



Project Management Procedures

I. Background and Overview

- A. The City's Program Standards and Procedures (PSP) are intended to be used in conjunction with the data contained in related standards and procedures. They are not intended to be used as stand alone documents. It is the responsibility of the Designer to become familiar with all the PSP documents and comply with the criteria set forth as a whole.
- B. This section provides the basis for managing and delivering a project to meet the needs and expectations of the stakeholders related to budget, schedule, quality and grade.
- C. The requirements set forth herein shall be adhered to by the City Project Manager. Various tasks may be partially, or entirely, assigned to the Consultant Project Manager at the discretion of the City Project Manager. This Project Management Procedures is divided into the following sections:
 - II. Purpose of the Procedures
 - III. Quality Approach
 - IV. Steering Committee and Project Manager Responsibility
 - V. Quality Assurance Process
 - VI. Project Development Approach
 - VII. Project Management Plan
 - VIII. Monitoring and Controlling the Project Management Plan
 - IX. Quality Control Process

II. Purpose of the Procedures

- A. The mission statement of the Engineering Division is contained in the City Budget and reads as follows:

Mission Statement

To efficiently and effectively provide all engineering services, including administration, design, drafting, surveying, construction management, and clerical, through a combination of staff and consultant efforts in support of Capital Improvement, Construction Permit, Plat Checking, and Records Programs.

- B. In order to accomplish this mission, we need to document current procedures, and change procedures as appropriate.

- C. With our mission statement in mind, this standard was developed in order to provide for the delivery of capital projects with an appropriate quality level, in an efficient and effective manner. This includes both the documents created to develop the desired product, and the product itself. The objective of this standard is to assist the Design Team in identifying and meeting the needs and expectations of the project stakeholders, while managing the scope, schedule, budget, and grade of the project. This will improve productivity by reducing unscheduled rework and improve stakeholder satisfaction by meeting time, budget, and performance commitments. The elements of this program are intended to promote and provide for the following:
1. Perform tasks right the first time.
 2. Assist in the reduction or elimination of errors and defects during design.
 3. Target prevention rather than correction.
 4. Identify and meet milestones.
 5. Enhance the inspection of the process and project.
 6. Promote participation through the Project Team.
- D. Care must be taken to differentiate between quality and grade. For the purpose of this standard, quality shall generally refer to the conformance with various applicable requirements, while grade shall refer to the number or type of features of the product. While low grade may or may not be desired, low quality is never desired. It is the responsibility of the City Project Manager to determine and provide for the appropriate quality and grade in the project documents and the final product.
- E. The information contained within this document is intended to serve as a guide for the City Project Manager to incorporate the desired quality level into each project. When quality is foremost in the design process, a quality product results. It also requires mutual understanding and realization that few, if any, construction projects are without issues. The impact of these issues can be minimized through the application of the content of this standard.

III. Quality Approach

- A. The basis of this program may be summarized as follows:

“Quality is most efficiently and economically planned in, as compared to inspected in.”

Quality planning includes identification of the applicable quality standards and developing a Project Management Plan to satisfy them.



- B. Quality planning is the process of defining project objectives aligned with stakeholder requirements. Quality planning is important because it allows for the following:
1. Provides direction to the Design Team regarding the stakeholder expectations.
 2. Provides a structured framework for decisions.
 3. Reveals opportunities to improve efficiency, reduce costs, save time, and meet stakeholder expectations.
 4. Facilitates quality assurance and quality control by anticipating issues and developing contingency plans.
- C. The program has two principal components. They are “quality assurance” and “quality control.” Quality assurance consists of the planned and systematic activities implemented within the quality program to provide confidence the final product will meet the applicable requirements and standards. Quality control includes monitoring specific project results to determine if they conform to the applicable quality standards, and identifying ways to reduce or eliminate causes of unsatisfactory results. These results include both product results such as Design Team deliverables and the targeted improvements, and management results such as cost and schedule.
- D. As part of the implementation of this standard, it is up to the Project Team and stakeholders to accomplish the following:
1. Implement effective planning and management control systems.
 2. Produce sound engineering designs.
 3. Efficiently and appropriately administer related contracts.
 4. Communicate effectively with stakeholders and team members.
 5. Effectively manage the time and resources spent on a project design.
 6. Utilize documentation for quality assurance/control activities.
- E. The relative success of implementing the quality plan must be measured. This will be accomplished by comparing the project’s cost, schedule, and product functionality with the initial values. Another method to measure the success of the quality plan is to examine the type, size, and impact of unanticipated problems.



IV. Steering Committee and Project Manager Responsibility

- A. The Steering Committee and the City Project Manager have certain responsibilities falling into two categories as it applies to the Engineering Division:
1. The functions provided by the Steering Committee in support of the City Project Manager's performance of the required tasks (direction, resources, and organizational planning); and,
 2. The responsibilities of a City Project Manager as they relate to the delivery of the project (everything required to successfully deliver the project and not provided by upper management).
- B. Under the first category, the Steering Committee has the responsibility to provide staff with the opportunity and the environment to successfully deliver the project. They do this through the following:
1. Directing:
 - a. Reasonable time frames and schedules.
 - b. Responsive decision making.
 - c. Motivation of personnel.
 - d. Issuance of clear directives.
 - e. Budgeting adequate funds to accommodate the project objectives.
 2. Organizational Planning:
 - a. Adequate workloads.
 - b. Organization of resources.
 3. Resources:
 - a. Appropriate personnel and time frames.
 - b. Provide for timely availability of funds.
- C. The City Project Manager's management responsibilities are to efficiently and effectively manage the design and construction of a project. This function is to be performed within budget, on time, and meeting the objectives established for the project. The following are typical responsibilities of a City Project Manager:



1. Adhere to established budgets, schedules and time frames, and management directives. Make timely interpretations, evaluations, and decisions.
 2. Develop projects in compliance with codes, standards and specifications, and laws governing the project or work.
 3. Facilitate communications with, and between, superiors and support staff.
 4. Accept authority and responsibility.
 5. Act with care and competence to represent the interests of the Public Works Department and the utility in the design and construction of the project.
- D. City Project Manager responsibilities related to these procedures are as follows:
1. Provide for essential areas of design, review, and documentation to be completed in an efficient and timely manner.
 2. Utilization of a standard checking/verification procedure for the project tasks, review, and design.
 3. Appropriately incorporate Design Team members and project stakeholders in the Project Development Process.
- E. It is the responsibility of the Steering Committee to verify the City Project Manager is developing their projects in compliance with these procedures.

V. Quality Assurance Process

- A. Quality assurance is the planned and systematic activities implemented as part of the quality process to provide for an acceptable finished product. It can be described as the process of evaluating overall project performance on a regular basis to verify compliance with applicable quality requirements. Quality assurance activities are to be performed throughout the delivery of a project. The goal of quality assurance is to reduce or eliminate errors and omissions before they occur.
- B. The quality assurance elements presented in this standard include the project development approach, the Project Management Plan, the monitoring and controlling of the Project Management Plan, Value Engineering (VE), the peer review of the documents, and construction services related to activities like quality assurance submittal review.



VI. Project Development Approach

- A. The basis for the approach to developing capital projects is to gain complete and accurate stakeholder input early in the project development process. This is reflected in the Project Development Process documents and begins with the development of the project charter.
- B. Specifically, the project charter is a document based on the best available information about the significant aspects of the project. These significant aspects include the following:
 - 1. Project background.
 - 2. Project objective.
 - 3. Scope of improvements.
 - 4. Scope of services.
 - 5. Project budget.
 - 6. Time constraints.
 - 7. Deliverables.
 - 8. Risk narrative.
 - 9. Stakeholders.
 - 10. Stakeholder's criteria for satisfaction.
 - 11. Available information.
 - 12. Project Team members.
 - 13. Organizational goals and deliverables.
- C. The document also includes an acceptance statement and a signature requirement for the primary stakeholders, the City Project Manager, and the project sponsor. A template for the project charter is attached to this document.
- D. The charter is developed as part of a process initiated by the City Project Manager. Initial collection and review of relevant information is completed and a draft charter is developed by the City Project Manager. Following review of the draft charter by the project sponsor, the document is then distributed to the stakeholders for review. A meeting to discuss the content of the charter is held. The meeting is lead by the City Project Manager and includes the in-house project stakeholders.



- E. Following the meeting, the City Project Manager coordinates the finalization of the project charter. Following review by the project sponsor, the charter is routed for signature to primary stakeholders, Design Team members, the City Project Manager, and project sponsor. The project charter serves as the basis for the procurement of out-sourced services and the development of the Project Management Plan.

VII. Project Management Plan

- A. The Project Management Plan is developed based on the project charter, and the project development process. It will serve as the basis for the development of the final product, and the related documents. The Project Management Plan includes the following components:

1. Project Scope:

a. Scope of Improvements:

This section includes a detailed description of the desired improvements, including limits of the improvements and special performance and feature requirements. Also included is the appropriate background information and documentation regarding the development of the scope of improvements, especially how it may differ from the budgeted project. A copy of the Project Charter should be included in this section.

b. Scope of Services:

This section includes a statement of the required services to successfully deliver the desired product, presented on a “deliverables basis.” Include those deliverables listed in, or required to comply with the project development process, and those to be developed “by others,” and required for the project. In addition, indicate permits required for the project, the party responsible for acquiring them, and how the fees will be handled. If any special agency review or intergovernmental agreements are required, those are to be addressed in this section.

c. Improvement and Services Scope Modification Requirements:

- 1) A change in the Scope of Services or the Scope of Improvements shall require acknowledgment by the primary stakeholders, the City Project Manager, the project sponsor, and the fund manager. Any one involved in a project must contact the City Project Manager to initiate a change. The City Project Manager is responsible to respond in a timely manner with the documents to provide for the changes or an explanation as to why the modification is not to be implemented. Any modification required to the other



components of the Project Management Plan shall be included with the scope modification.

- 2) A change in the Scope of Improvements or Scope of Services required following approval of the Project Management Plan shall require processing through the signatories of the Project Management Plan prior to initiating the change.

2. Project Schedule:

- a. Prepare a Project Development Schedule and a list of Expenditure Projections. The Project Development Schedule should include consideration of overall program impacts with other on-going contracts to avoid cost and schedule impacts.
- b. Develop a Work Breakdown Structure (WBS) on a “deliverables basis,” based on the project development process and other known deliverables, utilizing the following approaches:
 - 1) List deliverables required or desired for the project.
 - 2) Develop a list of the tasks necessary to develop each deliverable. Tasks are to be included if they meet one or more of the following criteria:
 - a) Significant element to successful completion.
 - b) Task to be monitored and controlled (includes on-going).
 - c) Significant resource allocation required.
 - d) Task with significant risks (high risk elements, example: permits, land acquisitions).
 - 3) Develop Critical Path Schedule to accommodate available resources or critical deadlines, or both. Consult with the members of the Project Team to provide for their input and confirmation:
 - a) Assign dependencies.
 - b) Assign durations.
 - c) Assign resources.
 - d) Assign out-source expenditures (and internal costs via resources).



- 4) Develop an Expenditure Projection for use in monitoring the progress of the project development:

Dollar loaded CPM:

- a) Dollar load tasks for in-house resources.
- b) Dollar load deliverables for out-sourced resources.

- c. The WBS shall include, at a minimum, the following:

- 1) List of manageable tasks necessary to develop the required deliverables of the appropriate quality level.
- 2) The dependent relationships each task has with the other tasks listed.
- 3) The assignment of resources required to complete the tasks in the desired time frame and at the desired quality level.
- 4) A “reasonable and appropriate” estimate of the staff resource hours to successfully accomplish each task, and the time required in order to provide the necessary staff resources to the task.
- 5) An anticipated expenditure projection for the entire project.
- 6) The schedule shall be developed in OpenPlan, or a suitable program used by the consultant if it converts to OpenPlan. The schedule shall be developed utilizing input from all Project Team members. Following review and approval of the Project Management Plan by the project sponsor, a baseline schedule shall be established.

- d. Project schedule modification requirements:

- 1) A change in the schedule of the design development or the proposed construction contract time shall require acknowledgment by the primary stakeholder, the City Project Manager, the project sponsor, and the fund manager. This may take the form of a memo or an e-mail with the issue presented and the impacts clearly identified.
- 2) A change in schedule associated with a scope modification shall require approval with the change in scope. A change in schedule not associated with a scope modification shall require



within one week of the City Project Manager's determination of the required schedule change.

3. Project budget:

Approved funding level and sources:

This section includes a statement regarding the approved funding, including the value of the fund(s) to be utilized and any special requirement of the funding source such as wage rates or utilization requirements.

4. Project budget management.

This section shall address the timing of the development of total project expenditures, and their comparison with the project budget. A recommendation regarding any modification to the proposed funding or scope of improvements will be provided with each comparison.

5. Project budget modification requirements.

- a. At such time as it has been determined appropriate to modify the budget for a project, the City Project Manager shall confer with the fund manager and lead the development of the necessary transfer documents. This shall be completed and in process of being approved within five business days following acceptance of the budget increase recommendation by the fund manager.
- b. If a project scope modification is required, the City Project Manager shall lead a workshop with the Design Team and the stakeholder's to appropriately consider the alternatives and develop a consensus regarding the required modification.

6. Project organizational and communication plan:

Organizational plan:

This section shall indicate the individuals involved in the project along with their roles (what they are to do) and responsibilities (what they have the authority to decide). This can be done in a chart form or utilizing text with associated matrices.

7. Communication plan:

- a. This section shall provide a list of the anticipated deliverables throughout all phases of the project and who shall receive them. The use of any special communication tools such as e-mail groups or web pages will be discussed. Also indicate the file number(s) to use in accounting and filing. In addition, indicate who is to be contacted for



information about the project, who is to handle inquiries from the public, and how the media is to be included in the project. The plan is to be evaluated regularly and modified as the project progresses.

- b. The communication plan will also provide for a project closeout report. The plan will indicate the general content, information collection approach, and how the report will be prepared, reviewed, and delivered.

8. Project Quality Plan:

This section shall include those standards applicable to the project including design standards, quality standards, and any special requirements related to project quality. Briefly discuss how the overall QA/QC program will be implemented for the specific project.

9. Risk Management Plan:

- a. Risk identification:

Develop a list of the risks the project may be subject to.

- b. Risk evaluation:

Review all risks identified and determine the likelihood for occurrence and the impact on the project. Label all risks as “*Acceptable*” or “*Address*.”

- c. Risk response development:

Develop a response plan for each risk labeled as “*Address*.” This response plan will be put into action when the identified issue comes up.

- d. Risk review:

Revisit steps A-C regularly throughout the project. Update the list as new knowledge is gained.

- 10. The Risk Management Plan will often involve the operation of an existing or proposed facility. Any change in this aspect of the Project Management Plan shall be reviewed with the primary stakeholders and the project sponsor.



VIII. Monitoring and Controlling the Project Management Plan

- A. Once the Project Management Plan has been developed and accepted by the project sponsor, the City Project Manager has completed the planning of the work. It is very important to realize, just because the City Project Manager has worked with the team members and stakeholders to develop a work plan and everyone is supportive of it, the work does not stop there. All the team members and stakeholders must be regularly reminded of their contribution to the plan. It is critical for the City Project Manager to regularly and frequently monitor this plan. As the team is developing the project, frequent and small adjustments must be made to maintain the Project Management Plan and manage the expectation of the stakeholders. As changes come up, the Project Management Plan must be adjusted to accommodate the new conditions and previous goal, as described above.
- B. The City Project Manager has several tools to accomplish the monitoring and controlling effort. They include the following:
1. Hold regular meetings with the Project Team. The frequency of these meetings may vary based on the type and size of a project and the phase of a project. Frequent meetings are typically very beneficial during the initial stages and near the end of a project or phases of a project. The frequency may vary from daily to weekly or monthly. It is important to remember a brief meeting may save substantial time in the overall schedule. Project design status reports may be used to reduce the number of face-to-face meetings.
 2. The use of the project expenditure projections can serve as an excellent tool in both design and construction schedule monitoring and controlling. The actual expenditures, coupled with the task progress, is an excellent way to monitor the progress of a project.
 3. Regular and frequent job site visits, regular progress meetings, review of RFI's and progress schedules, and review of the construction observation staff's daily reports will often help to head off impending issues and some rework and time.
 4. If it has been determined the schedule has slipped, it is essential to the timely delivery of the project to establish a plan to get back on schedule. Extending the schedule for convenience is not acceptable. The schedule established for a project is a commitment the team has made and must follow through on to maintain credibility with the stakeholders. Only a stakeholder's change in scope or some issue beyond the control of the City Project Manager are acceptable reasons to extend the completion of a project.
 5. While it is understood the City Project Manager cannot control every event in a project, it should be noted it is the City Project Manager's role to have a thorough understanding of the project before the schedule is established. It is



also appropriate to include some additional “contingency” time for those items not anticipated. This contingency time is to be owned and controlled by the City Project Manager.

C. Peer Review of the Concept Plan and Schematic Design:

1. The peer review activities are an essential component of the QA/QC program. They provide an opportunity for the project stakeholders, the City’s Project Manager, and the Design Team to discuss various aspects of the project. These include the project charter, the Project Management Plan, and the various phases of the Bid Documents. The peer review of the charter, the Project Management Plan, the process/conceptual design, and the Schematic Design are considered to be quality assurance activities as they are key to reducing or eliminating rework of the documents. The peer review of the preliminary design and the construction documents, Levels 1 and 2, are included in the quality control section as these constitute reviews of completed work products with comments potentially leading to rework of the documents.
2. The Process/Conceptual Design, and the Schematic Design are described in the project development process. They generally include the data collection and the alternative analyses for various aspects of the project with a single, justified recommendation for further development in the preliminary design.
3. In order to facilitate a thorough discussion of the issues involved in projects, the City Project Manager shall adhere to the review approach described in the project development process.
4. The review comments resulting from all peer reviews will be presented in a Record of Comment (ROC). This document will be developed and processed as indicated in the project development process.

D. Value Engineering (VE) Review of the Schematic Design:

1. The Project Manager will be responsible to procure and manage the VE services appropriate for each project. The VE team is to be independent of the Design Team. The VE effort will be initiated at the conclusion of the Schematic Design Phase. The Design Team will provide for the VE effort and cooperate fully through the attendance of meetings and the supply of related documents and supporting information, as outlined in their Professional Services Agreement (PSA).
2. In addition, the City Project Manager will be responsible to coordinate the review and the final decisions of the VE recommendations. This will likely take several meetings with both the Design Team and the stakeholders. The final decisions will be documented by the City Project Manager and the appropriate revisions to the Project Management Plan will be addressed as noted in this document.



E. Roles and Responsibilities:

It is also important for all participants in a project to know their roles and responsibilities with respect to the quality assurance elements. The role of an individual is what they are to do. Their responsibility is what they have the authority to decide. Typically the City Project Manager is responsible to organize, plan, and schedule the various activities to ensure quality assurance and control. City Project Manager is responsible to develop a tool to clearly define each team member's role and/or responsibility in the quality assurance elements. This can be accomplished in a text presentation or in a matrix format with Project Team members listed along the left side and the quality assurance elements listed along the top. Each team member's role and/or responsibility can then be briefly explained. It is critical to an efficient and effective team for everyone to understand their roles and responsibilities in the quality assurance areas.

IX. Quality Control Process

- A. Quality control includes the monitoring of specific project results to determine if they comply with relevant quality standards and identifying ways to eliminate causes of unsatisfactory results. These results include both product results such as deliverables and management results such as cost and schedule performance. The goal of quality control is to locate completed work not in compliance with the applicable quality standard and rework the product to bring it into compliance.
- B. The quality control elements presented as part of these guidelines include peer review of the preliminary design and the Bid Documents, Levels 1 and 2, product inspection during construction, and a project close out report.
- C. Project document reviews:
1. At the stages of the project document development identified in the project development process, the City Project Manager will be responsible to conduct a lead peer review of the documents. The stages included in the quality control program include the preliminary design and the Bid Documents, Levels 1 and 2.
 2. Comments provided in these stages typically result in rework of the content of the various documents. This can lead to reduced quality if the rework tasks are not carried out in a thorough and complete fashion. It may lead to additional construction costs resulting from rework of the product, or, added work not included in the Bid Documents.
 3. In order to facilitate a thorough discussion of the issues involved in projects, the City Project Manager shall adhere to the review approach described in the Project Development Process.



4. The review comments resulting from all peer reviews will be presented in a ROC. This document will be developed and processed as indicated in the project development process.
- D. Product inspection:
1. During the construction of the improvements included in the project, regular observation of the work is to be performed to verify compliance with the requirements of the contract documents. The frequency and intensity of this observation effort shall be determined by the Project Manager based on the complexity and importance of the particular phase of the project.
 2. This inspection can take the form of personal observation, material testing, and/or the testing of equipment following installation. Typically the negative findings and failed tests result in rework to accomplish contract compliance.
- E. Close out report:
1. This development of the close out report is intended to provide for the review of various aspects of a project in order to identify those needing improvement and those items to be retained in the next project. Typically, the report is to be developed by the City Project Manager, reviewed by the Assistant City Engineer, and presented to the stakeholders and Design Team.
 2. The content of the report is recommended to include the following:
 - a) Project description including the goal of the project, the scope of the improvements, and any scope modifications.
 - b) Budget summary including a presentation of the change orders to all contracts.
 - c) Design Team summary indicating if the project was developed with in-house staff, out-sourced, or both.
 - d) Communication summary:
 - e) Risk summary including the main items anticipated to impact the project and how the contingency plan was developed and implemented. In addition, how the Risk Management Plan was modified during the project.
 - f) Schedule summary including the original schedule as a baseline and a discussion regarding the actual schedule of the project.



- E. All of these sections are to be presented in a format so as to clearly indicate those aspects to be maintained in future projects and those to be modified and improved with regard to the modifications. Various options are to be presented with a recommended approach for future projects.
- F. This document is to be developed by soliciting input from all participants of a project. This includes stakeholders, Design Team members, contractors, and the construction services staff. A draft document is to be developed and distributed for review. A meeting is then to be lead by the City Project Manager to discuss the content of the report. The goal is to reach a consensus on items and to let the stakeholder provide input on how a similar project needs to be modified in the future to meet their needs.
- G. The preparation and issuance of this document is to be planned and included in the project schedule.

—End of Section—

