

COBB COUNTY
Department of Transportation



Cobb County...Expect the Best!

Pre-Construction
Policy and Procedure Manual

Approved By:  _____
Director

Date: April 7, 2011

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INTRODUCTION

A. General

The policies and procedures identified in this manual are intended for use primarily by the **Pre-Construction Division** of the **Cobb County** Department of Transportation (DOT) for management of designs for major capital projects in the **Transportation Improvement Program (TIP)**. Depending on the complexity of the shoulder widening, intersection improvement, or sidewalk projects, these policies and procedures may be utilized for the implementation of those projects. It is understood that the level of complexity may, or may not be, the same, but the principles of this manual can be adapted to utilize the personnel available.

The proper development of the concepts and detailed designs of projects to be constructed by or for **Cobb County**, funded by the citizens of **Cobb County**, is a responsibility that must consider many different, and sometimes conflicting, principles. The personnel charged with this responsibility must be able to evaluate the proper criteria, engineering standards, methods of construction, impacts on adjacent property owners, standards of safety for the public who will be utilizing the roadway, and especially the costs of construction and the acquisition of right-of-way and easements to provide the best improvement possible, while spending the money of **Cobb County's** citizens economically and effectively.

B. Purpose

The purpose of this manual is to provide the basis upon which **Cobb County** DOT's **Pre-Construction Division** will prepare, or have prepared by outside engineering firms, construction plans for the construction of all major projects that may be a part of the existing or future **County** Capital Improvements Program(s). The policies and procedures of this manual provide guidelines by which the **Pre-Construction Engineer** can perform professionally in accomplishing these tasks with in-house staff and in administering each **Consultant** contract. The **Chief Engineer** will provide the necessary overview and supervision for compliance with the policies and procedures contained herein.

C. Scope

This manual contains Policy Directives that provide management objectives as well as procedures for implementing these Policy Directives. Procedures are to be implemented to the extent provided, with any working variances approved by the **Chief Engineer**. Any clarifications that may be required, or any discrepancies that may result from the combined use of the above, are to be brought to the attention of

the **Chief Engineer**. Whenever specific directions or procedures are contained in contract documents for an individual contract, the contract documents take precedence over this manual.

These procedures relate to the complete design of a project(s) within the program from the development of a concept by the DOT through the recommendation for award of a construction contract – with the exception of the acquisition of right-of-way and easements. Procedures for the acquisition of right-of-way are included in the Policy and Procedures manual for the Land Acquisition Section of the DOT.

It is understood that some sections of this manual are not applicable when the design of projects is accomplished by **County** staff without requiring the contracting of an outside **Consultant**. The **Pre-Construction Engineer** shall apply the appropriate procedures when necessary in these cases.

D. Revisions

Any revisions to this manual will be documented in writing, approved by the Director, and issued as replacement pages that will be identified by a sequential revision number. Each revised page shall indicate the date of revision in the "Date" block in the heading, and indicate the previous date of issue of the page being replaced. The letter of transmission shall be similar to the "Approval" page in the beginning of this manual, and shall list all pages included in the transmittal with their revision date. The transmittal letter shall be inserted into the manual in front of the previous revision approval or Original Issue page.

Revisions shall be inserted into the manual by the person to whom it has been issued, and superseded pages discarded.

The Master Electronic Copy of this manual is located at the following location:
common on 'DOT5\users' (H:)\ENGDIV\Departmental Policy Manuals\Pre-Construction Manual\CCDOT Engineering Policy and Procedure Manual.docx

1. Authorities

1.1 Organization Chart

See Exhibit 1.1-1 for the **Cobb County Engineering Division Pre-Construction Section Organization**.

1.2 Assignment of Responsibility

The **Pre-Construction Engineer**, under the supervision of the **Chief Engineer**, has the responsibility for conducting the business of the **County** relating to engineering design as identified in these procedures. The **Pre-Construction Engineer** may from time to time delegate some of these responsibilities to other personnel under his/her supervision.

2. Roles and Responsibilities

2.1 Pre-Construction Engineer

The role of the **Pre-Construction Engineer** is the administration of the design and surveying of transportation projects. The **Pre-Construction Engineer** plans, organizes, directs, and controls the work of engineering groups in the design and survey of all types of projects.

The responsibilities of the **Pre-Construction Engineer** include:

- Coordinate planning and design with Georgia DOT and other governmental agencies.
- Review, negotiate, and make recommendation for the award of the contract with **Consultants** for design of a project.
- Monitor the work of project **Consultants**.
- Assist in the administration, direction, and coordination of field surveying, mapping, office engineering, and the maintenance of records.
- Coordinate construction issues relating to design problems in the field with Construction.
- Prepare cost estimates for establishing project budgets for all transportation projects.
- Develop construction plans.
- Establish design criteria and make decisions on design features.
- Review plans and specifications to ensure cost-efficient, economic designs with minimum impact on adjacent property owners.
- Investigate and resolve citizen questions and complaints.
- Prepare, administer, and review correspondence, reports, and studies. All letters to consultants, citizens, other government agencies shall be done under the signature of the Pre Construction Engineer or Chief Engineer.
- Review and approve payments to **Consultants**.
- Coordinate and implement training of all personnel in the Pre-Construction to allow personnel to better perform their particular assignment and to develop additional capabilities and professional growth.

- Enter the appropriate data into an existing database for the proper monitoring of progress and related engineering and design costs for all projects.
- Make recommendations to Chief Engineer regarding design variances / changes.

2.2 Engineer III (Project Managers & District Engineers)

The role of the **Project Manager** is the supervision, coordination, investigation, development, and operation of engineering progress on transportation projects. The **Project Manager** supervises a unit of engineering concentrated in either the design of projects or technical review and liaison between the **Pre-Construction Engineer** and contracted design **Consultants**.

The responsibilities of the **Project Manager** include:

- Investigate, plan, organize, and schedule the work of engineering design personnel in the areas of design, and field surveying, and determine the most efficient utilization of assignments of personnel.
- Supervise and participate in the calculation of cost estimates for construction of in-house projects.
- Manage and administer work performed by contracted design **Consultants**, including review of plans and calculations for conformance to contract documents, specifications, and the **County Plans Preparation Manual**.
- Assist in review, negotiation, and making recommendation for the award of the contract with **Consultants** for design of a project.
- Review/recommend proposed changes or additional work to services of design **Consultants** and make recommendation to the **Pre-Construction Engineer**.
- Review and recommend approval for monthly progress payments to **Consultants**.
- Enter the appropriate data into the database for the proper monitoring of progress and related engineering and design costs for all projects.

2.3 Engineer II

The role of the **Engineer II** is to perform calculations, design, and preparation of construction and right-of-way plans for transportation projects. The **Engineer II** supervises engineers, technicians, and drafting technicians in the preparation of designs and plans. The **Engineer II** may assist the **Engineer III** in the

administration of **Consultant** contracts and the review of plans and calculations by **Consultants**.

The responsibilities of the **Engineer II** include:

- Prepare design and construction cost estimates for establishing budgets.
- Manage and supervise design groups for in-house design of transportation projects.
- Perform or supervise design detailing and computations for design of projects.
- Assign work to field survey party chiefs.
- Evaluate and advise the **Engineer III** or **Pre-Construction Engineer** for resolution of difficult engineering problems.
- Provide information and responses to questions of citizens regarding transportation projects.
- Provide liaison between **Consultants** and the **Engineer III (Project Manager)** or **Pre-Construction Engineer** for the design and preparation of plans for transportation projects.
- Provide technical advice and administer changes Plans Preparation Manual and revisions for establishing consistent criteria for the design of projects.
- Manage and administer work performed by contracted design **Consultants**, including review of plans and calculations for conformance to contract documents, specifications, and the **County** Plans Preparation Manual.
- Assist in review, negotiation, and making recommendation for the award of the contract with **Consultants** for design of a project.
- Review and recommend approval for monthly progress payments to **Consultants**.
- Enter the appropriate data into the database for the proper monitoring of progress and related engineering and design costs for all projects.

2.4 Engineer I

The role of the **Engineer I** is to perform calculations for design and supervise drafting and detailing for the construction of transportation projects. The **Engineer I** coordinates the activities required for the design of projects of limited scope.

The responsibilities of the **Engineer I** include:

- Participate in the calculation of engineering and construction cost estimates for projects.
- Participate in the preparation of plans, using field books, sketches, calculations, and special instructions.
- Participate in the collection of field information as an instrument man or party chief.
- Prepare field notes, prepare plot profiles, calculate curves, and prepare preliminary estimates of earthwork for transportation projects.
- Review preliminary and final plans for accuracy and completeness.
- Serve as an additional survey personnel if required due to staffing.

2.5 CADD Operator

The role of the **CADD Operator** is to perform skilled CADD development work in the preparation and maintenance of construction and right-of-way plans used by the **Pre-Construction Division**, under the general supervision of an Engineer or higher.

The responsibilities of the **CADD Operator** include:

- Preparation by CADD of construction plans with information provided by **Engineer** or survey field notes.
- Preparation by CADD of right-of-way plans with information provided by **Engineer** or survey field notes.
- Make design calculations as necessary to perform CADD functions.
- Participate in the calculation of engineering and construction cost estimates for projects.
- Assist the **Pre-Construction Division** as necessary to provide plans and/or information to the **Pre-Construction Engineer** or **Chief Engineer**.
- Compile data and prepare plans.
- Perform calculations as needed to determine proper design parameters and details for plans.

- Establish and maintain reference files and plan holders in the Plan Room for plans for all projects being designed and/or constructed by the DOT.
- Assist the public in providing access to plans in the Plan Room files, and answer questions, if knowledgeable.
- Participate in the collection of field information as a member of survey party.

3. Procurement of Consultant Services

3.1 Policy

The first step in the process of implementing the program is to define the project in terms specific enough to determine whether the services of an outside engineering firm are required to complete the project. If so, the **Chief Engineer** and **Pre-Construction Engineer** shall utilize these procedures to proceed with design and to select a design **Consultant** in accordance with **Cobb County** Purchasing Selection Criteria.

3.2 Procedure

3.2.1 Project Definition

The basic services that will be required of the various **Consultants** are included for each phase of the project in the standard contracts. However, it is also necessary to prepare a project description that is unique to each project. This information is needed for each phase of each project in order to solicit letters of interest or to prepare requests for proposals and to negotiate and prepare the individual contracts.

The general description of each project in the Capital Improvements Program is provided in the description. More specific definition, however, is required before actual design can begin. Project definition should be a coordinated effort among the Board of Commissioners, County Manager, the DOT Director, and the **Chief Engineer** with the **Chief Engineer** being responsible for approving the actual description. Other persons such as the Traffic Operation Division Manager, the Transportation Planner, **County** planners, etc. may also provide valuable information. Where projects would be adjacent to, or within, City boundaries, coordination with these governments is also required. This project information is required for preparation of requests for letters of interest or requests for proposals to select the design **Consultant**, referred to within this document as the **Consultant**.

A detailed project definition and Scope of Services is required to negotiate the design contract once a design **Consultant** is selected for negotiation. It also should prevent unnecessary duplication of effort that may occur if the **Consultant** were to unnecessarily reevaluate issues already decided. The items that may be included in the project definition, when appropriate, are:

- Physical limits on each end of the project
- Functional classification
- Grade separations
- Definition of proposed right-of-way
- Intersection special details
- Construction schedule relative to adjacent projects
- Restrictions to right-of-way acquisition (e.g., no additional right-of-way to be acquired, existing centerline must be maintained, etc.)

When possible, each of these items should be settled before actual design begins. This will focus the design process and avoid time being spent to evaluate issues already decided. There will be many cases, however, where some or all of the above issues cannot be decided until after the design process is under way. In any event, all of these issues should be decided by the end of the preliminary design phase. It is the responsibility of the **Consultant** to obtain background documents and information during the preparation of the Traffic Corridor Study and Concept Plan Report, and to clarify design issues not previously resolved.

The detailed project description, as complete as possible, should be included in the design contract itself, and more detailed information should be transmitted to the **Consultant** as it becomes available.

These tasks above are the responsibility of the Project Manager to oversee.

3.2.2 Consultant Selection

The selection process for obtaining qualified design **Consultants** shall be governed by the "Policy for the Procurement of Professional Consulting Services" adopted by the Board of Commissioners, latest version.

When the **Pre-Construction Engineer** has determined that a project is ready for selecting a **Consultant** for design, he shall notify the **Engineering Division** of the **Water System**. The **Water System** may wish to include the design of its relocations associated with the project in the DOT's contract for services. This notification allows the **Water System** to prepare the necessary concepts and documents for negotiating with a **Consultant**.

3.2.3 Standard Contract Documents

Contracts should be prepared from the basis of the Standard Agreement for Consulting Services (**Consultant Services Agreement**) Modifications to the Standard Agreement must be approved by the Director and the **County**

Attorney prior to being submitted to the Board of Commissioners for final approval.

The items that need to be inserted into the Standard Agreement are:

- Schedule, including all milestone dates
- Project number
- Project description
- Name of design firm
- References to specific location
- Method for computing fee
- Manhours and fees for each phase
- Special considerations
- Certificates of insurance
- Signatures of both parties

3.2.4 Contract Negotiation

Unless special considerations warrant revising the Standard Agreement, negotiations generally will be limited to contract durations, fees, and any special conditions that need to be included. Negotiations will be conducted by the **Pre-Construction Engineer** and/or the assigned **Project Manager**.

When the **Water System** has elected to utilize the **DOT Consultant** for the design and preparation of plans for the relocation of its facilities, the **Project Manager** or Division Manager shall negotiate the Scope of Services and fees to be included in the Agreement. The Manager, Engineering, and Records Division shall notify the **Pre-Construction Engineer** of the scope and total fees to be included in the Agreement before the DOT is scheduled to submit the Agreement to the Board of Commissioners for approval.

3.2.5 Contract Approval and Notice to Proceed

Following negotiations, the completed proposed Agreement, executed by the **Consultant**, shall be reviewed by the **Project Manager** and **Pre-Construction Engineer** for completeness using the "Checklist for Processing Contractual Documents" (see **Exhibit 2.1-1**), and shall be transmitted for approval.

After BOC approval, the Notice to Proceed will be prepared by the **Project Manager**, signed by the **Pre-Construction Engineer**, and sent to the contracted **Consultant**.

3.2.6 Contract Management

The **Pre-Construction Division** shall be responsible for managing the progress and technical competency of the design and the preparation of the right-of-way and construction plans developed under the terms of the design Agreement.

The **Pre-Construction Engineer**, under the direction of the **Chief Engineer**, has overall responsibility for the project, including ensuring that each project is completed on schedule and within budgets, and that the design conforms to the established **Cobb County** guidelines and criteria.

The **Pre-Construction Engineer** shall assign a **Project Manager** for the management of each Agreement with a design firm.

The **Project Manager's** responsibilities shall include:

- The Project Managers primary role is the development of the assigned projects, adherence to schedule, and budget. The Project Managers shall be extensively involved in all phases of the project, aware of all aspects of the plans and reports, and report required changes to the Pre Construction Engineer in a timely fashion.
- Project Managers shall review their plans.
- Project Managers are responsible for the overall quality of the plans and to ensure that the Consultant follows their QA/QC plan as identified in the proposal.
- Review and approve **Consultant** schedule for completion of the design.
- Monitor and document key milestone dates and submittals.
- Review **Consultant** invoices for conformance with contract requirements and appropriate billings of workhours in comparison with work progress, recommend for payment, and submit to **Pre-Construction Engineer** for approval.
- Maintain project files, including updated schedule and budget.
- Prepare monthly reports, be prepared to discuss project at monthly letting schedule meeting.
- Enter the appropriate data into the database for the proper monitoring of progress and related engineering and design costs for all projects.
- Coordinate and supervise **In House Design if Applicable**.

- Provide technical direction and review of all decisions and details prepared by the **Consultant**.
- Review and prepare all recommendations for additional services for approval by the **Pre Construction Engineer, Deputy Director** and the Board of Commissioners, when necessary.
- Participate in the selection and negotiations with design **Consultant**.
- Prepare for **Pre-Construction** signature Notice to Proceed for each phase of the design process.
- Review construction cost estimates provided by the **Consultant**.

The **Project Manager** shall be extensively involved in the preparation of the **Consultant's** plans and be familiar with all contents of the plans. The **Project Manager** shall keep the **Pre-Construction Engineer** informed of any departures from **Cobb County** DOT or industry standards.

3.2.7 Smaller Project Design Requirements

For many of the shoulder widening and intersection projects, the design, plans, and documentation may be much less detailed and comprehensive. However, to provide adequate information to allow potential bidders for the construction of the project(s) to bid economically, certain **minimum** plans and details must be prepared.

For these small projects, a design **Consultant** may be contracted to provide the following services and plans:

- Adequate database of existing topography and culture, whether by photography or field survey
- Identification of existing and proposed right-of-way and proposed easements
- Establishment of alignment and profile of existing and proposed improvements, and of side streets if appropriate
- Typical section and cross sections, to determine easements and impacts on adjacent properties and to provide utilities with adequate information to plan their relocations

4. Schedule Control

4.1 Policy

The **Project Manager** will be responsible for reviewing and approving the original schedule for the project that will be included in the Agreement and is responsible for monitoring the schedule throughout the design phase.

Deviations from the project schedule submitted will be approved by Pre-Construction Engineer.

The monitoring of the design contract is just as important for the smaller, less complex design activities associated with shoulder widening and intersection improvement projects. However, the level of activity and milestones identified in this section will be reduced.

4.2 Procedure

4.2.1 Design Schedule

The schedule for the design portion of the project is prepared during negotiations with the **Consultant** and is included in the Agreement. The **Consultant** is responsible for establishing this schedule, which must be approved by the **Pre-Construction Engineer**. The following considerations would be included:

- Adequate time must be provided for each design phase so a quality design can be prepared.
- Adequate time must be provided for **County** staff to make a comprehensive review of submittals.
- Schedules must not be too generous so as to unnecessarily delay construction and use of the facilities by the public, and also result in higher construction costs due to inflation.

4.2.2 Preliminary Project Schedule

When the design schedule is prepared, the **Project Manager** will also evaluate the preliminary schedule for the entire project, from design through construction. If adjustments are necessary, the **Project Manager** shall submit a revised schedule to the **Pre-Construction Engineer** for approval. The **Pre-Construction Engineer** will discuss with the **Development Services Manager** and the **Construction Engineer** the effects on the overall project schedule. This schedule information will be used for

planning purposes and to estimate financial requirements for the project and the entire program.

4.2.3 Monitoring Design

The **Project Manager** is responsible for monitoring the progress of the **Consultant**. Schedule compliance will be accomplished by maintaining regular contact with the **Consultant** to monitor its progress, assisting the **Consultant** in anticipating problems that may create delays, and expediting resolution of issues or decisions that rest with the **County**. Technical questions will be referred to the **Project Manager** or **Pre-Construction Engineer** for resolution, if necessary.

If the design is to be completed on time, a number of key items must be completed by the **Consultant** on a timely basis. The **Project Manager** must monitor and document the following key dates as they occur:

- Written Notice to Proceed
- Receipt of Engineer's Schedule of Activities
- Submission of Traffic Corridor Study and Concept Plan
- Review of database
- Notice to Proceed with preliminary design
- Submission of preliminary right-of-way plans
- Notification to Right-of-Way Section to initiate appraisals/acquisition
- Submission of preliminary construction plans and cost estimate
- Submission of preliminary construction plans to utilities for definition of conflicts
- Field review and approval of preliminary plans and cost estimates
- Notification to **Water System** of approved alignment and grade
- Notice to Proceed with final design phase
- Monthly project meetings
- Utility Coordination
- Assistance in geotechnical investigations, if required

- Submission of final plans
- Verification of right-of-way acquired
- Dates of advertisement
- Pre-bid conference (notify Supervising Engineer - Construction)
- Receipt of bids
- Evaluation of bids and tabulation
- Recommendation/agenda item for construction award
- Award of project

The **Project Manager** is responsible for completing the checklist and retaining it in the project file, or in the CCPMIS. All items are to be documented by including appropriate correspondence in the project file.

4.2.4 Schedule Revisions

Revisions to the project design schedule may be approved by the **Pre-Construction Engineer**. If a submittal is not received on schedule or is submitted but is incomplete, the **Project Manager** should immediately notify the **Consultant** and the **Pre-Construction Engineer**. Unless the **Consultant** demonstrates that the delay was caused by circumstances beyond its control, a schedule revision cannot be approved. If a schedule revision is approved by the **Pre-Construction Engineer**, the **Project Manager** will prepare a letter for **Pre-Construction Engineer** signature to notify the **Consultant** of the revision, and will revise the project schedule.

5. Cost Control

5.1 Policy

Cost control during design involves two separate but related functions. The first is to ensure the **Consultant** performs all required services within budget and is paid according to provisions of the Agreement. The second is to ensure that the **Consultant's** construction cost estimate is reasonable. These estimates, in conjunction with schedule information, provide the DOT with the basis for programming financial requirements of the Capital Improvements Program.

5.2 Procedure

5.2.1 Design Consultant Costs

The Scope of Work to be performed by the **Consultant** and the associated fees are established in the Agreement. The **Pre-Construction Engineer** and assigned **Project Manager** and **Liaison Engineer** are responsible for technical reviews.

The **Project Manager** is responsible for checking all **Consultant** invoices to ensure completeness and consistency with the standard format. Each such progress payment must be verified to ensure that the work being paid for is actually completed.

If there is disagreement about the percent complete, or the format is not correct, the **Pre-Construction Engineer** may decide to pay the amounts not in question, and resolve the disagreement with the **Consultant** before any subsequent invoice submittal.

5.2.2 Estimate of Construction Cost

Estimates of construction cost are to be prepared a minimum of three times during the project:

1. Concept Development / Concept Report
2. Preliminary design estimate prepared during the preliminary phase and submitted with preliminary plans for review
3. Final estimate

Each estimate is to be more refined than its predecessor estimate. A planning level estimate will have been prepared by **County** staff during

development of the program and was the basis for the funding for the program.

At various stages during the preliminary and design phases, the **Consultant** will update its construction estimate, and each should become progressively more accurate. Each new estimate should be compared against the original project estimate to determine if a trend for increased costs is developing, and an evaluation of the design details should be conducted.

While monitoring the budget the Project Manager will recommend budget adjustments at the appropriate times.

5.2.3 Cost Evaluation and Contingency Funding

If the **Consultant's** construction estimate exceeds the original project estimate by more than a nominal amount, steps must be taken to either reduce the cost of the project or provide contingency funding. A cost control evaluation will be prepared by the **Pre-Construction Engineer** and **Chief Engineer**.

The **Pre-Construction Engineer** may authorize revisions to the project as long as the constructed facility will be consistent with the description of the improvements in the program. Additional funding or major project revisions must be authorized by the Director of the Board of Commissioners. The **Chief Engineer** will prepare an evaluation and recommendation that includes the following:

- Background, including latest estimate and original estimate
- Listing of possible items to be eliminated from the project or modified to reduce **Consultant's** estimate to original budget estimate
- Evaluation and comparison of items that could be eliminated or modified
- Transferability of funds from other line items within the same project
- Recommendation

The cost control evaluation will be submitted to the Director for review and authorization of revisions. To obtain additional funding or to make significant changes to the project, review and approval of the Board of Commissioners may be required.

Should the actual construction bid exceed the Engineer's estimate and the project budget, the **Pre-Construction Engineer** must prepare a similar evaluation and recommendation to accept the bid and identify the source of additional funding or to redesign and re-advertise. The Board of Commissioners will then make a final decision on whether to provide the necessary funding.

5.2.4 Cost Reporting

Actual design costs, expenditures, and updated construction cost estimates for each of the projects must be assembled by the **Pre-Construction Engineer**, through the **Project Manager**, for input into the CCPMIS each month so that status reports can be prepared.

6. Design Reviews

6.1 Policy

The primary method of ensuring a quality design is with periodic, structured design reviews. Technical reviews are the responsibility of the **Pre-Construction Engineer**. These reviews are specified in the Scope of Services in the Agreement between the **Consultant** and the **County**. The Scope of Services describes in detail the work that is to be performed by the **Consultant** in each phase and the contents of the deliverables due at the end of each phase.

Project Manager to follow Cobb County DOT Plan Review Manual.

All submittals will be recorded by the **Project Manager**. Copies of all correspondence will be given to the **Project Manager** for filing in the project files.

At each submittal, the **Project Manager** is responsible for ensuring that:

- Each submittal is complete.
- **Cobb County** guidelines are met.
- Deviations from **Cobb County** guidelines, if any, are approved by the **Pre-Construction Engineer**.
- Red-line copies of reports and plans are prepared and returned to the **Consultant**.
- The construction cost estimate is reviewed for accuracy and completeness.

The following sections address specific requirements that must be reviewed and approved by the **Project Manager**.

7. Design Revisions

7.1 Policy

Revisions to the designs may be initiated from several different sources and during any phase of the design process. Requests for revisions may affect designs being prepared by in-house staff personnel or by outside consultants. The **Pre-Construction Engineer** shall be responsible for the review, evaluation, and implementation of all requested revisions for whatever reason.

7.2 Procedure

7.2.1 Requests from Commissioners

It may be necessary during the design phase of a project to consider a request for a design revision that originates from the office of the Commissioners.

All requests will follow the procedure established by the **County Manager**, but the **Chief Engineer** and the **Pre-Construction Engineer** shall evaluate all aspects of the effects of making a revision. Items to consider in the evaluation include:

- The stage of completion of the design and the effects of the revision on the **Consultant's** schedule and contract costs
- Conformance of the request to established **County** standards and criteria
- Right-of-way and construction costs of the revision, and its effect on the project budget
- Conformance with previously constructed projects, and the possibility of setting a precedence for future projects, even though this request may be for a unique case

The conclusions of the evaluation shall be submitted to the **Chief Engineer** for reply to the Director for consideration. No direction shall be given to the **Consultant** until approval is received from the Director.

7.2.2 Requests from Development Services

During the period of appraisal or negotiations with a property owner, requests for design revisions may originate with the purpose of reducing the

costs of acquisition or avoiding or reducing damages to a property. In such cases, the **Development Services Manager** shall submit to the **Pre-Construction Engineer** a "Request for Design Revision" form for consideration.

The **Pre-Construction Engineer** shall review and evaluate the request with the same considerations identified in Section 7.2.1.

Additionally, consideration should be given to the fact that right-of-way or easements for other parcels on the same project will remain to be acquired. The requested revision may be appropriate for other, as-yet unidentified parcels. Therefore, the **Development Services Manager** and **Pre-Construction Engineer** should discuss the possibility because it may compound the effects on the design and construction plans, especially if it affects design or construction costs.

7.2.3 Requests from the Public

Often during the design of a project, private citizens or business owners within the limits or adjacent to a project offer suggestions or request to alter the established design details being performed. For the most part, the **Project Manager** should be able to discuss the proposed revision with the person, and determine the feasibility or practicality of incorporating the request in the plans.

If the citizen insists on requesting the revision, the **Project Manager** shall submit the request to the **Pre-Construction Engineer**.

Evaluation of the request shall consider the same items as above.

7.2.4 Appeal

If, after evaluation, the **Pre-Construction Engineer** denies approval of the request for revision from any source, the request will be forwarded to the **Chief Engineer** for consideration.

The **Chief Engineer** may have additional information available for evaluation that would overturn the decision of the **Pre-Construction Engineer**. If so, the **Chief Engineer** shall direct the **Pre-Construction Engineer** and the **Project Manager** to take the necessary actions to direct the **Consultant** to incorporate the revision into the project plans, as appropriate, and shall notify the Director of the disposition.

If the **Chief Engineer** upholds the decision of the **Pre-Construction Engineer**, he shall notify the originating person of the denial and the reasons for said denial.

If the originator of the request wants to continue to pursue the request, the request will be reviewed by the Director for final disposition.

8. Reporting Procedures

8.1 Policy

The project files form the complete documentation of all activities, events, directions, and communication between the **County** and all persons and agencies with an interest in the project. The completeness of this file is important to provide information that will answer questions about the evolution of the project and the decisions made in determining the final design.

8.2 Procedure

During the design process, the **Project Manager** is responsible for maintaining the project files, which will include:

- Formal correspondence
- Meeting minutes/records
- Telephone conversation records (Memo to File)
- Consultant submittals
- Review comments
- Records of contacts with the public (Memo to File)
- Utility coordination correspondence
- Completed copies of appropriate checklists

The **Project Manager** will retain and maintain these records until the construction of the project is complete and final payment has been made to the construction contractor.

While design is under way, it is the responsibility of the **Project Manager** to enter data into the database and to review periodic reports on the progress of each project submitted by the **Consultant**.

In addition to the standard reports, the **Project Manager** should prepare reports to discuss any issues that need to be resolved, and for which decisions must be recorded. These may include:

- Schedule revisions
- Cost control evaluations
- Deviations from design criteria
- Requests for revisions
- Meeting and telephone conversations records

All meetings and telephone conversations with the **Consultant** or other parties in which directions are given must be documented. Each record should contain the

names of the parties involved and a summary of the discussion, and any directions given and/or decisions reached must be clearly presented. The **Consultant** is required to prepare and distribute minutes of all meetings attended.

9. Additional Services

9.1 Policy

During the course of a project design, items may be discovered that require the **Consultant** to provide additional services that are outside the scope of the Agreement.

9.2 Procedure

If additional services are required to be provided by the **Consultant** that are beyond the scope of work or the total contract amount approved by the Board of Commissioners, the **Pre-Construction Engineer** shall determine the extent to which they are necessary.

The **Pre-Construction Engineer** will prepare a recommendation to the **Chief Engineer** when these services are requested, which will contain the reasons these services are required and a preliminary estimate of the cost as submitted by the **Consultant**.

To request additional services, the **Pre-Construction Engineer** shall:

- Obtain from the **Consultant** a detailed scope of work, cost, and schedule for completing the work, including all associated effects on already completed services.
- Determine if the additional services will require modification of the design schedule and modify the schedule as appropriate. Obtain **Consultant's** concurrence of the schedule revision in writing.
- Determine if approved funds for Phase VI – Miscellaneous Services in the approved Agreement are sufficient to authorize the additional services.
- If approved funds are available, prepare a letter for signature by the **Pre-Construction Engineer** to authorize the additional services and direct the **Consultant** to proceed with the work.
- If funds are not available in Phase VI, prepare a Supplemental Agreement for submittal to the Board of Commissioners for approval.

Additional services are not to be performed by the **Consultant** unless authorized and a Notice to Proceed in writing by the **Pre-Construction Engineer** is received.

10. Bidding for Construction

10.1 Policy

The **Pre-Construction Division** is responsible for preparing the plans, specifications, and bid documents for advancing the project in order to receive bids for construction. The **Construction Engineer** will provide assistance as required to complete the documents.

10.2 Procedure

After the **Development Services Manager** has completed, or has identified an anticipated completion date for, the acquisition of all required right-of-way and easements for the project, the **Chief Engineer** and **Pre-Construction Engineer** will schedule a date for bids to be received for construction.

10.2.1 Bid Documents

The **Project Manager** shall assemble all construction plans and details for the project, which shall be reviewed for completion by the **Pre-Construction Engineer**. The plans must be sealed, signed, and dated by a Professional Engineer with the contracted **Consultant**.

The bid documents shall include the following, as a minimum:

- Advertisement for Bids
- Standard Construction Contract
- Schedule of Items (all items of construction from Detailed Estimate in plans) including **Water System** items, if appropriate
- Special Provisions
- **Water System** Special Provisions, if applicable
- Construction Plans

10.2.2 Notification to Purchasing

The **Pre-Construction Engineer** shall submit to the **Purchasing Manager** a requisition for submitting the advertisement to the **County** Legal Instrument for publication. In accordance with State Law, Article 36-10-3, the advertisement must be published in the newspaper wherein the sheriff's sales are advertised, once a week for four weeks prior to the date of the bid opening.

10.2.3 Pre-Bid Meeting

The advertisement and Notice to Contractors shall establish a date and place for a pre-bid meeting to be conducted by the DOT. The purpose of the meeting is to afford all prospective bidders the opportunity to ask questions of clarification on the bid documents. It is anticipated that sufficient information will be provided to eliminate concerns and/or perceived risks by the contractors, which result in inflated bid prices.

The meeting should be conducted by the **Pre-Construction Engineer**. The meeting should also be attended by the following personnel to provide adequate representation for all aspects of the project:

- **Chief Engineer** (when necessary)
- **Construction Engineer** and Staff
- **Project Manager**
- **Consultant**

The meeting should follow an established agenda with the express purpose of explaining any special conditions or provisions associated with the project, explaining the process for requesting information and providing answers before the opening of bids, and responding to questions posed at the meeting. The **County** shall have someone at the meeting recording the minutes of the meeting, which will be distributed to all plan holders of records.

10.2.4 Opening of Bids

All bids shall be submitted to the Purchasing Department and opened during a regularly scheduled bid opening as established by the Purchasing Department.

After the public opening of bids by the Purchasing Department, the **Pre-Construction Engineer** shall retain all originals of bids and file them in the project file for a period of seven years from the date of opening.

The **Pre-Construction Engineer**, with the assistance of the **Construction Engineer**, shall review, evaluate, and tabulate all bids received for each item of construction identified in the Schedule of Items. The CCPMIS will verify the multiplication of unit prices and summations for each bid received. The evaluation shall ensure that the bids received are reasonable for the items included, and that **Contractor's** bid is balanced and not exaggerating prices for items that are paid early in the contract.

10.2.5 Recommendation

After evaluation and tabulation of the bids, the **Pre-Construction Engineer** shall prepare a recommendation for award to the lowest responsible bidder to be submitted to the Board of Commissioners for approval. The recommendation shall identify whether the total bid cost is within the project budget and that funds are available. If the total cost is not within the existing project budget for construction, the **Pre-Construction Engineer** and **Chief Engineer** shall identify a source of additional funds that can be transferred, or determine whether it is in the best interests of the **County** to reject the bids and rebid.

10.2.6 Approval

After approved by the Board of Commissioners, the **Pre-Construction Engineer** shall transmit the contract documents to the **Construction Engineer** to have executed by the Contractor and the Chairman of the Board of Commissioners.