERENCES:

Acquisition of Professional Services, Topic No. 375-030-002

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Background

- Original work done July 2000 to July 2002
- Over 2,500 hours invested in original work
- Implemented July 1, 2002
- Major update by all Disciplines 2008
- Minor updates as needed
- Always has been an FDOT / FICE joint effort



Background

- Roadway Analysis and Roadway Plans tested by Roadway Task Team on three different projects (minor and major) – comparisons were very close
- Roadway Forms also tested by FDOT and consultant members of Roadway Task Team during District 7 negotiations – estimate very close to staff hours negotiated using current forms
- All other task teams performed similar testing with respective forms



Background

Comparison – D7 Project

FIRM	Old Format	New Format
FDOT	948	994
KCA	1200	1274
Negotiated		1006



Scope of Work vs. Scope of Services

- **Scope of Work** refers to the project as whole – what is being constructed.
 - Overall improvements to the transportation facility
- **Scope of Services** refers to what the consultant is doing; what activities will accomplish the Scope of Work.
 - Establishes which activities to accomplish the work are specifically included in the contract
 - Establishes which of the activities will be the responsibility of the CONSULTANT or the DEPARTMENT



Scope of Work vs. Scope of Services

- **Scope of Work:**
 - **Overall project improvements**
 - Widen of SR 500 from 2 to 4 lanes
 - Mile post 0.000 to 2.541
 - Replace bridge over Florida River
 - Develop closed drainage system
- **Design Scope of Services**
 - **Activities to accomplish Scope of Work**
 - Roadway design
 - Bridge Design
 - Drainage design
 - Public involvement
 - Signing and Marking
 - Refer to Sections 2 through 34 of the contracted Scope of Services



Standard Scope of Services

<http://www.dot.state.fl.us/projectmanagementoffice/Scope/Design.shtm>

Production Support Office

[Production Support](#) > FDOT Design Scope and Staff Hours

Standard Scope of Services and Staff Hour Estimation

Roadway & Bridge Structural Design Scope

[Design Staff Hour Estimation \(SHE\) Guidelines](#) - an excel file containing over 30 worksheets
(Right click on file and save file.)

[Staff Hour Estimation Forms](#) - an Excel file containing over 30 worksheets with formulas. (Right click on link and save file.) (Revised 6-8-2010)

[Design Standard Scope of Services](#) - (Updated December 13, 2010) This word document that should be completely filled out for the project. (Right click on link and save file.) The scope file is the complete Standard Scope which includes all design activities and should be used on every design Project. If you are creating a new scope, contact the nearest District Project Management Office for an electronic copy or download the Standard Scope (above) that includes all the files necessary to complete a scope of services for a project.

[Design Standard Scope Zip File](#) - (Updated December 13, 2010) This is a very large file containing all the Word files necessary to create a standard scope document using a Word Macro. To use this file, save it then extract all the files. The "Workbook" file has a list of all documents. This file is highlighted to create a master file. Then, the macro is run and it generates a Standard Scope. Instructions are in the zip file.



Standard Scope of Services

Benefits

- It provides for consistent and predictable project results!
- Keeps Department and Consultant on the same page
- It is the primary input into project management functions
- Ensures greater likelihood of on-time delivery
- Facilitates scope control
- Easier to accommodate change
- Identifies all of the project deliverables (external and internal)
- Is the basis for performance reporting during project execution



Standard Scope of Services

- 36 Sections (31 Work Activities)
- Over 1,100 Identified Tasks
- 16 Possible Disciplines
- Can be Over 150 Pages when completed for a project
- Guidelines include over 30 Worksheets



Standard Scope of Services

- Project Purpose (Section 1)
- Project Description (Section 2)
- Project Common & General Tasks (Section 3)
- Discipline Specific Activities (Sections 4-34)
- Project Requirements (Section 35)
- Invoicing Limits (Section 36)



Project Scope of Services

Making the Standard Scope of Services a Project Scope of Services

Work tasks described in the Standard Scope **should be utilized “as is” to the maximum extent possible** and modified only when required to produce project or District specific results.



Project Scope of Services

- Determine the Activities applicable to project
- Select the Tasks
- Fill in the Blanks
- Determine WHO is Responsible
- Provide Project Specific Information
- Provide District Specific requirements



Project Scope of Services

Scope

(Section 2) Project Description

2.1 Roadway – Y/N

Plan Type: Describe type of roadway plans, i.e., plan/profile, plan only, letter plans or as directed.

Typical Section: List number and description of typical sections, i.e., mainline: four-lane divided urban curb and gutter, 4-foot bike lanes, 5-foot sidewalk, 3-foot utility strip both directions; four-lane divided rural with 5-foot paved shoulders, no sidewalks each direction.

Limits: SR ____ from ____ to ____

Major Intersections/Interchanges: List all intersections/interchanges that will require additional plan sheets.

Variations/Exceptions: List of anticipated variations/exceptions.

Back of Sidewalk Profiles – Y/N

Level of TCP Plans: Identify Level 1, 2, or 3.

Temporary Signals – Y/N: Provide list of locations.

Temporary Lighting – Y/N: Provide limits.

Temporary Signs – Y/N: Provide description.



Project Scope of Services

All changes to the Standard Scope shall be shown as to alert the user that the scope requirements have changed from the standard.

- All **additions** shall be shown in ***Bold Italics*** to alert the user that the scope requirements have changed from the standard.
- All sections that are **not applicable** to the project shall be indicated with “***N/A***” shown next to the section heading.



Project Scope of Services

All changes to the Standard Scope shall be shown as to alert the user that the scope requirements have changed from the standard

(Continued)

- **Minor deletions** of portions of text that do not apply to the project shall be shown in ~~striketrough~~.
- **Major deletions** of text require the entire paragraph to be shown in ~~striketrough~~ and rewritten in ***Bold Italics***.



Project Scope of Services

“Other” Activities

- Not a “catch-all”
- Must identify specific activities not covered elsewhere in that Section
- Corresponding description in “Comments” column in Staff Hour Forms to justify hours
- Activities 4, 6, 8, 19, 21, 23, 25, 30, 32 & 33



Scope Tips

Do's

- Describe what needs to be done, not how to do it
- The more detail, the better
- Keep changes to a minimum to ensure consistent & uniform work effort requirements
- Make changes with care – District/Project specific
- Get Discipline Experts involved

Don'ts

- Don't blindly copy a scope from a similar project
- Don't repeat what the manuals say
- Don't show versions or dates of references



Staff Hour Estimation (SHE) Guidelines

Objectives of the SHE Guidelines

- A reference tool developed to assist FDOT and Consultant personnel involved in estimation and negotiation of staff hours
- Develop Scope of Services and Staff Hour Forms that will provide consistent & uniform negotiations for work effort requirements on projects statewide



Staff Hour Estimation (SHE) Guidelines

Objectives of the SHE Guidelines (continued)

- Clarifies Tasks for each discipline area
- Develop Scope of Services so that Chapters and Sections match the Activities and Tasks which are negotiated using the Staff Hour Forms
- Develop estimation guidelines (Basis) that would produce no more or less hours than were previously negotiated on projects



SHE Guidelines

Ranges

- The staff-hour ranges shown presented on the following sheets represent the work effort that may be expected for each specific task on **typical** projects.
- These hourly ranges vary from a simple project (lower end of the range) to a complex project (upper end of the range) based upon the specific variables for each individual activity.
- The ranges represent **neither** the **minimum** nor **maximum** hours that may be negotiated for a particular task on a project.
- Hours below or above these ranges may be applicable based upon constraints and requirements that are specific to the project.



SHE Guidelines

Ranges are not intended to cover all projects



INTRODUCTION	Introduction	SIGNALIZATION	Signalization Guidelines
	Disclaimer		21. Signalization Analysis
	Project Information		22. Signalization Plans
	Summary	LIGHTING	Lighting Guidelines
PROJECT GENERAL TASKS	3. Project Common and Project General Tasks		23. Lighting Analysis
ROADWAY ANALYSIS	Roadway Guidelines		24. Lighting Plans
	4. Roadway Analysis	LANDSCAPE ARCHITECTURE	Landscape Guidelines
	5. Roadway Plans		25. Landscape Architecture Analysis
DRAINAGE ANALYSIS	6. Drainage Analysis		26. Landscape Architecture Plans
UTILITIES	Utilities Guidelines	SURVEY	Survey Guidelines
	7. Utilities		27. Survey
ENVIRONMENTAL PERMITS	Environmental Permits Guidelines	PHOTOGRAMMETRY	Photogrammetry Guidelines
	8. Environmental Permits, Compliance and Clearances		28. Photogrammetry
STRUCTURES	Structures Guidelines	MAPPING	29. Mapping
	9. Summary and Miscellaneous Tasks & Drawings	GEOTECHNICAL	Geotechnical Guidelines
	10. Bridge Development Report		30. Geotechnical
	11. Temporary Bridge	ARCHITECTURE	Architecture Guidelines
	12. Short Span Concrete Bridge		31. Architecture Development
	13. Medium Span Concrete Bridge	NOISE BARRIERS	32. Noise Barriers Impact Design Assessment in the Design Phase
	14. Structural Steel Bridge	INTELLIGENT TRANSPORTATION SYSTEMS (ITS)	ITS Guidelines
	15. Segmental Concrete Bridge		33. ITS Analysis
	16. Movable Span		34. ITS Plans
	17. Retaining Walls		
	18. Miscellaneous		
SIGNING & PAVEMENT MARKINGS	Signing & Pavement Markings Guidelines		
	19. Signing & Pavement Markings Analysis		
	20. Signing & Pavement Markings Plans		

Task No.	Task	Units	Basis for Staff Hour Range					
			All Field Time and Meeting time is included in the tasks "Field Reviews" & "Technical Meetings" respectively.					
			General	Low-Range	Mid-Range	High-Range		
6.1	Determine Base Clearance Water Elevation	Per Location	8 to 24		Staff-hours vary with data availability which is typically driven by the type of high water condition (cross drains, lakes, wetlands, and controlled water bodies).	Controlled canals, contiguous wetlands, lakes with historical data	Cross drains, flood plains,	Lakes with no historical data
6.2	Pond Siting Analysis and Report	Per Basin	24 to 32		Range is based on evaluating three pond sites per basin. Staff hours vary with basin characteristics such as degree of urbanization, right of way constraints, and quantity of environmental impacts. The task may involve 1 to 3 coordination meetings, but meeting hours are not included in the range and should be tabulated in "Technical Meetings".	Rural with surrounding R/W less than 50% developed.	Suburban, R/W 50-80% developed, some environmentally sensitive areas, but some undeveloped areas have no environmental impacts.	Urban R/W is 80%-100% developed, most undeveloped areas are environmentally sensitive.
6.3	Design of Cross Drains	EA	Minor	4 to 6	All extensions and those new/replacement structures with no known scouring or flooding problems, needing minimal hydrologic effort. For example, a) where the flow is determined by multiplying a design velocity by the culvert flow area, or b) where the rational method can be used on a small easily defined basin.	Culverts extended a small amount to meet clear zone requirements where Q is estimated by $Q = \text{Area} \times \text{Velocity}$ (4 FPS)		Culverts replaced "in kind" due to structural problems, with minimal lengthening to meet clear zone requirements. Rational method is used on an easily defined basin.
					All that are not minor.	Culvert replaced due significant	Analysis of several alternatives of size	Activities in the mid range complicated by



SHE Forms

- Project Information Sheet

Project Information Sheet

Financial Project Identification Number:	123456-1-32-01	Federal Aid Project Identification Number:	54321
Project Description:	SR 100 from Old City to New City		
Begin Milepost:	1.111	End Milepost:	5.555
Number of Lanes:	4	Typical Section:	Urban (Urban/Rural/etc.)
Project Type:	Major (Minor/Major)	Access Management Classification:	3
CAP Level:	3	TCP Level:	II
Variances:	1. Design Speed	Exceptions:	1. Shoulder Width
	2. Horizontal Curve Length		2. Median Width
	3.		3.
	4.		4.
	5.		5.
Proposed Design Contract Time:	18 months		
Project Preliminary Design Specifics:			
Roadway	Plan Profile	Roadway Plan Type (Plan/Profile, Plan Only, etc.)	
Drainage	100	Number of Drainage Structures	
Utility coordination	4	Number of Elected Utilities	
Structures - Bridges	Median Span Count	Bridge Structures? (Y/N, number)	
Structures - Retaining Walls		Retaining Walls? (Y/N, number)	
Structures - Misc. Structures		Miscellaneous Structures? (Y/N, number)	
Permits		Permits Required (WMD, ACOE, Local Permits, etc.)	
Signing and PM		Signing & Pavement Marking Plans Required? (Y/N)	
Signalization Intersections		Number of Intersections Requiring Signals:	
Non-Signalized Int.	7	Number of Non-Signalized Intersections	
Traffic Control	3	Number of phases requiring detailed phase drawings	
Landscaping	Y	Landscaping Plans Required? (Y/N)	
Right of Way	Y	Right of Way Plans Required? (Y/N)	
Lighting	Y	Lighting Plans Required? (Y/N)	
Architecture	N	Architectural Plans Required? (Y/N)	
Geotech	Y	Geotechnical Consultant Services Required? (Y/N)	
Survey	Y	Survey Consultant Services Required? (Y/N)	
JPA's	Y	JPA's Prepared by Consultant? (Y/N, if so how many?)	
Mitigation Plan	Y	Mitigation Plans Required? (Y/N)	
Specifications Package	Y	Specifications Package to be Prepared by Consultant? (Y/N)	



SHE Forms

- Discipline Task Sheets
- All clarification to a scope activity shall be noted in that Task's **COMMENTS** column on the SHE Forms
- All details and assumptions supporting the staff hours for a task shall be noted in that Task's **COMMENTS** column
- Includes "Other" Activities task descriptions



SHE Forms

- Hours should be set up with formulas supported by description in comments column

SHE Guideline:

Task No.	Task	Units	Staff Hour Range	Basis for Staff Hour Range
4.1	Typical Section Package	LS	See Basis for Staff Hour Range	All work required to develop and obtain approval of the typical section package according to the Plans Preparation Manual. Also includes any modification received from reviews. Based 16-24 hours for the data sheet, location map, and the first Typical Section and 8-10 hours for each additional Typical Section for the project.

SHE Form:

Task No.	Task	Units	No of Units	Hours / Unit	Total Hours	Comments
4.1	Typical Section Package	LS	1	36	36	Typical section package approved 12/22/08 for 3 sections. Need three additional typical sections (EB slip ramp, WB lanes approaching Bypass, Meadow Pointe). 20 hours for 1st, 8 hrs for each other

$$=(20*1)+(8*2)$$



SHE Forms

- Hours should be set up with formulas supported by description in comments column

Tip

Don't hesitate to separate an activity into 2 or more parts (ex. 4.4a and 4.4b) in order to clarify the hours.

4.4.a	Horizontal/Vertical Master Design Files - Mainline	LS	1	930.7	931	Project length = 3.98 miles. 290 hrs for 1st mile and 215 hrs per additional mile
4.4.b	Horizontal/Vertical Master Design Files - Meadow Pointe Boulevard	LS	1	430	430	Project length = 1.25 miles. 360 hrs for 1st mile and 280 hrs per additional mile



SHE Forms



So, what happens when you're outside this range??

- Document it in the COMMENTS Column!



SHE Form Tips

Do's

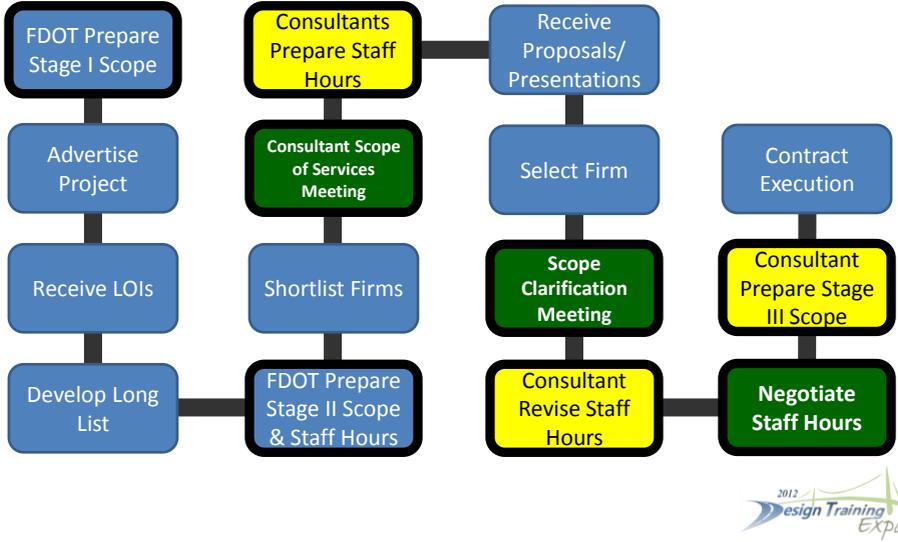
- Determine complexity of project – where is it in range?
- Project clarification, details and assumptions - describe in COMMENTS
- Use formula to support hours – **CHECK FORMULAS**
- Involve Discipline Experts

Don'ts

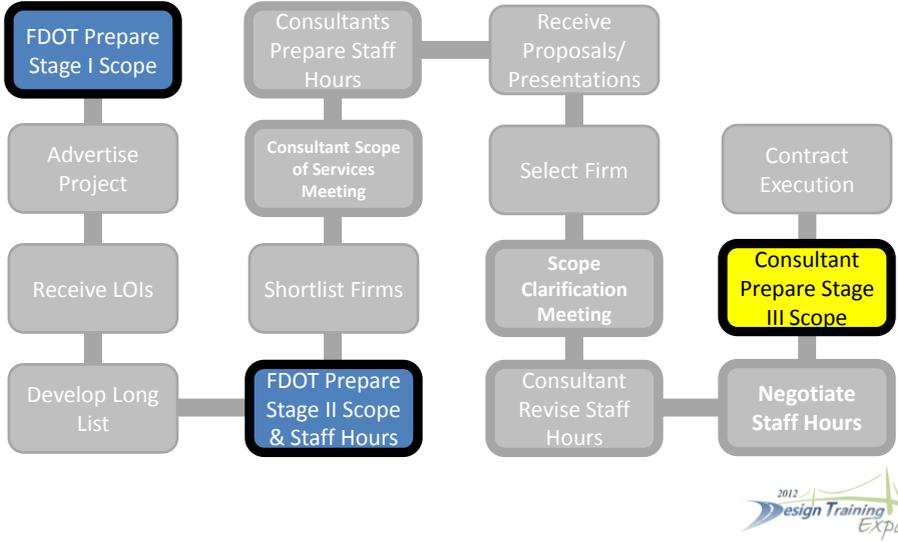
- Don't blindly copy SHE form from a similar project
- Don't focus on top or bottom of range



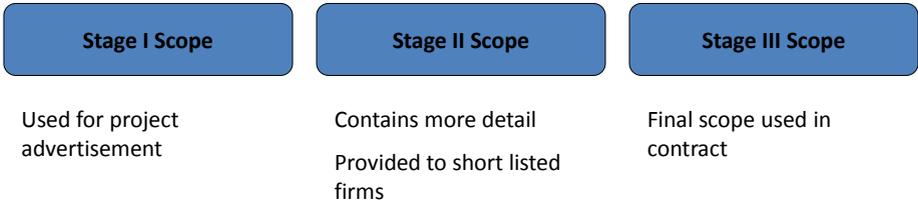
Scope and Staff Hour Development Process



Scope and Staff Hour Development Process



Scope Development Process



Scope and Staff Hour Development Process



Scope Development Process

Project Manager's responsibilities throughout the Scope of Services development process

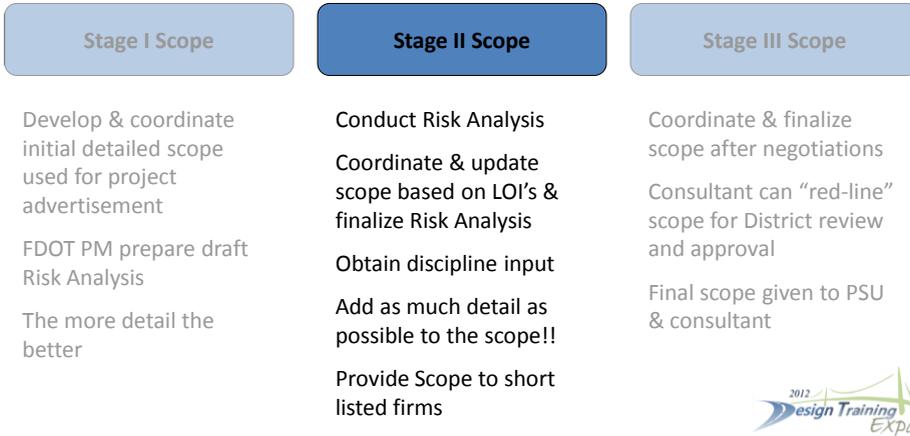


Scope and Staff Hour Development Process



Scope Development Process

Project Manager's responsibilities throughout the Scope of Services development process



Scope and Staff Hour Development Process



Consultant Scope of Services Meeting For Shortlisted Firms

- Provide Stage II scope
- FDOT representative from each discipline provides clarification on the scope
- Consultant asks questions
- FDOT PM amends Stage II Scope based on meeting and reissues Stage II Scope



Scope and Staff Hour Development Process



Consultant Prepare Staff Hours

- Based on Stage II Scope
- Document assumptions in comments
- Submit only “Staff Hour Summary – Firm” sheet for prime and all subs

Task No.	Task	Units	No of Units	Hours / Unit	Total Hours	Comments
4.1	Typical Section Package	LS	1	36	36	Typical section package approved 12/22/08 for 3 sections. Need three additional typical sections (EB slip ramp, WB lanes approaching Bypass, Meadow Pointe). 20 hours for 1st, 8 hrs for each other
4.2	Pavement Design Package	LS	1	120	120	Four pavement designs (mainline, shoulders, resurfacing mainline, Meadow Pointe) (50 hours for initial, 8 hours for shoulder, 10 for resurfacing mainline and 12 for Meadow Pointe). 40 hours for Pavement Type Selection Report. Assume complete reconstruction of pavement.
4.3	Access Management	LS	1	115	115	16 hours/mile. Driveway documentation is only required on driveways with work outside the ROW. Assume 10 driveways will require documentation booklet @ 4 hrs each.



Consultant Prepare Staff Hours

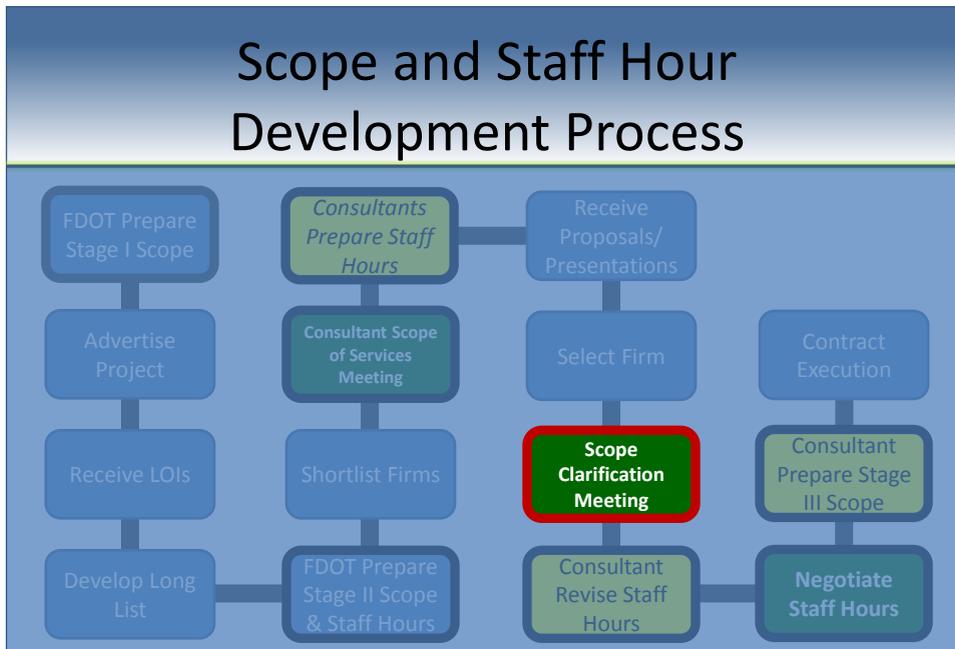
- Tips**
1. Clearly state the basis for hours of all proposed hours.
 2. Provide formula for hour calculations.

4.1	Typical Section Package	LS	1	36	36	Typical section package approved 12/22/08 for 3 sections. Need three additional typical sections (EB slip ramp, WB lanes approaching Bypass, Meadow Pointe). 20 hours for 1st, 8 hrs for each other
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4.3	Access Management	LS	1	115	115	16 hours/mile. Driveway documentation is only required on driveways with work outside the ROW. Assume 10 driveways will require documentation booklet @ 4 hrs each.

Four pavement designs (mainline, shoulders, resurfacing mainline, Meadow Pointe) (50 hours for initial, 8 hours for shoulder, 10 for resurfacing mainline and 12 for Meadow Pointe). 40 hours for Pavement Type Selection Report. Assume complete reconstruction of pavement.

=50+8+10+12+40





Scope Clarification Meeting with Selected Firm

- FDOT and Consultant staff from all disciplines discuss scope
- Scope changes are based on information learned during selection process
- Consultant is responsible to document scope changes
- FDOT and Consultant update staff hours
- Determine appropriate range for each discipline

Tips

1. Consultant have all subconsultants attend the meeting.
2. Consultant should take good notes.

Scope and Staff Hour Development Process



Revise Staff Hours Based on Scope Clarification Meeting

- FDOT and Consultant update staff hours
- FDOT and Consultant exchange staff hours 2 to 3 days prior to start of negotiations
- Update “Comments” as hours are updated

Tips

1. Make sure hours are accurate and defensible



Scope and Staff Hour Development Process



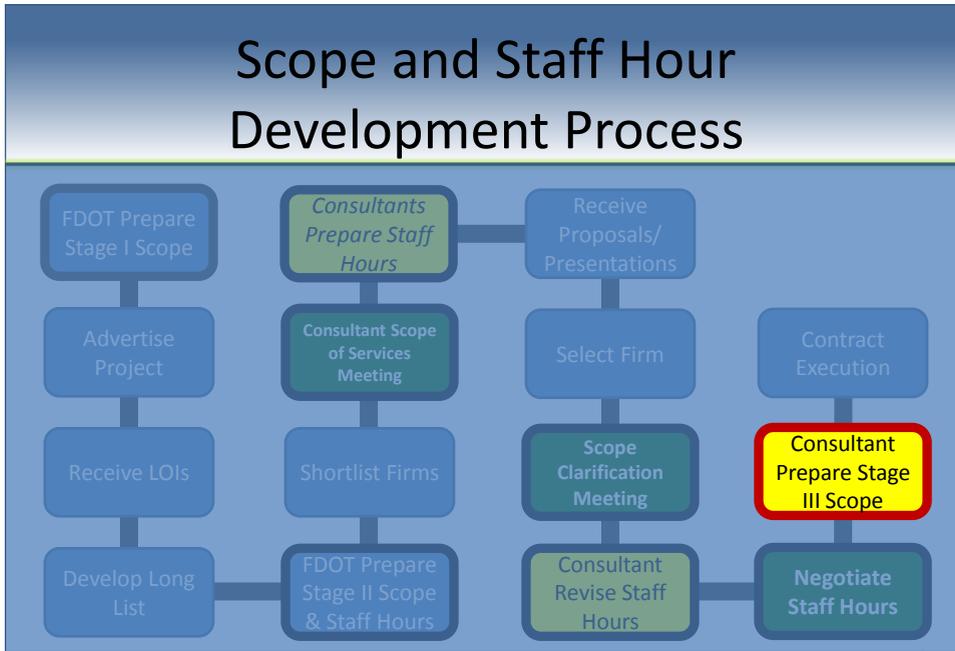
Negotiate Staff Hours

- Follow FDOT Negotiations Handbook (Mutual Gains)
- FDOT and Consultant sign-off on staff hour sheets and staff hour distribution for each discipline
- Consultant is normally responsible for updating Scope

Tips

1. Update staff hour comments, the more detail the better
2. Staff hours sheets become excellent backup documentation of the Scope of Services





Scope Development Process

Project Manager's responsibilities throughout the Scope of Services development process



Stage I Scope	Stage II Scope	Stage III Scope
Develop & coordinate initial detailed scope used for project advertisement FDOT PM prepare draft Risk Analysis The more detail the better	Conduct Risk Analysis Coordinate & update scope based on LOI's & finalize Risk Analysis Obtain discipline input Add as much detail as possible to the scope!! Provide Scope to short listed firms	Coordinate & finalize scope after negotiations Consultant can "red-line" scope for District review and approval Final scope given to PSU & consultant



The Future

- Teams Reconvening to update Scope & Guidelines
 - Roadway team nearly complete (3, 4 & 5)
 - Other Discipline Teams are in progress
 - S&SH comments can be sent to Shawn Murphy
 - Shawn.murphy@dot.state.fl.us



The Future

- Updates to Activities 3, 4 & 5
 - Eliminate non-standard language
 - Added Pavement Type Selection Report activity
 - Added Cross slope correction activity
 - Added Risk Analysis and Management activity
 - Adjusted staff hour ranges for some tasks

- Addressed small projects & simple RRR projects?
- Adjusted Electronic Delivery ranges?



Questions?

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