

# Highway Division Project Management Office

May 14, 2018

## Strategic objectives – what needs are we trying to address?

The Department is engaged in an [Enterprise Project Management Initiative](#) (EPMI) to improve how it manages projects of all types and sizes. This initiative will not only help the Department improve its existing project management practices, but it will also create opportunities to grow and better leverage staff knowledge, skills and abilities in the principles and practice of project management.

As part of the EPMI, the Highway Division Project Management Office (PMO) was created to help us improve our project management capabilities in the Highway Division. To do this, additional and more specialized staff resources were needed than what was available under our previous organizational structure. More specifically, the PMO was created to help us improve our project management capabilities in the following ways:

- Increased transparency and accountability for meeting project schedules, budgets, and quality standards.
- Provide better information and decision-making processes related to the resources needed to deliver quality projects on time and within budget.
- Establish better controls and mechanisms for reporting project cost, schedule and quality.
- Provide a more comprehensive and risk-based approach to management of large, complex projects.
- Improve existing processes for developing and managing small to medium sized projects with varying levels of complexity.
- Provide data, tools, insight and recommendations that will help upper management create clarity and consistency in prioritizing and managing a portfolio of projects for programming and development.

The remainder of this document describes more specifically how the Highway Division PMO will help us meet these objectives.

## Mission – what is the purpose of the PMO?

Improve the Department's ability to consistently deliver quality projects on time and under budget through the application of sound project management principles.

## Core functions – what does the PMO do?

The PMO was created to help us better manage all types of highway projects, but the PMO will have different functions depending on whether the project is considered complex or not.

In general, complex projects are those with one or more of the following characteristics: extended construction duration, high cost, significant social, operational or environmental impacts, or other unique considerations. The following types of projects will be considered complex:

- Interstate reconstruction projects
- Urban corridor new or reconstruction projects
- Others as jointly determined by Project Delivery Bureau Director and the District Engineer

Specific examples of complex projects include projects such as I-74 bridge and corridor reconstruction, the Council Bluff Interstate System (CBIS), I-80/380 Interchange, Linn 100, and US 20 (the final forty).

The determination of which projects are considered complex will be made as early as possible in the project development process.

In the following sections, the specific functions and tasks of the PMO are described in more detail. These functions and tasks are divided into two categories: 1) Complex Project Management Tasks, and 2) Portfolio-wide Management Tasks.

## **1. Complex Project Management Tasks**

This section describes the tasks and responsibilities of the PMO for complex projects. For these projects, The PMO will assign a Project Manager (PM) for the development phase of the project, which begins with the traditional planning and environmental studies and continues up until project letting. Also, as indicated below, the PM may provide additional assistance post-letting, as requested by the District.

While a PM will be assigned for all complex projects, the level of involvement may vary with each project based upon the need. Unless specified otherwise in the Project Management Plan, the PM will be responsible for ensuring the following tasks are completed.

### **District and functional office coordination**

The PM will coordinate with the District and the various functional offices to ensure the project is delivered on time, within the established budget, and meets the quality expectations of our customers. The functional offices include: Location and Environment, Design, Bridges and Structures, Right of Way, Contracts, Local Systems, Construction and Materials, Traffic and Safety, and Traffic Operations.

The PM does not assume any of the responsibilities of the functional offices. The functional offices remain responsible for delivering their work products as before, including activities such as:

- Managing the day-to-day work associated with their deliverables
- Communicating with the District and other functional offices to obtain their review and input as needed (e.g. development of consultant scopes, consideration of alternatives, traffic forecasts, etc.)
- Developing a schedule for their work activities, in consultation with the PMO, the District and other offices
- Developing cost estimates for their portions of the project

The PM also does not replace the District's role as the primary point of contact for coordination with local agencies, utilities, and addressing constituent concerns. Because of the District's on-going relationships with these groups, and to facilitate effective coordination and communication with the District, the PM will work through District staff when outreach or coordination is needed with these groups.

Due to the nature of the planning and environmental studies, the Office of Location and Environment, in consultation with the PM, will take the lead with the following tasks:

- Development of the project purpose and need.
- Development of the initial overall project scope, schedule and budget.

### **Decision making**

The PM does not function as the decision-maker, but rather as the facilitator of a collaborative and graduated decision-making approach, which is briefly summarized as follows:

- All members of Project Management Teams (PMT) must take an active role, regularly participating in meetings and voicing their opinion when decisions are being made.
- The PM will facilitate consensus among the members of the PMT whenever possible.
- If consensus is not possible, the PM will escalate major decisions to the Project Sponsors\* and / or take the decision to Project Review. Major decisions are those that have significant impact to the project scope, schedule or budget.
- Complex projects will be co-sponsored by the District Engineer (DE) and the Project Delivery Bureau Director.
- If the DE and Project Delivery Bureau Director cannot reach consensus the Highway Division Director will decide.

\*The Project Sponsor is the person that commissions the project and provides the resources necessary to complete the project. Therefore, for highway projects, the Project Delivery Bureau Director and the appropriate District Engineer are best suited for this role.

### **Schedule management**

The PM is responsible for the following tasks to ensure the effective management of the overall project schedule:

- Coordinate the development and establishment of the overall project schedule with the District and the functional offices.
- Ensure that project schedules are entered, are coordinated with the current program, and are agreed upon by all the affected offices.
- Monitor and maintain the overall project schedule in the Project Scheduling System (PSS), and in the future, its replacement system(s).

### **Budget management**

The project budget is not the same as the project cost estimate. The cost estimate is simply the current opinion of probable project cost. The budget is intended to serve as one of several controlling factors in project scoping, design and development. Sound engineering judgement should not be sacrificed based on budget constraints, but the benefits of the design need to be weighed against the costs and impacts to other project budgets. This means a change in the project estimate does not automatically trigger a change in the project budget. The project budget must be approved by the Project Sponsors and may only be changed with their consent.

The PM is responsible for facilitating the following process for establishing and managing the project budget:

- The lead office\* develops an upper limit for the project budget using order-of-magnitude estimating techniques.
- The PM provides the Project Sponsors with information regarding the programming impacts of the proposed budget, considering other requested projects and currently committed projects.
- Project Sponsors, with input from the Program Team (which consists of the Directors of the Highway, Planning Programming & Modal, and Strategic Performance Divisions), reviews the proposed budget in terms of affordability, considering the extended program needs. If approved, the project may proceed. If not, the proposed budget is adjusted downward to fit the extended program capacity.
- The lead office develops the project scope based on the project's purpose and need, with assistance from other offices as needed.
- The lead office develops a more refined budget based on this project scope, with assistance from other offices as needed.
- If the budget is within the previously established upper limit for the project budget, then the project may proceed.
- If the budget exceeds the previously established upper limit, then:
  - First the PM works with the PMT to trim the project scope or find other cost savings measures to stay within budget and still meet the purpose and need.
  - If this is not successful, then the PM requests permission from the Project Sponsors to increase the upper limit for the project budget.
  - If the Sponsors approve and the budget can be increased without adjusting the existing program area funding levels, then the project may proceed.
  - If not, the Project Sponsors may request the Program Team to make adjustments to the program area funding levels to accommodate the project budget. If so, the project may proceed.
  - If not, then the project must be rescope or cancelled.

\* The lead office may be Office of Location and Environment (OLE), the District, or another office, depending on the type of project. Generally, this corresponds to the segment manager listed in PSS.

## **Project reporting**

The PMO will ensure schedule, budget and other performance data is collected and reported. The PMO will create project dashboards to report on these criteria as well as general project information suitable to share with the Transportation Commission and other stakeholders. Templates will be available for other projects with readily accessible information already filled in. If HDMT directs the PMO to expand the reporting of this data for routine projects also, the PMO will request the unique data from the offices during preliminary engineering and design.

## **Project management plans and financial plans**

For all projects, the PM will collaborate with the District and other involved offices to develop a Project Management Plan that will define the specific roles of each office involved with the project.

For projects that meet [FHWA's major project criteria](#), the PM will lead the development of and be responsible for submission of the formal Project Management Plan and Financial Plan, with input from the District and functional offices as required.

For projects that do not meet FHWA's major project criteria, the Project Management Plan may contain less detail than a formal Project Management Plan.

## **Risk management**

The PM will monitor project risks and work with the PMT and / or Project Sponsors to mitigate those risks. Methods used may range from very informal, such as discussion and general communications, to a formalized risk register. The methods used and level of risk management will depend on the complexity of the project.

## **Post-letting assistance**

After letting, the PMO will remain involved as needed during the construction phase. Post-letting functions may include the following, as requested by the District:

- Serving as the point of contact for questions regarding plans or development decisions
- Working with the District to resolve any plan errors or omissions
- Working with the RCE to incorporate necessary construction changes into future plans
- Updating or producing project reports (schedule, % complete, etc.) as needed
- Attending pre-construction, post-construction, and similar meetings, as needed

## **2. Portfolio Wide Management Tasks**

Portfolio-wide tasks are those tasks, functions or support roles the PMO provides for all types of projects, both complex and routine.

### **Production schedule meetings**

- Complex project schedules will be discussed as part of the Project Management Team (PMT) meetings, so discussion of these projects at Production Schedule Meeting will be minimal.
- Three weeks prior to printing the book for the meeting, the PMO will email a list of events that will be past due by the meeting, and those events that will be past due 2-3 months after the meeting. Individuals associated with those projects will be asked to collaborate with individuals involved in the project and complete the event or request a schedule change before book printing. The list will also include events nearing completion.
- Performance will be measured based upon how many events are not completed or addressed at the time the book is printed. "Addressed" means that either the date was updated as agreed upon by the staff involved, or

that staff agrees to keep the date as scheduled. The goal of this measure is not to measure schedule slippage but to encourage staff to be proactive and keep the information accurate. These measures will be reported as dashboards to the office directors, ADEs and any managers who are interested.

With the above changes, we expect the Production Schedule meetings to be shorter. With the available time:

- At each meeting, the PMO will identify projects that need to be assigned soon. The initial schedule will be discussed and each office will be asked to evaluate their capability to complete the work with in-house staff.
- At the next meeting, the group will discuss the schedule and decide which aspects or projects to outsource. This will give everyone a voice in which consultants are used, how the work is packaged for outsourcing, and if schedules can be adjusted to allow the work to be completed with in-house staff. Suggestions for particular consultants should also be made at this meeting. Although the suggested consultant can usually be used, the PMO will determine the selected consultant considering Department wide directives on balancing consultant workloads, expanding the available pool of consultants and other goals. If an office has concerns with the consultant selection, the reasons will be evaluated by the PMO and the office and with consultation with the Project Delivery Bureau Director if necessary.

### **Establish criteria for prioritization and budgeting**

In a fiscally constrained environment, not all projects will be able to be funded. The decision to fund one project over another must be based upon the cost of the project and the perceived value of the project. Currently, the staff responsible for preparing the program make these judgement calls on project value. While a project is being developed, there isn't a clear message about which characteristics will make a project valuable enough to fund. The long-range plan and asset management plan offer corridor and system level guidance, but that must be translated into individual project goals.

The PMO (in collaboration with TAMP Implementation Team, HDMT, P&T, etc.) will establish project performance criteria that can be used to prioritize projects for funding but also allow staff to see how their project choices affect the likelihood of that project being funded. Examples of potential criteria would include, but not be limited to: number of fatal crashes prevented, hours of delay eliminated, years of life added to the pavement, freight bottlenecks reduced, and other mobility related measures, etc.

### **Cost estimating**

PMO responsibilities include:

- Contracting and maintenance of the cost estimating software (iPDweb)
- Organizing and leading a iPDweb steering committee. The steering committee will be responsible for providing oversight and direction in the following areas:
  - providing and maintaining documentation for using the software
  - organizing training as needed
  - determining the need for and overseeing the implementation of future updates to the software.
- Documenting the roles and responsibilities of the various offices involved in the cost estimating process.
- Monitoring the timeliness of initial and updated cost estimates.
- Providing portfolio-wide quality control of cost estimates. This includes making sure estimates have been updated, make comparisons for increases / decreases from previous estimate to identify outliers, check estimates for the correct order of magnitude, and make sure all of the costs are represented in the estimate.

Functional offices responsibilities include:

- Preparing the estimates for their portion of the work.
- Documenting the basis of their estimating decisions.
- Quality control for their estimates.

## **Assessing project development resources**

The PMO will develop general, program-level estimates of project development resource needs and consultant service needs. These generalized estimates are based on overall averages of staff production rates and typical levels of effort to develop projects to certain schedule milestone events. These estimates are not intended to replace or supersede the more specific estimates of outside services needs that are developed by some offices.

When the annual needs do not match the staff and consultant funding available, the PMO will discuss options with HDMT and the Transportation Asset Management (TAM) Implementation Team for delaying development of some projects, adding projects to the list, or overrunning the budget. The PMO will convey these priorities to the affected offices so that they are better able to prioritize their work and make outsourcing decisions. Identified priorities are important to prioritize efforts on advancement candidates versus outsourcing budgets and to prioritize projects across districts. The PMO will track the actual effort and expenditures and provide updated forecasts throughout the year. Finally, the PMO will adjust project schedules in PSS to reflect department priorities.

## **Promoting collaborative project decision-making**

Over the years, decision making responsibilities have been shifted in an attempt to find the person who could make project specific decisions and be held accountable for their success. The problem is that when one person is labeled the unquestioned decision-maker, we can lose the benefit of the collective knowledge of our staff, and when things go wrong others can be tempted to point fingers. The ideal situation is where everyone contributes their specialized knowledge to the discussion, everyone understands the tradeoffs, and everyone commits to the decision.

The PMO's goal will be to promote this type of decision making by ensuring that staff understand the reason the decision was made and document those reasons to share with future team members. When key stakeholders are not willing to commit to a decision, the preferred resolution will be to discuss the issue at project review to ensure management support. To promote these conversations and overall information sharing, the PMO will set the agenda for Project Review. If you have an item to discuss, please submit it to the PMO.

## **Project scheduling software management**

PMO will serve as the owner of the existing Project Scheduling System (PSS) and successive replacement systems. In this role, the PMO will be IT Division's point of contact for data security questions, prioritization of upgrades, and other decisions related to the oversight and management of the system. To ensure broad input in these decisions by the affected offices, the PMO will chair a PSS steering committee with quarterly meetings to ensure that user needs are met in the most efficient and transparent way possible. The long-term goals of the steering committee will be to provide a system that meets the following objectives:

- Allow full and open access to the data, reports and processes
- Provide the ability for users to make their own custom queries, dashboards and reports
- Move away from the current office-centered user interface toward uniform views to improve communication
- Allow multiple users and atypical users to update information, but provides accountability by recording who makes changes and sending appropriate notifications
- Allows many team members to be assigned to a project, records their names and roles, and allows lists to be filtered by individuals to see their projects and events
- Provide GIS interfaces/views
- Provide links to backup data

As part of the management of this system, the PMO will provide and maintain standardized project schedule templates for the Districts and functional offices to use when setting scheduled for non-complex projects.

## **Consultant administration**

### **Outside Services Funding**

The PMO will account for and manage the Outside Services funding. At the beginning of each fiscal year the PMO will estimate the Outside Services expenses for the year and attend HDMT to recommend an increase or decrease in outsourced work and discuss the prioritization of projects. Actual expenses will be tracked against estimates to decrease excessive spending and improve future estimating. Expenditures will be reported by project and by work type.

### **Contracting consultant services**

The PMO will execute contracts for services beyond the staffing limits of internal staff. The functional offices will ultimately choose which projects to keep, but the PMO will suggest options to allow bundling of consultant work. The PMO will honor requests from offices to use a particular consultant on a task as long as that request contributes to the Department's goal of having an expanse of experienced consultants capable of providing quality services to the Department and does not add unnecessary risk and administration to the project.

The PMO will perform the following functions with respect to consultant contracts:

- QA/QC scope and budgets (to compare to typical levels of efforts for similar work)
- General contract administration – invoicing, contract execution, monitoring reports, audits, etc.
- Monitoring contracts for duplication of duties, untimely tasks, unneeded work, and fair prices
- Negotiate appropriate changes to consultant scope and fees, or in consultation with the functional office, assist as needed.

## **Project Development Manual**

The PMO will assume responsibility for ownership and upkeep of the [Project Development Manual](#). However, because significant aspects of the current manual could change when PSS is replaced, a re-write of the manual will need to be accomplished concurrently with implementation of the new system.

## **EPMI coordination**

The PMO will serve as the Highway Division's representative and liaison regarding [Enterprise Project Management Initiative](#) (EPMI) activities. As an integral part of the EPMI, the Highway Division PMO will work in cooperation with the Information Technology PMO and project managers in other Divisions to collaboratively advance the "state of the art" of project management throughout the Department. This will include collaboration and coordination in the development and implementation of project management tools, practices, templates, informational resources and training activities.

## Staffing

Deanna Maifield  
Transportation Engineer  
Executive

### Project management, Contract negotiation, Statewide measures

Jeremey Vortherms  
Senior  
Transportation Engineer

Jim Muetzel  
Senior  
Transportation Engineer

Linda Narigon  
Transportation Engineer  
Specialist

Nathan Thede  
Transportation Engineer  
Specialist

Garret Reeder  
Transportation Engineer  
Specialist

Engineer  
Student  
Intern

Engineer  
Student  
Intern

### General oversight of PSS, Schedule management on non-critical projects, Identify projects to assign/outsource

Mark Swenson  
Transportation Engineer  
Specialist

Steven Schroeder  
Transportation Engineer

Mark Blasius  
Design Tech

### Contract admin, invoice payment, CEC partnering

Jacqui Miskimins  
Executive  
Officer 2

Mark Muxfeldt  
Design Tech

Steven Gradoville  
Accounting  
Tech 3

Acct  
Interns

### Reporting and data analysis

Clint Pickering  
Management  
Analyst 3

Graphic  
Art  
Intern

Data  
Analyst  
Intern

Data  
Analyst  
Interns