

## **SECTION 3**

### **CAPITAL IMPROVEMENTS AND SUBDIVISION PROCEDURES**

#### **3.1 CAPITAL IMPROVEMENTS PROCEDURES**

##### **3.1.1 PURPOSE**

The purpose of this chapter is to provide an outline for the development of projects from pre-project proposal to awarding the construction contract. This chapter is meant to be a guide to the Design Engineer and not an absolute mandate. It is anticipated that conditions will vary that will require deviation from standard procedures. However, deviation from standard procedures should receive prior supervisory approval.

##### **3.1.2 PRE-PROJECT PROPOSAL**

The pre-project proposal is the Design Engineer's presentation of the project need and proposed solution, design process, schedule, and costs. The Design Engineer should perform a field review of the proposed project in order to develop his initial scope of what is required to design the project. Photographs are very helpful for future reference during design. The Design Engineer should evaluate various alternative solutions to the engineering problem and then make a recommendation as to the most cost effective solution. This alternative analysis should include the evaluation of potential environmental impacts of each alternative as well as the engineering comparison of each alternative.

The following is an outline of the various topics that need to be discussed in the pre-project proposal:

- I. Project history and need.
- II. Alternative analysis.
- III. Project scope and definition (recommended alternative).
- IV. Project Tasks
  - a. Environmental Documentation
  - b. Data Gathering

1. Surveying
2. Geotechnical
3. Research of Records
- c. Design parameters
- d. Right-of-way requirements and costs
- e. Required permits and agreements
- f. Required Project Reviews
- g. Others as required
- V. Special considerations
- VI. Project Scheduling
  - a. Critical path for complex projects
  - b. Work Plans
    - 1) Estimate of hours per task
    - 2) Estimated total hours required for project.
    - 3) Estimated completion date for the project.
- VII. Estimated total project costs vs. project budget (if any).

The pre-project proposal is to be submitted to the Senior Engineer for review and approval. Pre-project proposals should be circulated for review, comment, and coordination with operating divisions followed by approval by the Supervising Engineer and/or Engineering Division Manager. Written comments are always preferred to formalize reviews by the operating divisions.

It is important that the Design Engineer be flexible to meet unexpected situations during the design of a project. Therefore, the Work Plans or Critical Path scheduling should be updated periodically to communicate changes to supervisory staff and the operating divisions.

### **3.1.3 DESIGN REVIEWS**

Design reviews facilitate input by Engineering Division staff and the various operating divisions concerning the concept and/or details of a project design. It is important that these reviews are timely and comprehensive. The review is where the combined expertise of the Department is employed to produce a design that is technically correct and meets the needs of the operating divisions.

The following are the recommended reviews prior to advertising a project for bids:

| <u>Review</u>       | <u>Normal Time to Perform</u>                                                                                                       |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Schematic Review    | When Engineer completes his initial schematic design. (Preferred for technically complex projects ie. pump stations, etc.)          |
| 50% Design Review   | When design has been delineated to include draft specifications.                                                                    |
| Final Design Review | When Plans, Specifications, and Estimate are complete. All previous comments have been satisfied and project is ready for approval. |

### **3.1.4 PROJECT ADVERTISEMENT**

Project advertisement is the culmination of all the design efforts. The procedures discussed below must be followed to insure proper advertisement and funding.

### **3.1.5 BIDDING ANALYSIS**

From the date the City Council approves the project and call for bids, four (4) weeks or more are given to the potential contractors to prepare their proposals. Upon the receipt of these proposals, the City Clerk's Office publicly announces the results of the bidding and the apparent low bidder. All the proposals are then returned to the Engineering Division for verification of the responsiveness of each bidder. This is accomplished by the Design Engineer reviewing each bid for accuracy and completeness together with the verification of the contractor's license. Upon determination that the low bidder is responsive, the Design Engineer evaluates the bidding results to determine the quality of bids received and whether or not rejection of all bids and re-advertising is

in the best interest of the City. The Design Engineer's recommendations are then reviewed by supervisory staff and submitted through the Division Manager to City Council for approval and awarding of the contract to the low bidder, awarding to another bidder, or rejecting all bids and re-advertising.

#### **3.1.6 PROJECT AWARD**

Based on the recommendations of the Engineering Division the City Council awards the construction contract. From that point the project management is transferred from the Design Section of the Engineering Division to the Construction Section of the Engineering Division. The Design Engineer will provide engineering services to the Construction Manager upon request as outlined in Section 16 of this manual.

### **3.2 SUBDIVISIONS**

#### **3.2.1 GENERAL**

Subdivisions within the city of Sacramento shall be designed in accordance with the design criteria in this design and procedure manual. The subdivision process is outlined on Plate 3-1 in the Appendix to this section.

#### **3.2.2 PLAN SUBMITTAL**

To begin the plan review process, plans should be submitted along with all necessary studies, permits, approvals and fees. A complete package submittal check list is shown on Plate 3-2 in the Appendix to this section.

#### **3.2.3 ENGINEERING FEES**

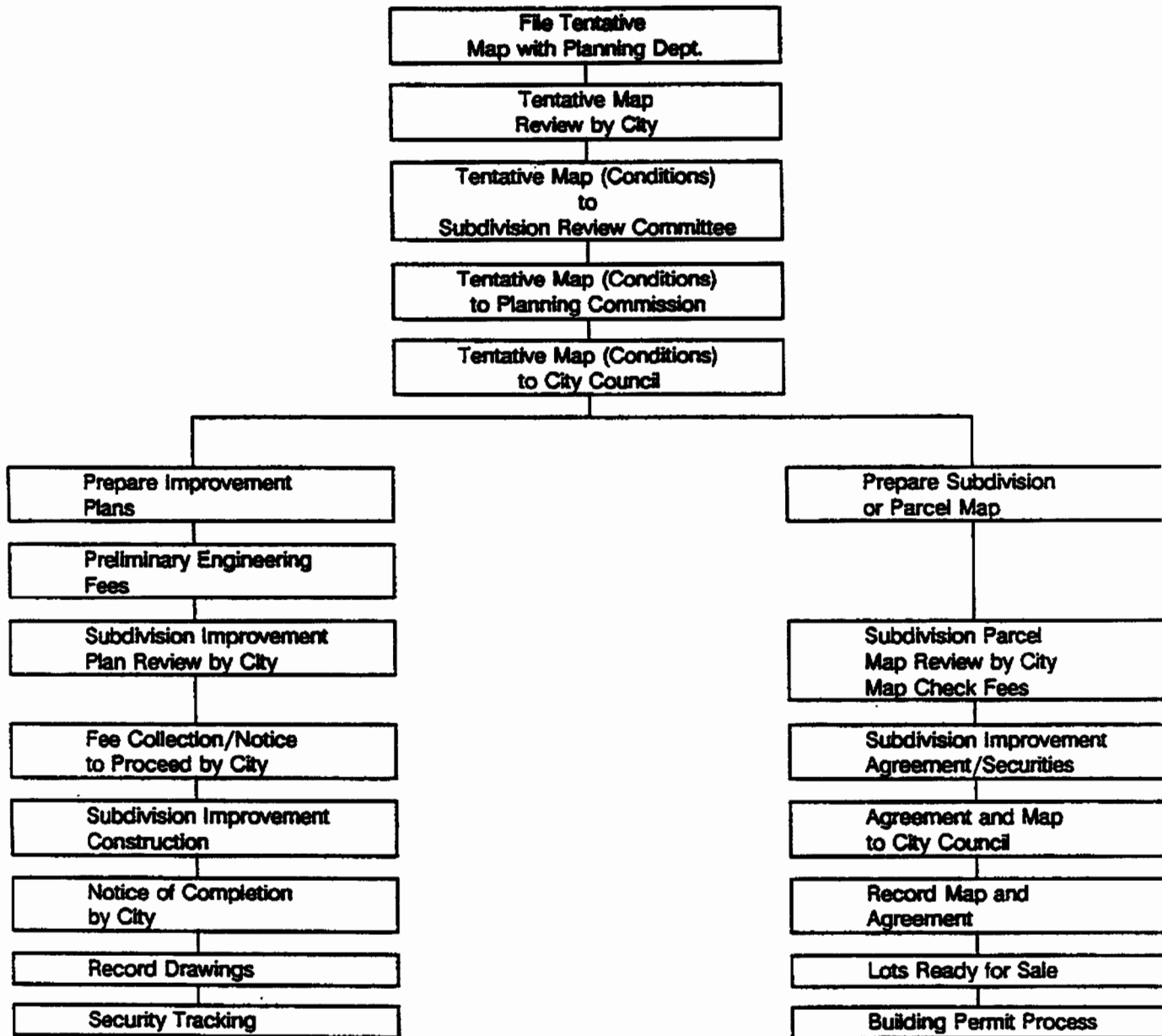
Engineering fees shall be charged in accordance with the City of Sacramento's current Fee and Charge Report for the Public Works Department. As outlined in the current fee and charge report, an initial fee equal to one-half the estimated plan check and inspection fee is required prior to start of plan checking. Remaining fees are due prior to start of construction.

### **APPENDIX TO SECTION 3**

| <b><u>PLATE NO.</u></b> | <b><u>DESCRIPTION</u></b>         | <b><u>PAGE NO.</u></b> |
|-------------------------|-----------------------------------|------------------------|
| PLATE 3-1               | SUBDIVISION PROCESS               | 3-6                    |
| PLATE 3-2               | SUBDIVISION PLAN REVIEW CHECKLIST | 3-7                    |

## PLATE 1

### SUBDIVISION PROCESS



## PLATE 2

### Subdivision Improvement Plan - Complete Package Submittal Checklist

- \_\_\_ 1. Preliminary engineering fees paid.
- \_\_\_ 2. Copy of resolution approving tentative map.
- \_\_\_ 3. Name, address, and phone number of developer and engineer.
- \_\_\_ 4. Six sets of plans with the following:
  - \_\_\_ a. Title sheet - title sheet to include:
    - \_\_\_ \*site plan
    - \_\_\_ \*legend consistent with drawings
    - \_\_\_ \*signature block
    - \_\_\_ \*sheet index in standard order
    - \_\_\_ \*bench mark designations
    - \_\_\_ \*standard general notes
  - \_\_\_ b. Grading plan on non-City sheet and City size mylar.
  - \_\_\_ c. Water plan on standard City water sheet drawn using standard water symbols.
- \_\_\_ 5. Sewer Study: See Design and Procedure Manual, "Preparation of Plans" section 9.9. In addition, all supporting documents; i.e., lift station plans and capacity, and existing improvements within entire service area.
- \_\_\_ 6. Drainage Study with the following:
  - \_\_\_ a. Overall Shed Map (500 scale City SD maps):
    - \_\_\_ 1. Plan of all existing drainage improvements within shed.
    - \_\_\_ 2. Free water surface elevation and flow line at outfall.
    - \_\_\_ 3. Pump capacity and plans, if applicable.
    - \_\_\_ 4. HGL at outfall with assumptions and calculations used in its determination and supporting documents.
  - \_\_\_ b. Project Shed Map (drawn on grading plan):
    - \_\_\_ 1. Subsheds.
    - \_\_\_ 2. Table of calculations shown on map.
    - \_\_\_ 3. One foot off-site contours within 400' of project boundary.
    - \_\_\_ 4. Existing off-site swale and ditch flow line elevations within 400' of project boundary.
    - \_\_\_ 5. HGL at project boundary, calcs and assumptions.
- \_\_\_ 7. Soils Report: (2 copies)
  - \_\_\_ a. "R Values".
  - \_\_\_ b. Fill specifications.
  - \_\_\_ c. Wall design soil parameters, if applicable.
  - \_\_\_ d. Seepage study, if applicable.
  - \_\_\_ e. Groundwater elevation data, if applicable.
- \_\_\_ 8. Traffic Index (TI) values.
- \_\_\_ 9. Subdivision map/plot map (2 copies).
- \_\_\_ 10. Approved street names.
- \_\_\_ 11. Quantity and cost estimate in sheet by sheet format.
- \_\_\_ 12. Utility certification letter.
- \_\_\_ 13. Required studies and permits.
- \_\_\_ 14. Right-of-entry's to construct proposed off-site improvements and grading.
- \_\_\_ 15. Special structure design calculations; i.e., sound and retaining walls, trench widths, etc.
- \_\_\_ 16. Pot hole data where existing pavement within project scope is proposed to be saved.
- \_\_\_ 17. Tree removal plan approved and signed on grading sheet by Tree Services.
- \_\_\_ 18. Park improvements on separate sheet, if applicable.