

# Scope This Out!

Update on the  
Design Standard Scope of Services  
and Staff Hour Estimates (SHE)

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Dianne Perkins – Production Support Office  
Tim Folsom – District 7 GC – “The Scope Dude”



## The Beginning . . .

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Difficult Getting to “Yes”

## The Scope Odyssey



### 2000-2001

- Roadway Team developed overall concept
- Formed 13 teams representing all disciplines of Design and PD&E
- Established the Standard Scope and standard negotiation work items
- Every task had a corresponding item in negotiations



## 2002-2006



- Standard Scope and Staff Hour Forms available in 2002
- Mandatory use required by procedure number 375-030-020

## 2008

### The Scope Odyssey Continues



## Teams

- Architectural  
**Mark Weigly**
- Geotechnical  
**Larry Jones**
- ITS  
**Elizabeth Birriel**
- Landscape  
**Jeff Caster**
- Permits  
**Catherine Bradley**
- Right of Way Mapping  
**Horace Roberts**
- Roadway  
**Frank Sullivan**
- Structures  
**Jonathan VanHook**
- Survey  
**Horace Roberts**
- Traffic Plans  
**Chester Hinson**
- Utilities  
**Gordon Wheeler**

## General Changes

- Updated publications list
- Table of Contents went from 36 pages to 1 ½.
- Removed outdated material and references



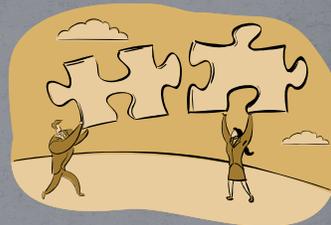
# Project General Tasks

## 3.1 Public Involvement

### Public Involvement Activity 3.1

#### The Problem:

- Difficult to define activities
- Difficult to estimate hours



#### The Solution:

- Identified 12 Public Involvement Tasks
- Set very clear staff hour ranges

### 3.1.1 Community Awareness Plan (CAP)

Project  
General Task  
3.0

Public  
Involvement  
Activity 3.1

- Research & coordinate to develop a public involvement plan.
- Consider issues about how information will be gathered & disseminated to and from the public.



### 3.1.2 Notifications

Project  
General Task  
3.0

Public  
Involvement  
Activity 3.1

- Prepare notifications to public officials that the project is beginning.
  - Includes preparing draft and district review.
- The Districts send the notifications



### 3.1.3 Prepare Mailing Lists

- Prepare new list or update PD&E list.
- The Districts send the notifications.

Project  
General Task  
3.0

Public  
Involvement  
Activity 3.1



### 3.1.4 Median Modification Letters

- Prepare form letter template
- Modify template for each median opening location
- Prepare a sketch of the proposed median modifications

Project  
General Task  
3.0

Public  
Involvement  
Activity 3.1



### 3.1.5 Driveway Modification Letters

- Prepare form letter template
- Modify template for each property owner.
- Prepare a sketch of the driveway modifications for each affected property.

Project  
General Task  
3.0

Public  
Involvement  
Activity 3.1



### 3.1.6 Newsletters

- Prepare & distribute newsletters
- Department & Consultant will agree on the number of editions over the life of the project.

Project  
General Task  
3.0

Public  
Involvement  
Activity 3.1



### 3.1.7 Renderings and Fly-throughs

- Prepare renderings and fly-throughs
- Thoroughly defined in Scope
- Scope should state level of detail and animation

Project  
General Task  
3.0

Public  
Involvement  
Activity 3.1



### 3.1.8 PowerPoint Presentations

- Prepare PowerPoint Presentation for use in public meetings.
- Develop slides and coordinate reviews
- Possible voice-overs

Project  
General Task  
3.0

Public  
Involvement  
Activity 3.1



### 3.1.9 Public Meeting Preparation

Project  
General Task  
3.0

Public  
Involvement  
Activity 3.1

- Prepare meeting materials
- Activities may include:
  - Meeting notification mailing
  - Newspaper display ads
  - Meeting exhibits
  - Sign-in sheet
  - Preparing flyers, fact sheets
  - Site selection and development of meeting layout



### 3.1.10 Public Meeting Attendance / Follow-up

Project  
General Task  
3.0

Public  
Involvement  
Activity 3.1

- Set-up and attendance at public meetings
- Prepare meeting summary
- Do NOT include these hours in 3.6  
(Prime Consultant PM Meetings)



### 3.1.11 MPO Meetings

- Make presentation at MPO meeting and prepare meeting summary
- Assume same presentation and boards used from public meeting.
- Includes one participant
- Do NOT include these hours in 3.6 (Prime Consultant PM Meetings)

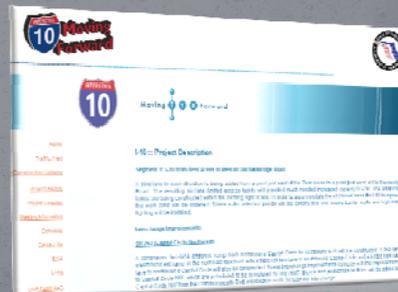


Project  
General Task  
3.0

Public  
Involvement  
Activity 3.1

### 3.1.12 Web Site Development

- Develop and maintain an internet web page or site for the project and to collect public comments.
- 20-60 hours dependent on size and complexity of web site.
- 2-6 Hours month for web maintenance.



Project  
General Task  
3.0

Public  
Involvement  
Activity 3.1



Electronic Delivery





# Electronic Delivery

In the beginning



# Electronic Delivery

Project General Task 3.9

## Electronic Delivery Formula

So Simple...Even a CAVEMAN can do it!

$$f(n+1) \leq f(x) \leq f(n),$$

which implies

$$f(n+1) \leq \int_n^{n+1} f(x) dx \leq f(n),$$

that is,

$$\frac{1}{(n+1)\ln(n+1)} \leq \int_n^{n+1} \frac{1}{x \ln(x)} dx \leq \frac{1}{n \ln(n)}$$

Using this inequality, we get

$$\int_2^{n+1} \frac{1}{x \ln(x)} dx \leq \frac{1}{2 \ln(2)} + \dots + \frac{1}{n \ln(n)}$$



## Electronic Delivery Formula

**Per Submittal**  
**Hours = 4 + n + x**

n = Number of Plans Components

x = Number of Plan Sheets Multiplier

(1.00)(# of sheets/100) for ≤ 500 Sheets

(1.25)(# of sheets/100) for < 1,000 Sheets

(1.50)(# of sheets/100) for < 1,500 Sheets

## Electronic Delivery Formula

# Example

$$\text{Hours} = 4 + n + x$$

4 = Number of Plans Components

400 = Number of Plan Sheets

(1.00)(# of sheets/100) for  $\leq 500$  Sheets

(1.25)(# of sheets/100) for  $< 1,000$  Sheets

(1.50)(# of sheets/100) for  $< 1,500$  Sheets

$$12 = 4 + 4 + 4$$



## Landscape Issues

25 - Landscape Architecture Analysis

26 - Landscape Architecture Plans

## New Landscape Guidelines

PROJECT SCOPE	LOWER			MIDDLE			UPPER			RATING
Complexity of Landscape Design	Trees Only			Trees and Shrubs			Specialized Planting			
Roadway Type	Existing Roadway			Roadway Widening			New Roadway Alignment			
Roadway Elements	Minor Intersections			Standard Interchanges			Multiple-Level Interchanges			
Roadway Location	Rural			Suburban			Urban			
Utility Coordination	Minimum (Rural)			Moderate (Suburban)			Extensive (Urban)			
Outdoor Advertising	1-3 Advertisers			4-6 Advertisers			7+ Advertisers			
Stakeholder Participation	1-3 Stakeholder Meetings			4-6 Stakeholder Meetings			Public Workshops			
Irrigation System	1-2 controllers, potable supply			3-4 controllers, wells, multiple mainlines			5+ controllers/Central Control			
Hardscape Development	Simple surfaces, catalog items			Moderate patterns, special elements			Custom vertical elements, walls, structures			
Other Considerations (Explain)										
TOTAL POINTS										

Lower Range – Total Points <30  
 Middle Range – Total Points 30-50  
 Upper Range – Total Points >50

## Landscape Changes



References to *Technical Maintenance Plan* were removed

Technical Maintenance Plan is now a unique task



## Survey Issues

27 - Survey

## Survey Issues

New Task for Survey  
*Reference Points*

Scope language changes  
throughout Scope and  
Staff Hour Estimation  
Guidelines and Forms





## Right of Way Mapping

29 - Mapping

## 29 – Mapping

- Major language added for Supplemental Mapping
- District Right of Way Surveyor must approve



Removed all references to  
Civil Engineering.

Renumbered entire section.



## Architectural

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31-Architecture Development

New Guidelines  
ITS Analysis  
ITS Plans



**ITS** Intelligent Transportation Systems

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New Sections 33 & 34



**Open the Pod Bay Doors, Hal**



**The Scope Odyssey will continue!**