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Appendix I – Consultant Quality Compliance Form
Appendix J – Consultant Evaluation Form
SUMMARY OF CHANGES FOR THE PROJECT DEVELOPMENT MANUAL: VOLUME II PROJECT MANAGEMENT

Below is a summary of revisions made for Volume II: Project Management of the Project Development Manual.

Revisions:

Section 1  Text revisions were made to represent current procedures.
Section 2  Text revisions were made to represent current procedures.
Section 3  Text revisions were made to represent current procedures.
Section 4  Text revisions were made to represent current procedures.
Section 5  Text revisions were made to represent current procedures.
Section 6  Text revisions were made to represent current procedures.
Section 7  Text revisions were made to represent current procedures.
Section 8  A new section was added to represent current procedures.

List of Figures

Figure 1  Modified to clarify requirements.
Figure 2  Modified to clarify requirements.
Figure 3  Modified to clarify requirements.
Figure 4  Removed to represent current requirements.

List of Tables

Table 1  Modified to update current terminology.

Appendices

Appendix A  Renamed to be Appendix C and modified form. Added a new form to represent current requirements.
Appendix B  Renamed to be Appendix D and modified form. Added a new form to represent current requirements.
Appendix C  Renamed to be Appendix E and modified form.
Appendix D  Renamed to be Appendix F and modified form.
Appendix G  Added new form to represent current requirements.
Appendix H  Added new form to represent current requirements.
Appendix I  Added new form to represent current requirements.
Appendix J  Added new form to represent current requirements.
<table>
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</tr>
<tr>
<td>ADEQ</td>
<td>Arizona Department of Environmental Quality</td>
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<tr>
<td>ADT</td>
<td>Average Daily Traffic</td>
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<td>APE</td>
<td>Area of Potential Effect</td>
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<tr>
<td>ASCE</td>
<td>American Society of Civil Engineers</td>
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<tr>
<td>AZPDES</td>
<td>Arizona Pollutant Discharge Elimination System</td>
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<td>CE</td>
<td>Categorical Exclusion</td>
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<td>Intelligent Transportation System</td>
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<td>JOC</td>
<td>Job Order Contract</td>
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<td>K</td>
<td>Design Hour Traffic Factor</td>
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<td>LOS</td>
<td>Level of Service</td>
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<td>MCDOT</td>
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<td>Mile Post</td>
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<td>Manual on Uniform Traffic Control Devices</td>
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<td>PDM</td>
<td>Project Development Manual</td>
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<td>PISA</td>
<td>Preliminary Initial Site Assessment</td>
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<td>PLZ</td>
<td>Potential Wildlife Linkage Zone</td>
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<td>PM</td>
<td>Project Manager</td>
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<td>Project Review Committee</td>
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<td>PRS</td>
<td>Project Rating System</td>
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<tr>
<td>PS&amp;E</td>
<td>Plans, Specifications and Estimate</td>
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<td>Project Work Plan</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<td>QA</td>
<td>Quality Assurance</td>
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<td>Storm Water Pollution Prevention Plan</td>
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<td>T</td>
<td>Truck Factor</td>
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<td>TAC</td>
<td>Technical Advisory Committee</td>
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<td>TM</td>
<td>Technical Memoranda/Technical Memorandum</td>
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<tr>
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<td>Transportation System Plan</td>
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<td>USGS</td>
<td>United States Geological Survey</td>
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<tr>
<td>VE</td>
<td>Value Engineering</td>
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<tr>
<td>WBS</td>
<td>Work Breakdown Structure</td>
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<td>WUS</td>
<td>Waters of the United States</td>
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1 Introduction

In accordance with Maricopa County Department of Transportation (MCDOT) Project Development Manual, all projects must follow the published Transportation Improvement Program (TIP) project delivery process. The TIP project delivery process stipulates that all requests for initiation of a new project must be endorsed by a MCDOT Division Manager or a member of top management (e.g., Transportation Director or Board of Supervisor) and submitted in writing to the Project Review Committee (PRC). If approved by the PRC, the project will proceed to the Scoping Process which will be followed by the Final Design Process. The Scoping Process and the subsequent Final Design Process will only begin if the project is approved by the PRC, for each phase.

1.1. Project Management

The purpose of this Project Management manual is to provide guidelines for leading the project through startup, scoping, final design, and into construction. This manual has been assembled to provide the Project Manager (PM) with a standardized process, streamlined tools such as Project Work Plan (PWP), Work Breakdown Structure (WBS), template Scope of Services, template Schedules and Fee Template which will assist in the development of MCDOT TIP projects.

Project Managers are accountable to the public, Board of Supervisors, and management for the success of the project. The Project Manager delivers a quality product that meets or exceeds the standards of MCDOT. In addition the Project Manager must communicate effectively to be successful. Some communication skills of particular importance include written, verbal, interpersonal exchanges, and listening.

1.2. Project Management Goals

Project Management is at the core of a successful project. A PM is empowered to lead the Project Team to the successful and timely finish of a project. MCDOT requires that all projects are finished within budget and on schedule without scope creep. To facilitate this, the PM has been provided with the tools to start a project on a solid foundation, identify the task needs, keep track of the activities and recognize scope or budget issues in time to coordinate with the Project Team to avoid such situations.

The Project Manager goals include:

- Ensure all project funds are used to benefit the residents of Maricopa County in the best possible manner;
- Ensure the project is completed on schedule, within defined scope, and on budget; and
- Protect the interests of the project owner which are the residents of Maricopa County and Maricopa County Department of Transportation.

Project Management encompasses all phases of a project from its startup to its completion. The PWP is a tool the MCDOT PM is to complete with the discipline representatives to identify the scope, schedule, budget, resources, risks and project need.

This process will help the MCDOT PM and Project Team to deliver projects on time, since critical path items are identified within the Project Schedule.
1.3. Changes to the Manual

The original Microsoft Office Word document of this manual is maintained by the Transportation Systems Management Division. Recommendations for corrections, revisions, or additions to this manual should be submitted to the Transportation Systems Management Division. The PRC will review the recommendations for possible inclusion in the next update of the manual.

Additional information and requests for additions and updates to the PDM should be forwarded to:

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Transportation Systems Management Division Manager
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(602) 506-0599
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2 Startup and Programming

The MCDOT Transportation System Plan (TSP) identifies short, mid, and long range roadway improvements and is updated on a five year cycle. This process is completed by performing both a capacity based (impacted by population growth) and an operational needs analysis (maintenance, intersection, safety). Typically, short range improvements needs proceed to Tier 1 project rating, while mid and long range improvements needs advanced to planning level studies resulting in recommendations for future considerations. Once a need is identified potential projects are entered into the Project Rating System (PRS) to determine project priority. Based upon the results of the needs analysis and the PRS results, recommendations are made for inclusion into the TSP. Project inclusion for the Transportation Improvement Program (TIP) is based upon the previously mentioned recommendations as well as any newly identified maintenance, warrant studies, and operational or safety needs. The TIP project delivery process stipulates that all requests for initiation of a new project must be endorsed by a MCDOT Division Manager or a member of top management (e.g., Transportation Director or Board of Supervisor) and submitted in writing to the PRC. Once submitted, each request will be placed on the PRC agenda for the next available meeting. The Project Manager submitting the request will then present the project to the PRC for review. If approved by the PRC, the project will proceed to the scoping process. After the Scoping Phase is complete the project is again analyzed in the PRS. Selected projects will then advance to the Final Design and Construction Phase after receiving a second approval from the PRC.

2.1. Project Startup

The purpose of Project Startup is to recognize the need for a project and to determine when to place this need into the project development process for discussion and approval. The following are objectives of Project Startup:

- Determine if a project is needed to solve a problem or to achieve an objective related to organizational goal;
- Complete a PWP to identify the scope, schedule, budget, risks and Project Team; and
- Gain input and support from the management, leadership and resources (internal and external).

Project Startup defines the process of project inception to its approval by the PRC. The PM is responsible for assembling the PWP and necessary documentation for the presentation of the project to PRC. Once a request for a project is received, the focus should be on developing the project goals and objectives. These goals and objectives will lead to developing a solution which will drive the Scope, Schedule and Budget. Preliminary information about the project should be used to develop the Scope, Schedule and Budget of the project.

At Project Startup, the PM obtains the input from various Technical Discipline Representatives on the project. The PM may obtain input from potential designers outside MCDOT. A Pre-Scoping meeting can facilitate this information gathering. The goal of this input is to formulate the PWP including preliminary Scope, Schedule and Budget which will aid in the completion of the PRC request form. The PRC Request is to be submitted to the PRC for project approval for the initiation of Scoping Phase. The PRC reviews the request and may need additional information which must be provided by the PM.
2.1.1 Project Work Plan

The PWP is a critical element to the success of the project delivery process as it provides the foundation and expectations for each project. For the PWP to successfully provide value it must provide a high level of detail and input from each discipline participating in the project.

The PM is responsible for completing a PWP at the Scoping and Final Design phases of the project delivery process. The PWP will be completed with the participation from the Technical Discipline Representatives prior to preparing the PRC request form. The PM is responsible for filing the PWP on SharePoint and communicating the location to the Project Team. Appendix A contains the Project Work Plan for Scoping Phase and Appendix B contains the Project Work Plan for Final Design Phase. The following are components of the PWP.

2.1.2 Project Need and Justification

Provide a description of the project need to justify the purpose of the project. The project need is the description of the problem or issue that a solution is being requested. This addresses the question of “why” is the project necessary. Describe the project limits within this section.

2.1.3 Goals and Objectives

Provide the goals and objections that would satisfy the project need. This addresses the “what” the project is striving toward to address the problem or issue.

2.1.4 Known Risks

In this section identify if the project limits are within Maricopa County right-of-way. In table format identify and describe any known risks, the level of severity of the risk (low, medium, high), and mitigation measure(s) to address the risk.

2.1.5 Funding

Identify the potential funding source for the project and whether federal-aid or other sources may be used for the project. If federal funding is identified then federal requirements will need to be followed. The Federal-Aid manual will need to be referenced.

2.1.6 Project Team and Design Team

The specific members of the project and design team will be listed in this section. The Branch Managers for each discipline will assign a staff member to the project. If a consultant will be used as the design team then the names will be added after the project is approved by the PRC and the consultant is selected.

2.1.7 Stakeholders

The project stakeholders and possible need for an IGA will be identified in this section. The need for an IGA will be identified during the Scoping phase. In preparing the Final Design phase PWP, the need for an IGA is confirmed and noted.

2.1.8 Quality (QC)/Quality Assurance (QA) Staff

The MCDOT QC/QA staff will be identified in this section. The individuals reviewing and checking the submittals shall be different from the individual producing the deliverable for each discipline.
2.1.9 Problem Escalation and Change Management

The problem escalation process as described in Volume I will be followed. This section of the PWP identifies the individuals associated with the escalation levels.

2.1.10 Scope of Work

The scope of work section describes the project limits and specific tasks required to successfully complete the scoping or final design phase. The scope of work described shall be detailed and include all disciplines associated with the project. The WBS tool may be used to aid in the development of the scope of work. The critical path items will need to be identified as well as a clear expectation of the party responsible for the task. If a Consultant is planned to be used then the scope of work will identify which tasks will be completed by MCDOT staff and which tasks will be completed by Consultant staff. The scope of services for a consultant will be based on the scope of work established in the PWP. The Consultant Scope of work is to be prepared only if a PRC request is approved. Another important part of the scope of work is to identify specific items and tasks that are out of the project’s scope of work.

The purpose of the specific and detailed nature of the scope of work is to establish clear expectations and responsibilities to complete the project. This will also aid in identification of scope creep.

2.1.11 Matrix of Deliverables

The matrix of deliverables is closely linked to the scope of work and specifies what deliverables will be part of the project, when they will be submitted, and to what level of completion. A general description of the levels of completion may include:

- Preliminary (P) has a low level of detail tied to the submittal;
- Draft (D) has a medium level of detail that is higher than the preliminary submittal;
- Final (F) has a high level of detail that is built upon the preliminary and draft submittals; and
- Sealed (S) is a final submittal that is signed and sealed by the appropriate technical registrant as defined by the Arizona Technical Registration Act.

2.1.12 Schedule

The schedule is based on the scope of work and the matrix of deliverables. The schedule will be created using MS Project and will be established from input from each discipline to create a reasonable and realistic timeline to complete each task. The milestones will be identified in this section and the complete MS Project schedule will be included as an appendix to the PWP.

2.1.13 Anticipated Construction Delivery

The anticipated construction delivery method will be identified in this section. The primary delivery methods are Design Bid Build and JOC with other delivery methods being CMAR, Design Build, and In-house.

2.1.14 Budget

The budget for the project will be established from input from each discipline. The budget will identify the costs for in-house labor, consultant fees, utility relocation and/or pothole fees, R/W
costs, construction cost, and construction management costs. Any work performed by MCDOT staff will be accounted for within MCDOT labor category.

2.2. Project Initiation

Project Initiation selects a consultant, as needed, by Request for Proposal (RFP) or current on-call contracts and kicks off the project. Project Initiation is critical because it is essential for those who will ultimately produce the desired project deliverables (Design Team), those who will use those deliverables (Project Team) and those who have a stake in the project (Stakeholders) to reach agreement on the problem and its solution.

If a consultant is utilized then the consultant’s scope, schedule, and budget for the project will be formulated from the scope, schedule and budget established in the PWP.

2.3. Kick-Off Meeting

The Project Initiation process then proceeds with the first major project meeting, known as the Project Kick-Off Meeting. The Kick-Off meeting and the Site Visit familiarize the Project Team and the Design Team with the elements and requirements of the project.

The Kick-Off meeting allows the PM to help communicate expectations, requirements and responsibilities. The Kick-Off meeting provides a forum to:

- Publicly state that the project is beginning;
- Review the goals, objectives and success factors of the project; and
- Establish commitments by all stakeholders.

The Kick-Off meeting is a gathering of the Project Team, Design Team, stakeholders and management. Stakeholders should attend the meeting to show support and to discuss the Project objectives and Scope, Schedule and Budget.

The following flowchart in Figure 1 shows the project startup and initiation process.
Figure 1 – Project Startup and Initiation Flowchart

2.4. Project Programming

Projects are programmed in the MCDOT five year TIP based on their priority. The PRC is responsible for programming and funding a project. A project is programmed for funding only after a request is approved by the PRC.
3 Work Breakdown Structure

One of the most important parts of the project is the definition of project tasks and activities. For this purpose a WBS is created for project task needs. The activity sequence involves dividing the project into smaller, more manageable components or tasks, organizing them into major project phases and then sequencing them in their general order of completion. The goal is to use the WBS to aid in the development of the PWP.

The WBS is used as a tool to facilitate the development of a comprehensive Scope, Schedule and Budget for a project. WBS helps in development of Project Management deliverable (i.e. Scope, Schedule and Budget) and in itself is not a project deliverable.

The WBS reflects all activities such as Project Management, design, and implementation. The PM is responsible for selecting specific tasks associated with a project and verifying them with the Discipline Representative. As levels of the WBS become lower, the scope, complexity and cost of each subtask becomes smaller. The lowest level tasks are independent, manageable units that are planned, budgeted, scheduled and controlled individually.

A WBS template is provided in Appendix C to streamline the process of identifying potential tasks needed for a typical project. The WBS contains all typical tasks required to complete a project including planning, design, production, submittals and reviews.

3.1. WBS Arrangement

The WBS structure assigns an identifying notation to each task that will be carried through into the schedule. This unifying structure is developed to assist the PM and the Project Team in tracking and evaluating not only the project tasks but also to have the ability to compare similar tasks across projects and across proposals.

The tasks in the WBS are developed to cover the common tasks while the PWP details requirements for a particular task. The Schedule defines the duration and relationship of the different tasks.

A large project can consist of smaller projects; hence, the first level of the WBS is the Project number. A project is a collection of project phases, sub phases, and deliverables. The WBS denotes a hierarchy of task relationships.

The Project Breakdown Chart, as seen in Figure 2, shows how the various levels are needed to complete a project successfully. Projects are assisted by breaking down the activities in depth, to tasks which in turn help in scheduling and cost breakdown.
3.2. WBS Terminology

The WBS tasks consist of up to 4 levels. A 4th level task will have a notation TT000-X.000.0. The first level denotes the Project Number (TT000). It allows the ability to merge or unmerge multiple projects into a single project or split a project in multiple projects. The second level defines the project Phase (X). This is divided in Scoping (30), 60%, 95%, 100%, and Sealed. The third level describes the Sub-Phase (000). This consists of major discipline or particular type phases such as Project Management, Environmental, Submittal, etc. that are represented by numbers (100, 600, 1200, etc.). The next level describes Deliverables and is by single digits (1, 2, 3, etc.).

The Terminology is depicted in Figure 3.

Figure 3 – WBS Terminology
3.3. WBS Use

Typically in a small project, there is a simple project development process. In large or complex project, there are often multiple project phases and sub phases, which are then grouped into a single project. In each case the WBS structure provides assistance in developing the Project scope, schedule and budget efficiently.

The WBS task name terminology is to be used in the schedule for a project. The PM, with the input from the Project Team, selects the required tasks for a particular project, and these will constitute the Scope tasks for the project. The PM will use the PWP to develop the Project Scope.

If a task is not applicable to a particular project, the name notation shall be skipped. The task notations cannot be changed and shall be consistent throughout the project.

The PM may determine if an additional task is required. The first step is to use the scope language under an existing task to describe what is needed.
4 Scope of Services - Template

The Scope of Services Template defines the tasks a consultant is responsible for completing. The requirements and responsibilities for each task are clearly defined to ensure completion of the task. The Scope of Services governs how a task will be accomplished, who is responsible and what will constitute its completion. A Scope of Services is needed for each project which uses the resources of a consultant.

A template Scope of Services based on the WBS is provided in Appendix D. This scope of services describes each task in the WBS.

Note that the Project Specific sections are general and are for example purposes only. These sections are not intended to be a list of all required sections for a particular project. Each project will have its own particular sections as dictated by the PWP and as decided on by the Project Team with the approval of the Project Manager.

4.1. Scope of Services Development

The complete project scope will consist of the PWP prepared by MCDOT and the Scope of Services which will be prepared by a consultant using the template Scope of Service. Scope of Services for a project will be developed using the template Scope of Services to have consistency across projects and consultants.

The information that is common to all design contracts is contained throughout this Project Development Manual. Note that not all of the tasks described are necessary on every project.

For each project, the Scope of Services shall contain any tasks which a consultant is responsible to complete. The sections in the PWP document will supersede sections in the Scope of Services.

4.1.1 Guideline for Conflicts

If conflicting criteria or procedures are presented in the scope of services or the references, the general order of precedence in resolving a conflict will be the following:

1. The Scope of Services – Project Work Plan;
2. The Scope of Services – Project Specific;
3. The Project Development Manual;
4. The MCDOT Roadway Design Manual;
5. MAG adopted Design Concept Guidelines for Roads of Regional Significance where applicable and reasonable;
6. Other MCDOT publications;
7. Flood Control District publications;
8. AASHTO publications; and
9. All other approved publications listed or used.

Confirm the resolution with the Project Manager. The Project Manager, in consultation with the affected parties, will make the final determination in the resolution of conflicts.
5 Schedule - Templates

The Project Schedule is developed based on the list of tasks identified in the WBS and the Scope of Services. These tasks are given a realistic length of time, start/finish milestones and are arranged in sequential order to form the Project Schedule.

The Project Schedule provides a time phased representation of selected tasks, milestones, dependencies, resource requirements, task duration and deadlines. The Project Schedule consolidates all tasks into a logical and manageable flow. The Project Schedule should be detailed enough to show each WBS task to be performed, the party responsible for completing the task, the start and end date of each task, and the expected duration of the task. The ordering of tasks in the Project Schedule will follow the sequence of events required to complete the project and should be consistent with the Project Development Process flowcharts shown in the Project Development Manual - Volume III (Scoping) and Volume V (Final Design). In addition, the Project Schedule will detail dependents and pre-requisites for each task. The critical path, or the longest path of events through the project, must also be identified.

This information is organized into a GANTT chart (or bar graph), a two-dimensional exhibit which shows each task and its timeframe for completion. Additionally, major milestones are shown on the Project Schedule as well as requirements for each milestone and tasks which are dependent on the milestone. There may be a need to extract particular discipline schedules out of the project Schedule and thus project schedule should be detailed and resource focused so that discipline specific schedule can be extracted.

5.1. Template Schedules

Template Schedules based on the WBS and template Scope of Services are provided in Appendix E. These schedules detail each task in the WBS. The PM will use these template Schedules to develop a project’s Schedule.

There are two template Schedules; Scoping and Final Design. The Scoping schedules details the Scoping project based on the Scoping process. The Final design schedule details the Final Design process.

Schedules for a project will be developed using the template Schedules to have consistency across projects and consultants. The PM will need to document assumptions and decisions made when developing the Project Schedule, including rationale for tasks included and/or modified. The PM will consult the Project Team to develop task durations.

During the life of the project, actual progress is frequently compared with the original schedule. This allows for evaluation of projects and allows the team to calculate schedule variances against the baseline.

5.2. Project Schedule Development

The task durations and dependencies will need to reflect the actual project requirements. It is important to review project milestones and refine their list in the Project Schedule. The milestones have no duration. For example, deliverables are often represented as milestones, while the effort to produce the deliverable is referred to as a task. Milestones occur at the end of almost any work package in the WBS. Major project milestones should be included in the Project Schedule summary at the top of the Project Schedule.
Estimating task duration will allow the Project Team to set the baseline time expected to complete a task. Similarly, defining the task dependencies helps to resolve any scheduling and/or resource conflicts. Understanding the dependencies and relationships of the tasks assists in resolving difficult scheduling conflicts. It should be understood that some task dependencies are not pure. In other words, some parts of a task can be started prior to finishing the task that is shown as its predecessor. This fact should be considered in estimating task durations.

The critical path is the longest logical path through a project and should be identified in every schedule. It determines the earliest possible completion of the project. The critical path should be carefully managed, because, if the critical path tasks slips, the entire project is delayed. In order to manage the project, the PM determines the critical path and remains aware of its importance throughout the implementation of the project.

### 5.3. Project Deliverables Approval Matrix

The Project Deliverables Approval Matrix is an important element to the Project Delivery Process. Once the project documents are determined and agreed upon with the Project Team, the PM will assist in developing a comprehensive deliverable list for the project. This information is used in developing various project documents including the Schedule and this becomes part of the PWP.

The typical Deliverable Approval Matrix is shown in **Table 2**.

<table>
<thead>
<tr>
<th>Deliverable Name</th>
<th>Approved by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Scoping Request</td>
<td>PRC</td>
</tr>
<tr>
<td>Design Criteria</td>
<td>PM &amp; Project Team</td>
</tr>
<tr>
<td>Conceptual Alternatives</td>
<td>PM &amp; Project Team</td>
</tr>
<tr>
<td>Candidate Alternatives</td>
<td>PM &amp; Project Team</td>
</tr>
<tr>
<td>Evaluation Criteria</td>
<td>PM &amp; Project Team</td>
</tr>
<tr>
<td>Design Exceptions</td>
<td>Director &amp; Division Managers</td>
</tr>
<tr>
<td>Recommended Alternative Selection</td>
<td>Project Team, PM, &amp; Division Manager</td>
</tr>
<tr>
<td>Value Engineering Report</td>
<td>Director &amp; Division Managers</td>
</tr>
<tr>
<td>Scoping Approval</td>
<td>Director &amp; Division Managers</td>
</tr>
<tr>
<td>Project Final Design and Construction Request</td>
<td>PRC</td>
</tr>
<tr>
<td>Bid Approval</td>
<td>Director &amp; Division Managers</td>
</tr>
<tr>
<td>Recommended for Construction</td>
<td>PM &amp; Director</td>
</tr>
</tbody>
</table>

### 5.4. Major Milestones

A Project Schedule should always show major project milestones. It is important to provide a summary schedule consisting of these milestones to the decision makers (PRC, Project Team, etc.). The template schedules are set with major milestones summary provided right up front. All project schedules are expected to be developed with the major milestones shown up front.
The major milestones for the Scoping of a typical project are shown in **Table 3:**

**Table 3 – List of Typical Major Milestones for Scoping Phase**

<table>
<thead>
<tr>
<th>Major Milestones for Scoping Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Startup</td>
</tr>
<tr>
<td>Project Review Committee (PRC) Approval</td>
</tr>
<tr>
<td>Consultant Notice to Proceed (NTP) (as necessary)</td>
</tr>
<tr>
<td>Public and Stakeholder Involvement Complete</td>
</tr>
<tr>
<td>Geotechnical / Pothole Layout Submittal</td>
</tr>
<tr>
<td>Design Criteria Approved</td>
</tr>
<tr>
<td>Right-of-Entry Permit</td>
</tr>
<tr>
<td>Geotechnical /Pothole Environmental Clearance</td>
</tr>
<tr>
<td>Survey and Mapping Complete</td>
</tr>
<tr>
<td>Conceptual Alternatives Approved</td>
</tr>
<tr>
<td>Technical Memoranda Submittal</td>
</tr>
<tr>
<td>Recommended Alternative Selected</td>
</tr>
<tr>
<td>Prior Rights Information Obtained</td>
</tr>
<tr>
<td>Geotechnical / Pothole Test-holing Completed</td>
</tr>
<tr>
<td>Preliminary Right-of-Way Identified</td>
</tr>
<tr>
<td>Draft SDR and Scoping Plans Submittal</td>
</tr>
<tr>
<td>Technical Memoranda Complete</td>
</tr>
<tr>
<td>Final Scoping Document - Final Scoping Plans Submittal</td>
</tr>
<tr>
<td>Scoping Approval</td>
</tr>
</tbody>
</table>
The major milestones for the Final Design phase of a typical project are shown in Table 4:

Table 4 – List of Major Milestones for Final Design and Construction Phase

<table>
<thead>
<tr>
<th>Major Milestones for Final Design Phase and Construction Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Design Startup</td>
</tr>
<tr>
<td>Project Review Committee (PRC) Approval</td>
</tr>
<tr>
<td>Consultant Notice to Proceed (NTP) (as necessary)</td>
</tr>
<tr>
<td>CLOMR Approved</td>
</tr>
<tr>
<td>60% Submittal</td>
</tr>
<tr>
<td>Right-of-Way Clearance</td>
</tr>
<tr>
<td>Environmental Documentation</td>
</tr>
<tr>
<td>95% Submittal</td>
</tr>
<tr>
<td>Environmental Clearance</td>
</tr>
<tr>
<td>Utility Clearance</td>
</tr>
<tr>
<td>Plan in Hand Field Meeting</td>
</tr>
<tr>
<td>100% Submittal</td>
</tr>
<tr>
<td>IGA Signed</td>
</tr>
<tr>
<td>Sealed Submittal</td>
</tr>
<tr>
<td>Final Design Process Complete - Signatures Obtained</td>
</tr>
<tr>
<td>Advertise for Bids (as necessary)</td>
</tr>
<tr>
<td>Hand-off Meeting with Construction Staff</td>
</tr>
<tr>
<td>Construction Start</td>
</tr>
<tr>
<td>Construction Completion</td>
</tr>
<tr>
<td>Project Close-out</td>
</tr>
</tbody>
</table>
6 Budget

A Project Budget will be developed concurrently with the development of the Project Schedule. The Project Budget lists MCDOT costs required for the project. If consultants are assigned to a project then a fee proposal will be requested and the cost is included in the project budget.

6.1. Fee Template

A consultant Fee Template based on the Scope of Services template and the scope in the PWP as provided in Appendix F. The PM will remove/modify all tasks listed in the Fee Template as necessary to match the tasks selected in the Project Specific scope of services and PWP. Once this modification has been made, the PM should provide this Fee Template to Consultants to develop a project’s fee estimate. The PM will coordinate with the discipline representative for review/comment on the consultant’s fee proposal prior to approval. The PM will ensure the fee proposal is within the budgeted amount.

The fee for a project will be developed using the fee template, to have consistency across projects and consultants. The PM will need to document assumptions and decisions made when reviewing the fee proposal, including rationale for costs included and/or modified.

6.2. Project Budget Development

Development of Project Budgets requires coordination with the discipline representatives. Upon completion of the Budget based on multiple inputs, The PM should review the combined Budget for the project activities with the Project Team to determine if the work descriptions, schedule and associated budgets are complete and reasonable. If there are significant differences, the PM will determine the reasons and either redefines the work packages, schedule and budgets, or approves the appropriate project budget in consultation with the Project Team.

If a budget change is identified by a project team member and/or the PM, then the requested change will be communicated to the Project Management Branch Manager. The guidelines on when to present a scope, schedule, and budget change to the PRC as identified in Volume I, Section 3.8 shall be followed. On a quarterly basis the Project Management Branch Manager, TSM Division Manager, and Capital Improvement Program (CIP) Manager will address and document changes to project budgets which do not require PRC approval. Only after approval will a project budget change.
7 Quality Control and Quality Assurance

The guidance and direction provided in the PDM are intended to ensure quality and that each project meets the defined goals. Each project team will be expected to perform tasks on that project and will be responsible for fulfilling their responsibilities accurately and efficiently. Quality Control (QC) and Quality Assurance (QA) guidelines are established to continue to improve the quality of our services to the community.

7.1. Quality Control

QC is the independent checking of work and use of approvals to ensure a high level of confidence that each deliverable will meet expectations. Asking questions, training, and back-checking all work before it is reviewed by the PM is all part of QC. Each member of the project team needs to understand their role and expected duties and display the initiative to stay committed to providing a deliverable that is consistent and accurate. Consultants are required in their scope of services to conduct their own QA/QC review prior to each submittal. To be included with each submittal, the consultant shall complete and sign the consultant Quality Compliance form which is located in Appendix I.

7.2. Quality Assurance

After each submittal is distributed for review, the reviewers will use the checklists provided in Appendix E and Appendix F (Final Design Review) to perform QA. The checklists are not an exhaustive list of design element and it is the responsibility of the designers and reviewers to reference of the appropriate design manuals. The checklist is a tool to use during review that addresses common errors and significant elements. It is the reviewer’s responsibility to conduct a thorough and complete technical review that is appropriate for the submittal stage in review. The reviewer will return the checklists and summary of comments form to the Project Manager by the specified review date. The reviewer assigned to each project shall be different from the designer assigned to the project. The Project Manager completes a review of the submittal as well to ensure QC was performed on the project. In addition to the expectations identified in the PWP, design team members will use the checklists provided as a reference tool when working on projects. The PM will be responsible for enforcing the review timeline to assure that the quality reviews take place and all reviewers have provided comments. The PM is to ensure all components of the submittal found in the PWP are satisfactory prior to distributing the submittal.
8 Other Project Administration

8.1. Consultant Evaluation Process

The Consultant Evaluation Program is a program administered by MCDOT as a means to monitor and evaluate the quality of work performed on engineering consultant contracts, and to meet the federal requirement under Code of Federal Regulations 23 CFR 172.

A positive approach to the program assures that project schedule, cost, and quality of design and construction are attainable. This assures that potential problems that may impact other projects are identified and resolved in a timely manner.

All engineering consultant contracts shall be evaluated annually based on the Notice to Proceed (NTP) anniversary date by the MCDOT Project Manager, including other Technical groups in accordance with applicable contract provisions. In addition to annual evaluations, a final consultant evaluation must be conducted at the end of all engineering consultant contracts. The Consultant Evaluation Form is located in Appendix J.

8.1.1 Implementation Timeline

This evaluation program will be effective for all engineering consultant contracts with a Notice to Proceed date of July 1, 2015 or later.

8.1.2 Uses for Consultant Evaluation

Consultant Evaluations will be used for the following purposes:

1. To identify consultant performance strengths and weakness, as well as help identify, document and resolve performance issues as needed.

2. To be used as one factor or criterion in the selection process for subsequent contracts. Final evaluations for contracts executed after July 1, 2015 will be used as part of the selection process. Up to 5 points may be deducted from a consultant score during the selection process for final evaluation ratings of less than 3 (average performance) on performance factors of evaluation for projects a firm has completed for MCDOT over a three year time period.

Evaluation history to be used for selection will include evaluation scores encompassing the most current three-year period at any given time. The three-year evaluation history will be maintained for firm contracts executed after July 1, 2015. For example, a firm’s evaluation history in FY 2018 would include scores from FY 2015 through FY 2018, in FY 2019; the evaluation history would include FY 2016 through 2019.

MCDOT will deduct points from the scores of submitted Statements of Qualifications (SOQ) for each firm based on performance rating as follows:

- Performance rating of 1 or 2 on 1-2 evaluation factors -1 points
- Performance rating of 1 or 2 on 3-4 evaluation factors -2 points
- Performance rating of 1 or 2 on 5-6 evaluation factors -3 points
- Performance rating of 1 or 2 on 7-8 evaluation factors -4 points
- Performance rating of 1 or 2 on 9 or more evaluation factors -5 points
3. To be used as documentation to justify disqualification of a prime consultant from submitting Statement of Qualification (SOQ) proposal. In order for MCDOT to take action that could lead to consultant disqualification from submitting SOQs, the MCDOT PM or staff shall complete a Consultant Evaluation Form.

4. To be used as documentation to justify the declaration of a breach of contract for a consultant’s failure to fulfill terms of the contract or to address problems identified by MCDOT in the performance of the contract. In order for MCDOT to take action that could declare a breach of contract, the MCDOT PM or staff must complete a Consultant Evaluation Form.

Department Evaluations will be used for the following purposes:

1. To identify the Department’s performance strengths and weakness, as well as help identify, document and resolve performance issues as needed.

2. To identify process and procedure improvements the Department may address as appropriate.

8.1.3 Procedure

The MCDOT PM will initiate the completion of consultant evaluation forms for contracts annually on their NTP anniversary date.

Since evaluations will be used as a factor in the consultant selection process, it is important for MCDOT PMs, Resident Engineers or other applicable staff to complete evaluations in a timely manner.

Please adhere to the following general guidelines in completing the performance evaluation:

1. The Consultation Evaluation Form will be completed by the MCDOT PM and shall confer with other MCDOT Project Team members involved in the contract. The MCDOT PM shall complete the form within 21 calendar days after the NTP anniversary date and at the end of the contract.

2. When completed, the MCDOT PM shall discuss the evaluation with the consultant. If the consultant disagrees with the evaluation score, the consultant shall provide a written response which shall be attached to the evaluation. The consultant must also request a meeting with the MCDOT PM to try to resolve differences. The request for a meeting must be made within 10 calendar days after receiving the evaluation rating. If the request is not made within 10 calendar days, the score shall be considered final.

3. The Department Evaluation Form shall be completed by the Consultant for review of MCDOT personnel and returned to the MCDOT Procurement Branch.

4. Both the completed Consultant Evaluation Form and the Department Evaluation Form shall be filed together in a separate process improvement file in the MCDOT Procurement Branch.
8.2. Project Status Updates

In addition to placing project documents in the SharePoint Project Site, Project Managers are also responsible for entering project data, ongoing status, and monthly activities of the project into MCDOT’s TIP Project Status Tracking Tool. The reports the Project Status Tracking Tool will generate are used by Branch Managers, Division Managers, and the Director to verify the health of each MCDOT project.

TIP project information shall be entered into the TIP Project Status Tracking Tool as soon as they have been approved by the PRC and assigned a project number. The PM is responsible to ensure the project is added to the TIP Project Status Tracking Tool and all appropriate project information fields, schedule, project team members and budget data is identified and entered into this system. The PM shall update and maintain the project status on a monthly basis at a minimum. During the Construction Phase the Resident Engineer is responsible to ensure the construction details, dates, activities and critical path issues are entered at a minimum on a monthly basis.

It is the Project Manager’s responsibility to keep the information in the TIP Project Status Tracking Tool current and accurate by coordinating with the Technical Discipline Representatives.
APPENDICES

Appendix A – Project Work Plan for Scoping
Appendix B – Project Work Plan for Final Design
Appendix C – Work Breakdown Structure (WBS)
Appendix D – Scope – Template Scope of Services
Appendix E – Schedule – Template Schedules
Appendix F – Consultant Fee Template
Appendix G – Scoping Checklists
Appendix H – Final Design Checklists
Appendix I – Consultant Quality Compliance Form
Appendix J – Consultant Evaluation Form
APPENDIX A

Project Work Plan for Scoping
APPENDIX B

Project Work Plan for Final Design
APPENDIX C

Work Breakdown Structure (WBS)
APPENDIX D

Scope – Template Scope of Services
APPENDIX F

Consultant Fee Template

Adopted: March 2013. Revised: January 2016
APPENDIX G

Scoping Checklists
APPENDIX H

Final Design Checklists
APPENDIX I
Consultant Quality Compliance Form
APPENDIX J

Consultant Evaluation Form