PLAN PREPARATION

Project Steps

The project steps refer to the work path a project must follow in progressing from the recognition stage through design to construction and final acceptance for maintenance. The Traffic Engineering Design Division regularly designs projects that fall into one of the following four categories:

1. Shop-Forces Projects – These projects are usually small in nature and are designed for construction by SHA personnel.

2. Areawide Projects – These projects typically range from small sized to medium sized and are designed for construction by one of the on-call Areawide Contractors.

3. Insert Projects – These projects are typically medium to large construction. They are designed to be inserted (thus the name) into plan sets that will be advertised by another Division that is acting as the project lead (typically Highway Design, District Special Projects, Bridge Design, or Landscape Design).

4. Advertised Projects – These are projects of various sizes that are advertised directly by TEDD. Occasionally, these also include the advertisement of specific projects. For example, SHA might advertise a project to upgrade all the traffic control devices along a particular stretch of roadway.

The administrative and approvals processes for each of these four categories are slightly different, and they follow slightly different time frames. For the purposes of this manual, we will focus on the design, review and approval processes and necessary coordination. This manual will not cover the procedural steps required to secure funding, schedule construction, and obtain Federal Aid approval.

Shop Forces Projects

These projects may be initiated by phone call, fax (knock-downs), Design Request (DR), or hand-written note. They tend to be less formal and can follow a rapid schedule when required.

Typically, the Shop Forces design process is uncomplicated and involves minimal coordination beyond the shop and possibly the District Traffic office. For this reason, these projects are ideal for quick turn-around construction with short schedules.

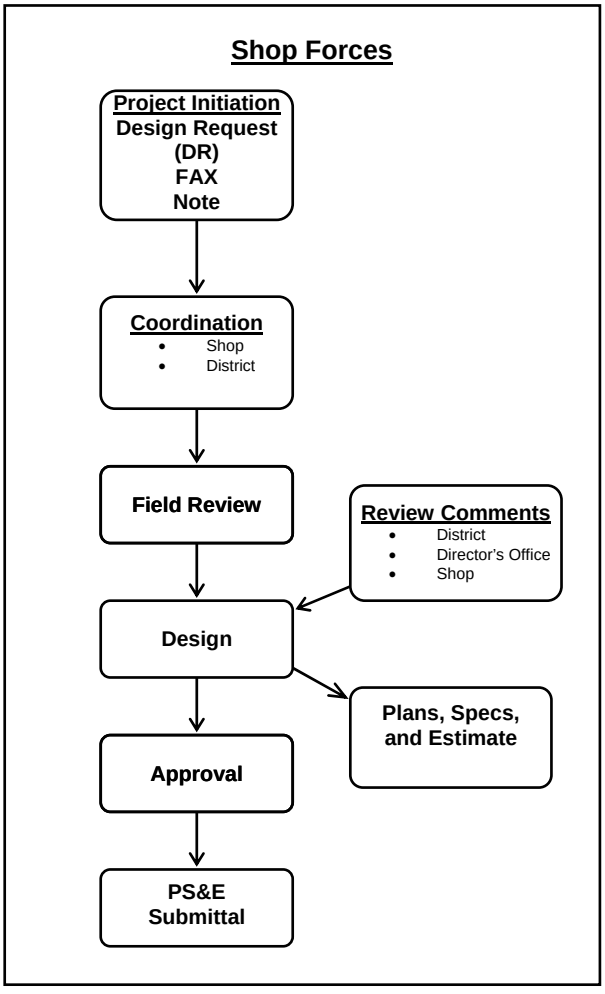

Figure 74 - Shop Forces Project Flow Chart

Areawide Projects

Areawide projects are usually initiated when the District Traffic Office completes a Design Request (DR) and sent to the OOTS Director for approval. The actual design process begins when the appropriate TEDD Team Leader receives the approved DR.

Areawide projects have a few coordination items that must be initiated as early as possible in the design process. In order to comply with Federal Aid requirements, an environmental review must be performed. This does not require detailed design information, and is usually done early on in the project to avoid delays. The Federal Aid process also requires a review of utility conflicts, and where appropriate an estimate of the relocation costs. For projects that require a new power feed, the confirmation of power location should be sent to the utility company as early as possible. This will confirm if power is available early in the design process. Note that this is not an official application for power, which will be requested during construction. In order to ensure that a project is not delayed, it is recommended that these requests be submitted as early as possible.

Insert Projects

On Insert Projects, Highway Design or another division acts as the project lead for tracking schedules, budgets and estimates. This eliminates the Areawide project steps of submitting preliminary and final 25C forms and getting environmental and utility certification. The remaining steps in the design process involve coordination and review, and are largely dependent on the overall project schedule and progress.

The reviews specified in the Insert Projects flow chart do not necessarily correspond to the formal Highway Design Reviews at PI, Semi-Final Review and Final Review. While participation in these reviews is helpful for both TEDD and all other project participants, the Concept Review must take place separately from these reviews.

It is important for these projects to coordinate your design schedule around the Highway Design

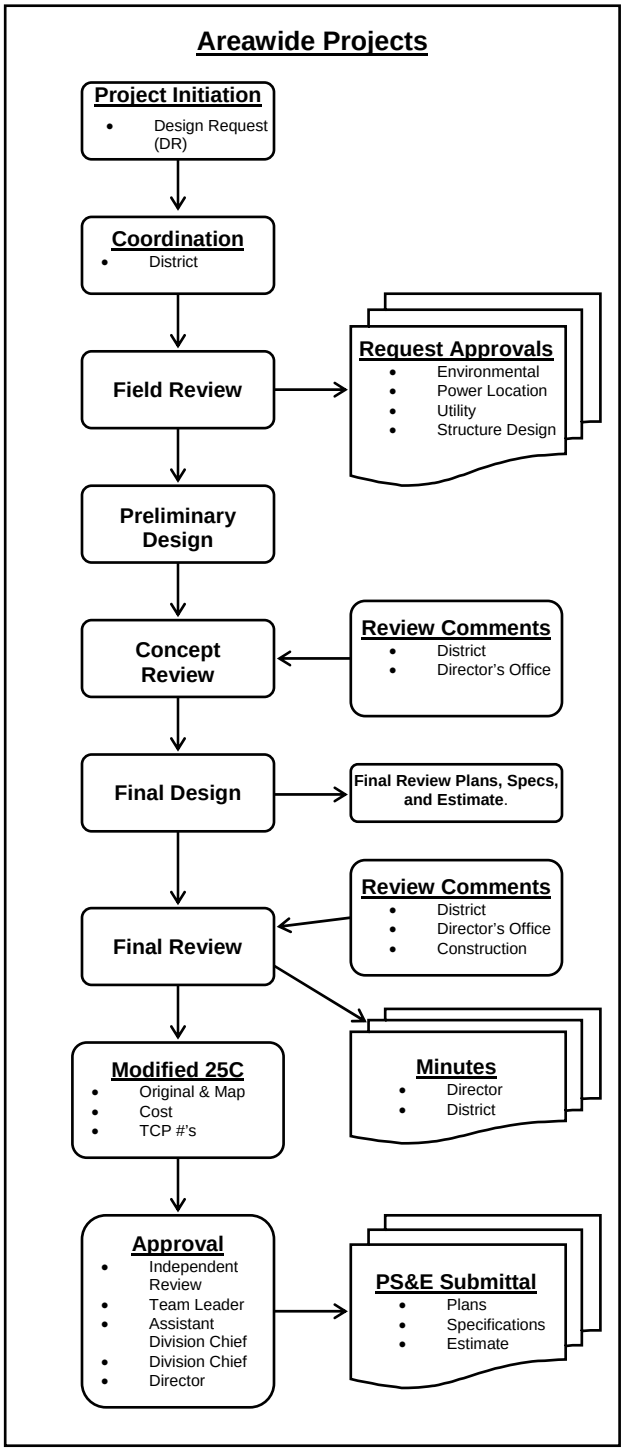

Figure 75- Areawide Project Flow Chart

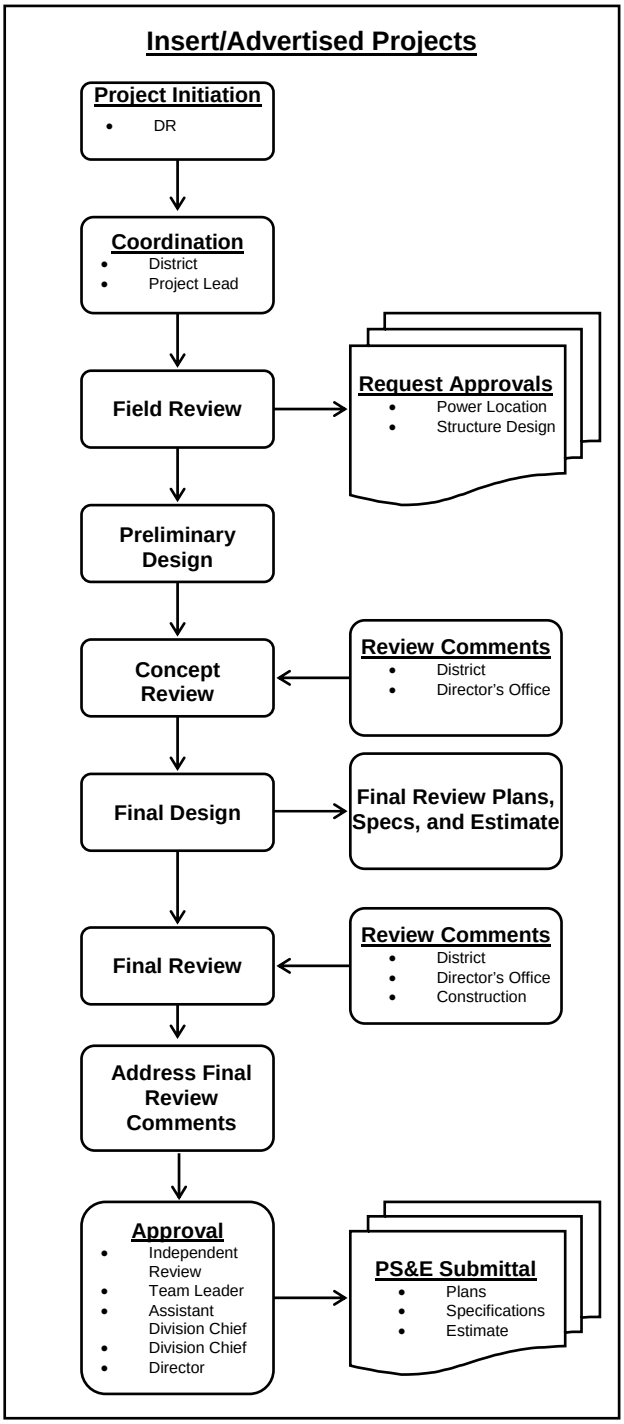

Figure 76 - Insert Project Flow Chart

schedule. For example, since the signing and marking is designed to fit the roadway design, selection of final structure and sign locations cannot take place until after the Semi-Final Review and sometimes Final Review. Prior to the Semi-Final Review, locations can be selected and checked on a preliminary basis, with the understanding that they must be checked and possibly revised after the Final Review.

Advertised Projects

Advertised projects are both designed and advertised by TEDD, who is the project lead. In most circumstances, they are developed entirely within TEDD, and no other divisions are involved. This is typical of the Areawide construction contracts for Signs, RPM's, and Signals. The design process for these projects is the same as on Insert jobs, with the exception that the TEDD Project Manager sets the schedule and milestone dates, and is also responsible for obtaining all the permits and certifications.

Final Review

The final review takes place at about 90% design completion, and it provides all key players a last chance to comment on the plans and specifications. The final review meeting may take place in conjunction with the Highway Design Final Review, but it is common for a separate meeting to take place that focuses on traffic issues. As with the Concept Review, it is important for TEDD, District Traffic, the Directors Office, and construction to be present. This is the last chance to verify the plans and specifications coordinate with other disciplines, comment on the traffic control devices, and check that all relevant issues are addressed.

Contents of PS&E Packages

The final package, which is submitted when design is complete, is referred to as a PS&E package, short for Plans, Specifications and Estimate. What is included in a PS&E package depends on the requirements for a given project type. Generally, In House projects require the least detail and Insert/Advertised projects require the most. The

table below lists PS&E package contents and plan sheet requirements for each project type.

SP's and SPI's

SP's (Special Provisions), and SPI's (Special Provisions Inserts) define the materials, construction, measurement, and payment terms for every item in a construction project. They are used in conjunction with the Standard Specifications for Construction and Materials. According to the governing order defined in the Terms and Conditions, Special Provisions govern and take precedent over the Standard Specifications. It is important to use the latest version of these documents and any SP changes must be approved by OOTS/TEDD. These documents are used as follows:

Standard Specifications: These are the standard set of contract specifications, defining materials, construction, measurement and payment terms for common construction items. They are considered a part of every contract advertised by SHA.

Special Provisions: These are written to define materials, construction, measurement, and payment terms for items on a specific contract. When the terms of the Standard Specifications need to be changed for a project, a special provision must be included in the contract. They also must be written for every contract item not covered by the standard specifications.

Table 12 - Contents of PS&E Package

Item	Shop Forces	Areawide	Insert/ Advertised
Transmittal	X	X	X
Areawide Checklist		X	
FR Minutes	X	X	
Power Confirmation		X	X
Location Map	X	X	
Work Description	X	X	X
Signing and Pavement Markings			
Title/General Notes (SN-1)			X
Sign Plans (8½ x 11)	X	X	
Sign Plans (SN-2)			X
Sign Details (8½ x 11)	X	X	
Sign Details (SN-3)			X
GM Supports (SN-4)		X	X
Overhead Structures (SN-8 & SN-9)		X	X
Index of Quantities (SN-11)		X	X
Signals			
Title/General Notes			X
Signal Plans	X	X	X
Signal General Information		X	X
Signal System Plans	X	X	X
Lighting			
Title/General Notes			X
Lighting Plans	X	X	X
Lighting Schedules	X	X	X
Lighting Details	X	X	X
Index of Quantities		X	X