Orlando, FL

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2024 TRANSPORTATION SYMPOSIUM

Design Staff Hour Estimation Guidelines and Forms

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FDOT since 2020 – Scope and Staff Hour Estimation Guide Documents and Project Management Training and Resources

TRANSPORTATION SYMPOSIUM

Agenda

- Scope and Staff Hours
  - FDOT Procedure
  - Where Can I find what I need?
  - Scope of Services
  - Staff Hour Guidelines and Forms
    - Changes are happening
    - Schedule of changes
  - New Format Changes Explained
    - Benefits

TRANSPORTATION SYMPOSIUM

Scope and Staff Hours

Scope & Staff Hour Estimation Documents

FDOT Procedure 375-030-020

Scope and Staff Hour Estimation (S&SHE) Guide Documents

1. Standard Scope of Services
2. Staff Hour Estimation Guidelines
3. Staff Hour Estimation Forms

Procedure Outline

1. S&SHE Guide Documents
   - 1.1 Purpose of Documents
   - 1.2 Usage of Documents
   - 1.3 Distribution of Documents
   - 1.4 Revisions and Updates
2. Training
3. Forms

https://www.fdot.gov/designsupport/scope/default.shtm

Approved:

Effective: January 27, 2023
Office: Production Support
Topic No.: 375-030-020-f

DocuSigned by:
Michael A. Shepard

Department of Transportation

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

AUTHORITY:

Sections 20.23(3)(a) and 334.048(3), Florida Statutes (F.S.)

REFERENCES:

Acquisition of Professional Services, Topic No. 375-030-002
Section 287.055, F.S.
23 Code of Federal Regulations (CFR), Part 172.

PURPOSE:

The Department of Transportation (Department) employs consultant services for the purposes of Project Development and Environment (PD&E) Studies and Design Services. ***The Standard Scope of Services, Staff Hour Estimation Guidelines and Staff Hour Estimation Forms*** (hereafter jointly referred to as the ***S&SHE Guide Documents***) provide guidance for efficient and uniform negotiations of these professional services contracts statewide. This procedure implements the required use of the ***S&SHE Guide Documents*** for PD&E Studies and Design Services Projects.

SCOPE:

Both Department and Consultant Project Managers will utilize the ***S&SHE Guide Documents*** in scoping and negotiating all consultant contracts for PD&E Studies and Design Services.

Scope & Staff Hour Estimation Documents

Roadway & Bridge Structural Design

Design Scope of Services Tool - (*Updated September 2023*) This online tool assists scope developers through an intuitive process that pulls Work Program information to create a scope output (MS Word document) that includes project-specific information along with all anticipated design activities. Click this link, https://www.fla-etat.org/est/swept/dsos/Landing.do to access the tool. Please Note: The DSOS Tool *works in Chrome or Firefox; not supported in Internet Explorer or Edge)*.
Developers of the Design Scopes of Services must be given access to the Design Scope of Services (DSOS) Tool. User access levels include: *Reviewer* (read only) / *Scope Creator* (create/edit scopes) / *Template Creator* (create/edit scopes & district scope templates).
To request access, or to determine your district's *Template Creator(s)*, please contact *DSOS Help Desk* by email at dsos@fla-etat.org , or call (850)414-5334. Each district-specific request will ask to provide the following information: name, email, and level of access.
View the complete Introduction & Training Session Webinar *or* PowerPoint Slides *here*.

Design Scope of Services Example - (*Updated September 2023*) This example PDF document shows all available design activities exported from the *Design Scope of Services Tool.* The document identifies the ***yellow-highlighted*** areas for project-specific information.

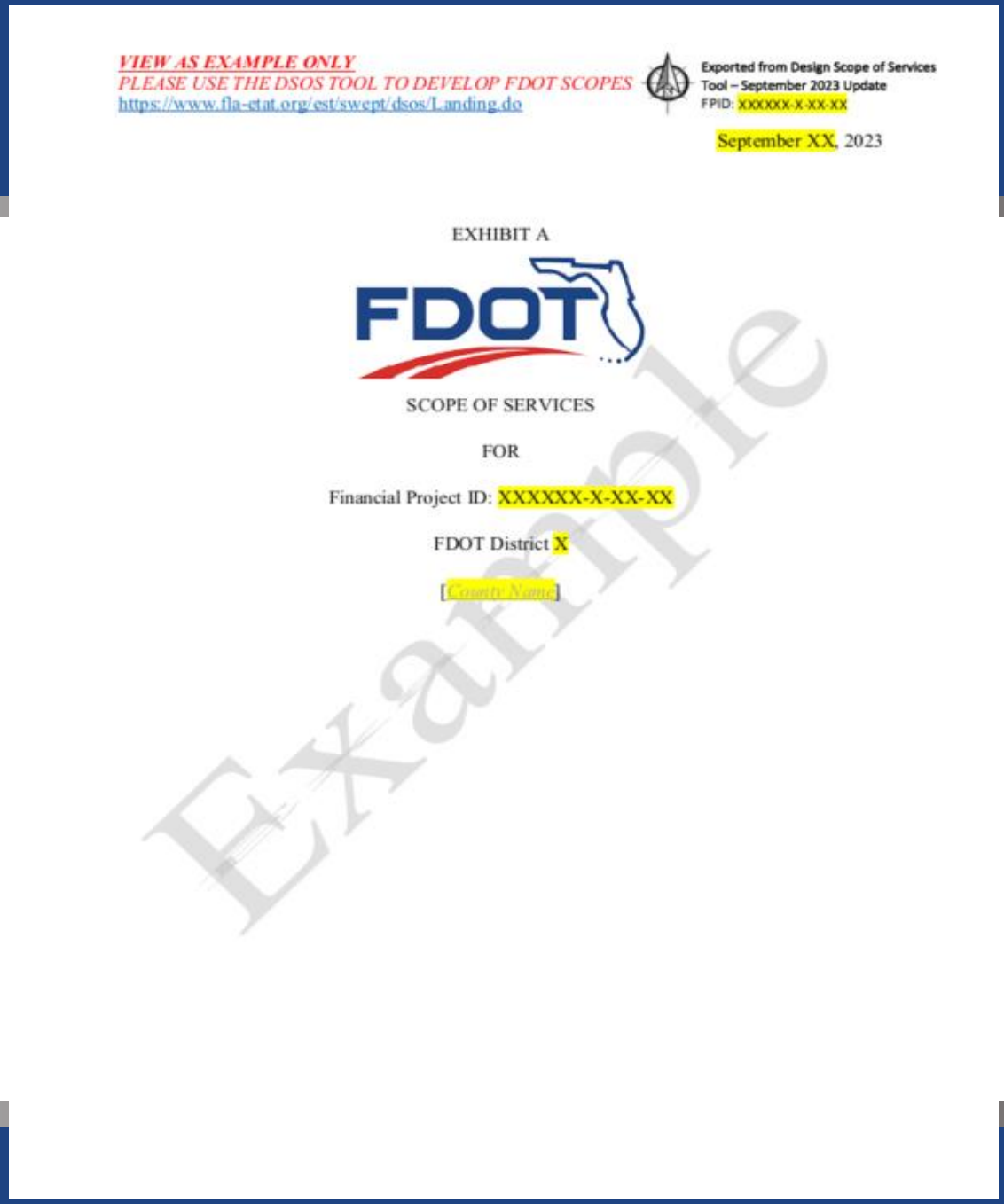
Design Staff Hour Estimation (SHE) Guidelines - *(Updated September 2023)* This is an MS Excel file containing over 30 worksheets. (Right click on file and save file.) This document provides detailed information, breaking down the activities and tasks that can appear in a scope document, along with recommended staff hour ranges to provide a detailed effort of the design work.

Design Staff Hour Estimation Forms - *(Updated September 2023)* This is an MS Excel file containing over 30 worksheets with formulas. (Right click on link and save file.) These forms are used to record the estimated hours for each activity and task listed in the project specific Scope of Services. These forms are used to estimate staff hours, which are used in the negotiation process. *View* ***Staff Hour Estimation Forms Tutorials*** here.

Revision Log- *(Updated September 2023)* This MS Excel file lists all the changes that have taken place since the last published Scope of Services and Staff Hour Estimation forms and guidelines.

Scope of Services

- Scope of Services
  - Contractual agreement between the Department and the chosen professional firm
  - The Department has developed a Standard Scope of Services for procuring Design services
  - Scope of Services is initiated using the online Design Scope of Services Tool



VIEW AS EXAMPLE ONLY
PLEASE USE THE DSOS TOOL TO DEVELOP FDOT SCOPES
https://www.fla-etat.org/est/swept/dsos/Landing.do

Exported from Design Scope of Services Tool – September 2023 Update
FPID: XXXXXX-X-XX-XX

September XX, 2023

EXHIBIT A

FDOT

SCOPE OF SERVICES

FOR

Financial Project ID: XXXXXX-X-XX-XX

FDOT District X

[County Name]

Example

Difference in Scopes

- Scope of Services
  - How to accomplish the work. Services to be provided by a Professional
  - Engineers, Surveyors, Landscape Architects, etc.
- Scope of Work
  - What is being designed and constructed
  - Example: Widen the road from two to 4 lanes, new lighting, new drainage, and new signals

Staff Hour Estimate

Staff Hours are derived from what is required in the Scope of Services.

Example: *If the scope of services describes that survey is included in the work, there should be staff hours related to survey in the estimate*

The better defined the Scope of Services, the easier it is to estimate Staff Hours

Staff Hour Guidelines

- Excel File
- Staff Hour Estimation Guidelines divided into activities and tasks that follow the Scope of Services
- Provides the Department and Consultant Project Managers with a detailed description of the work efforts
- Goal is uniform and consistent project scoping along with accurate hours estimated for the effort of the task

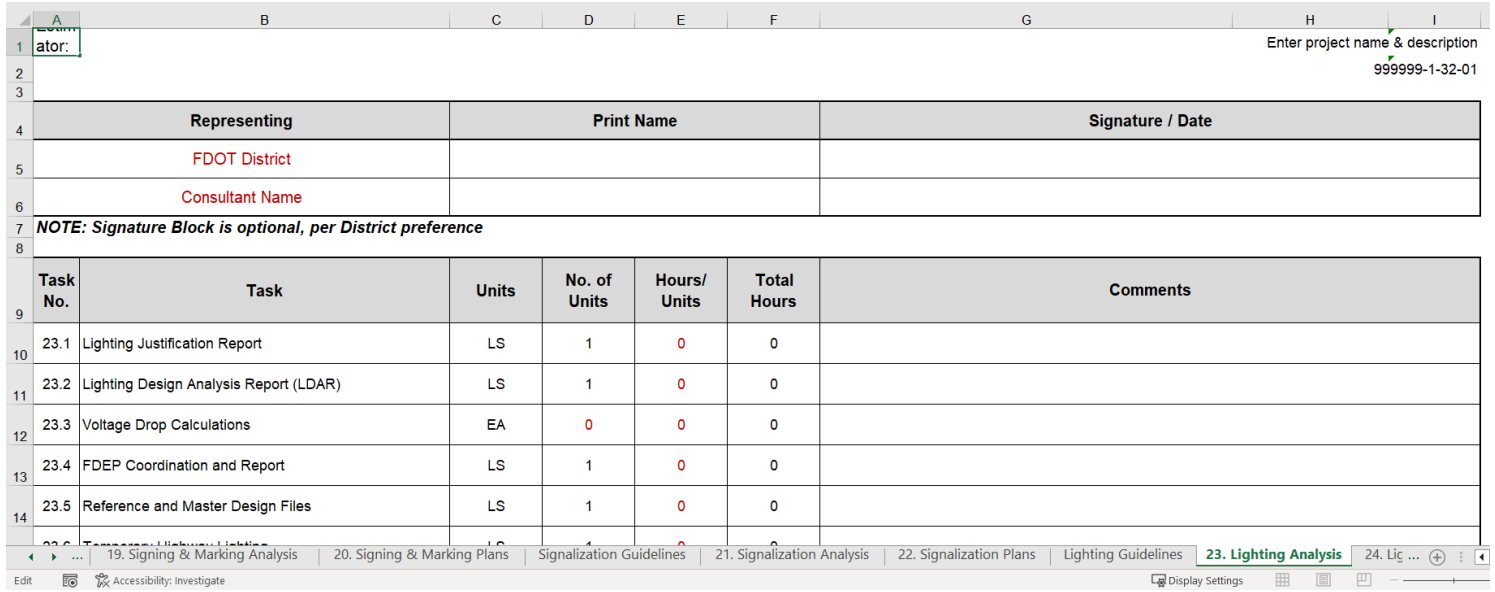
Lighting Analysis				
Task No.	Task	Units	Staff Hour Range	Basis for Staff Hour Range
23.1	Lighting Justification Report	LS	24 to 40	Collect and review crash history, run photo metrics and develop a report per FDOT MUTS, AASHTO & FHWA warrants and FDOT benefit-cost analysis. Includes report preparation and exhibits. Based on complexity of report.
23.2	Lighting Design Analysis Report (LDAR)	LS	See Basis for Staff Hour Range	Provide an LDAR in accordance with the requirements of the FDOT Design Manual. Corridor Lighting: 40-80 hours for proposed corridor lighting. Intersection Lighting: 4-12 hours for each proposed signalized intersection lighting design.
23.3	Voltage Drop Calculations	EA	1 to 4	Voltage drop calculation for each circuit (typical service point has four branch circuits) to verify that conductors are sized properly.
23.4	DEP Coordination & Report	LS	16 to 20	Includes effort to coordinate Florida Department of Environmental Protection (DEP) review and submit report to include provisions for preventing disorientation of sea turtles as required per DEP.
23.5	Reference and Master Design Files	LS	See Basis for Staff Hour Range	Establishing the lighting master design file to include all applicable reference files . This includes all work to create elements showing the alignment in plan view. Includes design and layout of proposed light poles, conductors and conduit runs, load center locations, pull box, service points, electrical service feed. and efforts required for drafting and clean up of reference files . Corridor Lighting (LS - Lower Range: 15 hours for set up, and 40 hours per mile including cross roads; Middle Range: 25 hours for set up, and 90 hours per mile including ramps and cross roads, Upper Range: 35 hours for set up and 140 hours per mile including ramps and cross roads (ranges based on project classifications shown in the guidelines for this section). Per Mile - based on the length of the lighting required to be shown in plan view per the scope of services. Add 8-20 hours for each signalized intersection lighting design.
			See Basis for	Develop a Temporary Highway Lighting design and, when required, a Temporary Highway Lighting design file. The Temporary Highway Lighting design must account for all phases of the TTCP and includes the analysis,

21. Signalization Analysis | 22. Signalization Plans | Lighting Guidelines | **23. Lighting Analysis** | 24. Lighting Plans | Landscape Guidelines | 25. Landscape Analysis

4. Roadway Analysis		
Task No.	Task	Basis for Staff Hour Range
4.1	Typical Section Package	All work required to develop and obtain approval of the typical section package according to the FDOT Design Manual (FDM). Also includes any modification received from reviews. Based on 6 hours for the cover/data sheet and location map. Based on 6 hours per typical section for 2-lane flush shoulder and ramps, 8 hours per typical section for 2-lane curbed and multi-lane flush shoulder, and 10 hours per typical section for limited access with barrier and multi-lane curb.
4.2	Pavement Type Selection Report	All work required to develop and obtain approval of the Pavement Type Selection Report according to the Pavement Type Selection Manual. Also includes any modification received from reviews. Based on 8 hours for a memo, 40 hours for a typical report, and 50 hours for a report with a complex analysis.
4.3	Pavement Design Package	Includes pavement type selection and all necessary coordination to resolve issues related to pavement design when provided by the Department. Initial set-up includes collecting all data necessary for entire project limits. The preparation and assembly of the report is based on 16 hours for below low complexity projects, 24 hours for low complexity projects, 32 hours for mid complexity projects, 40 hours for upper complexity projects, and 48 hours for above upper complexity projects. Pavement designs are based on 8 hours for each travel/auxiliary lane design and 4 hours for each other roadway (ramps, side roads, frontage roads) and shoulder design.
4.4	Cross-Slope Analysis	Includes all work necessary to analyze existing cross-slopes and crash data, and develop cross-slope correction concepts. Cross-slope assessment is based on 1.5 hours per mile for undivided roadways and 2.5 hours per mile for divided roadways. Cross-slope concepts for corrections are based on 6 hours per each concept required to address cross-slope correction.
4.5	Safety Analysis	Includes all work necessary to perform all safety analysis required for roadway design. This effort includes safety analysis (justification/mitigation) as needed for design variations and exceptions. A Highway Safety Manual (HSM) assessment is based on 40 hours for a simple assessment, 50 hours for a standard assessment, and 60 hours for a complex assessment. Crash analysis is based on 8 hours for a simple analysis of crash reports, 24 hours for standard analysis of crash reports, and 40 hours for a complex analysis of crash reports.
4.6	Design Analysis	**Monitor Existing Structures:** Includes work required to visually identify existing structures in need of monitoring (as required in FDM 117) to identify the necessary pay items to be included in the bid documents. Optional services may be negotiated at a later date if needed. Coordinate with and assist the geotechnical engineer and/or structural engineer to develop mitigation strategies (when applicable). Based on 4 hours for below low and low complexity projects, 8 hours for mid complexity projects, 12 hours for upper complexity projects, and 16 hours for above upper complexity projects containing existing structures requiring monitoring. **Access Management:** Includes all efforts required to determine location and types of median opening modifications and driveway connection

Staff Hour Forms

- Excel File
- Provides the Department and Consultant Project Managers with a consistent workbook to estimate staff hours and documentation



ator:

Enter project name & description

999999-1-32-01

Representing	Print Name	Signature / Date
FDOT District		
Consultant Name		

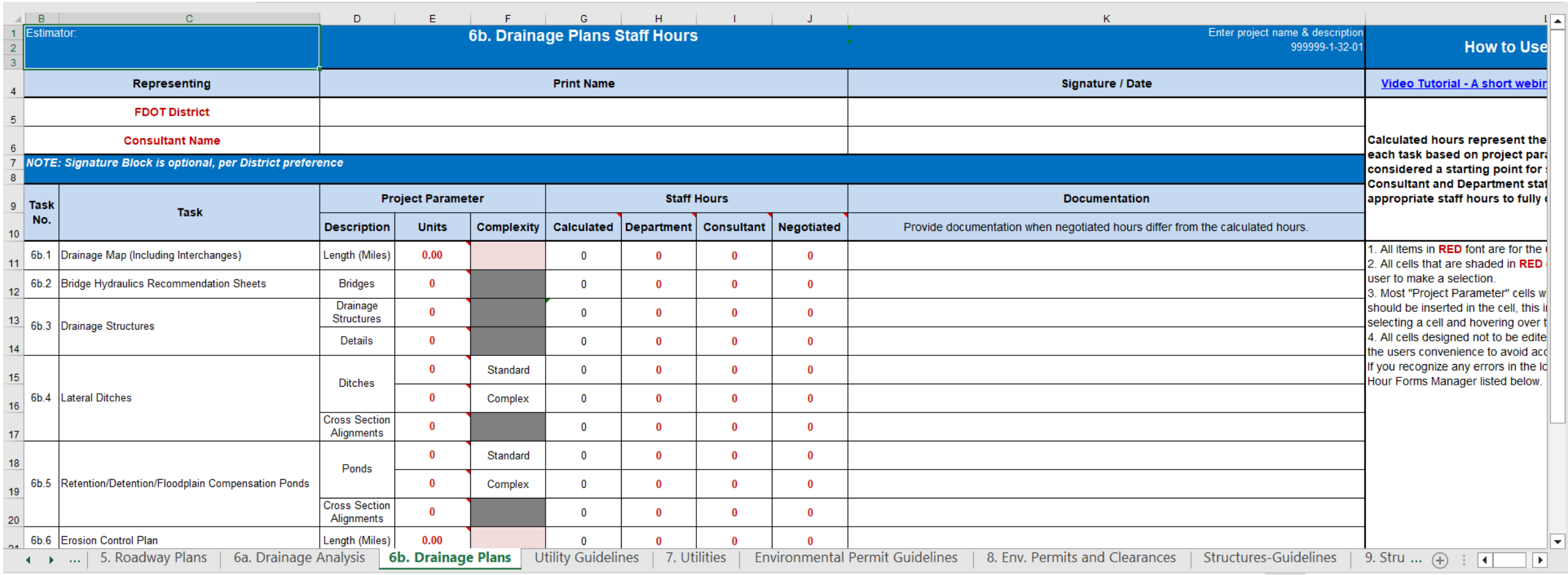
NOTE: Signature Block is optional, per District preference

Task No.	Task	Units	No. of Units	Hours/ Units	Total Hours	Comments
23.1	Lighting Justification Report	LS	1	0	0	
23.2	Lighting Design Analysis Report (LDAR)	LS	1	0	0	
23.3	Voltage Drop Calculations	EA	0	0	0	
23.4	FDEP Coordination and Report	LS	1	0	0	
23.5	Reference and Master Design Files	LS	1	0	0	

19. Signing & Marking Analysis | 20. Signing & Marking Plans | Signalization Guidelines | 21. Signalization Analysis | 22. Signalization Plans | Lighting Guidelines | 23. Lighting Analysis | 24. Lic ...

Edit | Accessibility: Investigate | Display Settings

New Staff Hour Forms Format



Estimator:

6b. Drainage Plans Staff Hours

Enter project name & description
999999-1-32-01

How to Use

Representing	Print Name	Signature / Date
FDOT District		
Consultant Name		

NOTE: Signature Block is optional, per District preference

Video Tutorial - A short webir

Calculated hours represent the each task based on project para considered a starting point for Consultant and Department staf appropriate staff hours to fully

Task No.	Task	Project Parameter			Staff Hours				Documentation
		Description	Units	Complexity	Calculated	Department	Consultant	Negotiated	Provide documentation when negotiated hours differ from the calculated hours.
6b.1	Drainage Map (Including Interchanges)	Length (Miles)	0.00		0	0	0	0	
6b.2	Bridge Hydraulics Recommendation Sheets	Bridges	0		0	0	0	0	
6b.3	Drainage Structures	Drainage Structures	0		0	0	0	0	
		Details	0		0	0	0	0	
6b.4	Lateral Ditches	Ditches	0	Standard	0	0	0	0	
			0	Complex	0	0	0	0	
		Cross Section Alignments	0		0	0	0	0	
6b.5	Retention/Detention/Floodplain Compensation Ponds	Ponds	0	Standard	0	0	0	0	
			0	Complex	0	0	0	0	
		Cross Section Alignments	0		0	0	0	0	
6b.6	Erosion Control Plan	Length (Miles)	0.00		0	0	0	0	

1. All items in **RED** font are for the
2. All cells that are shaded in **RED** user to make a selection.
3. Most "Project Parameter" cells w should be inserted in the cell, this i selecting a cell and hovering over t
4. All cells designed not to be edite the users convenience to avoid acc

If you recognize any errors in the lo Hour Forms Manager listed below.

... | 5. Roadway Plans | 6a. Drainage Analysis | **6b. Drainage Plans** | Utility Guidelines | 7. Utilities | Environmental Permit Guidelines | 8. Env. Permits and Clearances | Structures-Guidelines | 9. Stru ...

New Staff Hour Forms Format

- Changes
  - New way of estimating hours
  - Start by imputing project parameters (length, quantities, task complexity, project complexity, etc.)
  - Ranges are gone, Staff Hours will be calculated based on the project parameters and the established guidelines
  - Calculated hours are used as a ***starting point*** for negotiations.
- The Consultant and Department must analyze the calculated hours based on the scope of the project and determine if the hours are accurate, too few, or too many.
- Documentation is key when requesting more or less hours than calculated.

New Staff Hour Forms Format

- Changes
  - Section 36 – 3D Modeling is gone.
  - 3D design efforts are now incorporated into the specific design sections

New Forms Benefits

- Easy to fill out known parameters
- Automatically calculates an initial estimate based on established guidelines
- Complexities are better defined by the guidelines
- Guidelines embedded into forms so you don’t have to have multiple spreadsheets open

Schedule to Update to New Format

Published Updates

January 2022 – 6b. Drainage Plans & 26. Landscape Plans

June 2022 – 20. S&PM Plans, 22. Signal Plans, & 24. Lighting Plans

September 2023 – 4. Roadway Analysis, 5. Roadway Plans, 6a. Drainage Analysis, 6c. Selective Clearing & Grubbing (new), 25. Landscape Analysis, 29. Mapping, & 34. ITS Plans.

36. 3D Modeling removed from SH Forms

Planned Future Updates

3. Project General Tasks, 7. Utilities, 8. Environmental Permitting,19. S&PM Analysis, 21. Signals Analysis, 23. Lighting Analysis, & ITS Analysis

Tabs remaining to be updated: 9 – 18 Structures Tabs, 27. Surveying, 28. Photogrammetry, 30. Mobile LiDAR, 31. Architecture, 32. Noise, & 35. Geotechnical.

Safety Message

BUCKLE UP
FLORIDA

FDOT

TARGET ZERO
FATALITIES & SERIOUS INJURIES

TRANSPORTATION SYMPOSIUM

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TRANSPORTATION SYMPOSIUM


TIME FOR QUESTIONS
12
1
2
3