



Project Management Principles for Use in the Public Sector: Tools for the Everyday Project Manager

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As demand for government services becomes greater and more complex and the nature of work continues to change, there is increasing interest in project management. In many public organizations, however, the term “project management” evokes images of highly specialized private sector project professionals working in project-based industries such as engineering, power, pharmaceuticals, and tech companies. Project management also has modern roots in government. In the 1950s, the Navy used project management methods in its Polaris project. During the 1960s and 1970s, the Department of Defense and NASA—not just large engineering and construction companies—employed project management philosophies and tools to direct large-scale, schedule-driven projects.¹

What does a project manager do, exactly, and who could benefit from sound project management principles? The purpose of this bulletin is to briefly answer those questions, to define the concept of project management, and to highlight key principles and universal lessons anyone in charge of managing a project in the public sector can draw from to run successful projects.

Project Management Users

Even without formal training in a particular management or process improvement strategy, such as Six Sigma or Total Quality Management,² the everyday project manager can implement core principles that will enhance project success. These principles are most commonly employed

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1. Lee Cooper, “Project Management Framework Lecture,” Virtual Lecture, Jan. 29, 2014.

2. “Six Sigma evolved from a statistical concept to a range of metrics, methods, and management approaches intended to reduce defects and increase quality in products and services.” Lee G. Bolman and Terrence E. Deal, *Reframing Organizations: Artistry, Choice and Leadership*, 4th ed. (San Francisco: Jossey-Bass, 2008), 374–75. Total Quality Management (TQM) “refers more to a general movement or

in heavily project-based organizations. These are implemented in organizations that are frequent users of projects, such as emergency and social services organizations, where there is a strong desire to control outcomes.³ Regardless of the organizational structure, project management has a place in all public organizations because management by projects has become a powerful way to integrate organizational functions and motivate groups to achieve higher levels of productivity and performance.⁴

Defining “Project Management” and “Project Manager”

According to the Project Management Institute,⁵ a “project” is a temporary endeavor, undertaken to create a unique service or result. It has a beginning and end. “Project management” is the application of skills, tools, and techniques to project activities to meet a project objective.⁵ The goals are to maximize the return on project investment so that the project is completed on time, within budget, and within scope and to achieve suitable measures of quality. A project manager is responsible and accountable for setting realistic and achievable boundaries for the project and for leading the project team to complete the project within the approved boundaries.⁶

As the definition indicates, at its core, project management is about creating a structure to manage a process to achieve a project objective. The project management framework outlines exactly how that process works and the areas of knowledge that impact project success.

Project Management Framework

Several factors influence project management success, including the composition of the project team, the authority granted to the project manager, the broader enthusiasm around the project, and the scope of the project. The framework works best when key stakeholders can and will be involved throughout the various project processes and in a *strong matrix* organization. In a strong matrix organization, the project manager has authority over individuals who may work across different functional areas, and staff members operate under at least one other manager besides the project manager. However, even in an organization that is not set up as a strong matrix—and many government units are not—the organization can choose to explicitly embed

philosophy of management than to a specific set of management procedures.” Hal G. Rainey, *Understanding and Managing Public Organizations*, 4th ed. (San Francisco: Jossey-Bass, 2009), 429. Six Sigma and TQM programs both were developed in industrial settings but have now seen large-scale application across industry type and sector. TQM programs focus on defining quality in terms of customer needs and responses. Leading TQM proponents emphasize workforce involvement, participation, and teaming as essential components of quality efforts.

3. Peter W. G. Morris, ed., *The Management of Projects* (London: Thomas Telford Services Ltd., 1997).

4. Morris, *The Management of Projects*.

5. Harold Gortner, Julianne Mahler, and Jean Bell Nicholson, *Organizational Theory: A Public Perspective* (Chicago: Dorsey Press, 1987).

6. Project Management Institute (PMI), *A Guide to the Project Management Body of Knowledge (PMBOK Guide)*, 5th ed. (Newtown Square, PA: Project Management Institute, 2013).

the authority over the project and its personnel with the individual designated as the project manager. This is increasingly important when project personnel have several lines of authority and the project is only one piece of their day-to-day responsibilities. For example, a project aiming to produce a new comprehensive vehicle policy for a municipality may include team members from the police, fire, public works, and finance departments, as well as from the manager's and the attorney's office, all of whom may directly report to different managers. In this situation, the project manager needs to have a strong communication plan in place with the functional managers of the project personnel and must ideally have final decision-making authority within the parameters of the project.

The project framework is built upon a set of key *knowledge areas* that address *facilitative functions* and *core functions*. The facilitative functions are about coordination, support, and communication. The core functions involve establishing the parameters to effectively control the project. Both functions are important for project success.

The facilitative functions include the following:

- **Human Resources**—effectively engaging people
- **Communications**—generating, collecting, and disseminating information
- **Risk Management**—analyzing and responding to risks
- **Procurement Management**—acquiring and procuring goods
- **Stakeholder Management**—identifying key people who will be affected by or who will affect the project and continually consulting and/or communicating with them

The core functions include the following:

- **Scope**—defining and managing all the work required to complete the project successfully
- **Time**—estimating how long it will take to complete the project and outlining an acceptable schedule
- **Cost**—preparing and managing the budget
- **Quality Management**—ensuring that the project will satisfy the stated needs for which it was undertaken

The facilitative and core functions include topics which responsible project managers will manage throughout the life of a project. Project managers can make sure to properly cover all of the knowledge areas by systematically working through a sequence of steps (see Figure 1, below). These steps are called, collectively, “process groups.” Processes are interrelated actions that ensure the effective flow of the project throughout its life and that employ the tools and techniques critical to project completion.⁷

To be successful, the project manager will need to have the proper authority, from the outset, to get the job done. She should then establish the scope of the project and plan the actions necessary to meet the project's objectives. Next, the work critical to project completion is undertaken according to the plan. The project is monitored and controlled by tracking and reviewing performance and progress, identifying changes to the plan, and initiating those changes. Finally, processes must be performed to finalize all activities and formally close the project.⁸

7. PMI, *PMBOK Guide*.

8. PMI, *PMBOK Guide*.

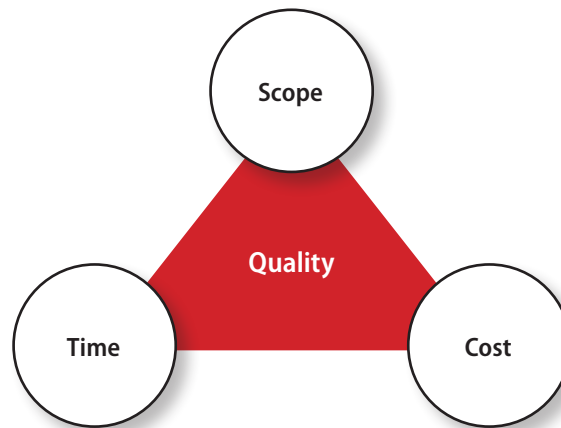
Figure 1. Process Groups



While the project management framework is outlined as a series of areas and steps, it is important to understand that project management itself is an integrative undertaking. It is the role of the project manager to facilitate coordination. For example, a scope change may impact the project timeline.⁹ Response to a scope and a subsequent timeline change may, in turn, trigger a revision to the project's cost. Project management is also iterative. Certain processes will need to be completed multiple times, and in other cases some processes will not be applied at all. The framework is best regarded as a guide of often simple and intuitive practices to help project managers achieve success.

Advanced techniques of project management may be found in many books and courses on the subject. The three short guides presented below, *Getting Started*, *The Project Charter Template*, and *How to Manage Project Time*, are helpful primers.

Figure 2. Project Management Triangle



9. PMI, *PMBOK Guide*.

Project Manager Pre-Project Checklist

- ✓ Outline communication structure (Who is communicating with whom and when do they meet?)
- ✓ Outline timeline and deadlines
- ✓ Outline accountability structure (Who will make the final call and have final sign-off authority?)
- ✓ Address how conflict will be managed within the team
- ✓ List all project roles (Who is doing what?)
- ✓ Assess whether the project can meet timeline and objectives and propose revisions if necessary
- ✓ Meet with management and the key project stakeholders before the work starts to develop a project charter (see [Project Charter Template](#))

Project Managers—Getting Started

What Is a Project?

A project is a temporary endeavor with a defined beginning and end undertaken to meet unique goals and objectives, typically to bring about beneficial change or added value (e.g., a project to replace all computers over a certain age).

What Does a Project Manager Do?

Project managers inspire a shared purpose within the project team. They enjoy the responsibility of driving results. They can shift between the “big picture” and the small-but-critical details. Ultimately, they honor scope, time, quality, and cost parameters and spend time measuring, assessing, and controlling the project’s resources, including staff. Project managers are responsible for, among other things:

- Planning the project
- Keeping the project within the set scope and timeline, adjusting work, making up for delays, and asking for revised projected time, if necessary
- Teambuilding and appraising individual and group performance
- Ensuring that policies are followed during the project
- Understanding any relevant contract language
- Documenting and assigning roles and responsibilities
- Determining metrics to measure quality product/service
- Communicating to make sure that all project members and stakeholders know what is happening with the project and are involved at the appropriate times
- Identifying risks
- Keeping project records

A project manager has many “balls in the air” during the course of the project. Among the things the project manager must keep in mind are the following:

- Understand that friction may occur because he or she may have team members who report to other bosses
- Think proactively and spend more time preventing rather than resolving problems
- Take responsibility for communicating with project team and stakeholders
- Put project interests above personal issues/interests
- Communicate realistically and never “pad” estimates

The Project Management Charter

The *project charter* is a document that formally authorizes the project and defines the boundaries. It is also a tool that can be used to document the use of organizational resources. This document serves as the mechanism in which a revision to the plan is stated and revised or *re-baselined*.¹⁰ Re-baselining entails recognizing that project information has either matured or changed enough to warrant updating assumptions and issuing a new revised cost estimate and schedule. There is a common perception that public sector projects fail because of unreported budget overruns, contractors not being held accountable, unmet requirements, uncharted maintenance projects, audit exceptions, risky contract administration, and failure to re-baseline.¹¹ Although there are conflicting opinions as to whether any of this is true, if it is the case that government projects often fail to deliver on time and within budget, it may be because agencies have more problems related to hierarchical control, red tape, buck-passing, rigidity, and timidity than do private enterprises.¹² Using a project charter is one way to set expectations and formally reset cost and time expectancies within the organizational control parameters when necessary to meet project objectives.

Project Time

After the [Project Charter Template](#) is approved with high-level dates, the next step is to outline time and schedule specifics with the project team. The specifics of time may or may not be included in the project charter. One useful approach a project manager can take is to outline project time using a series of “milestones.” A project milestone is an event, usually an important one, that is put at the end of a specific stage of the project because it signals the completion of a certain phase of work. These milestones are specified in the aforementioned project charter. After developing milestones, a more in-depth project management plan is developed to include critical components of the schedule, such as the *work break-down structure*, which breaks down projects into smaller parts and can also outline the *duration estimate* for all activities.¹³

10. Lee Cooper, “Introduction to Project Management,” Virtual Lecture, Jan. 20, 2014.

11. Cooper, “Introduction to Project Management.”

12. Hal G. Rainey, *Understanding and Managing Public Organizations* (San Francisco: Jossey-Bass, 2009), 74.

13. PMI, *PMBOK Guide*.

A broad array of free software is available that can help project managers map out their time and can assist them in producing easy-to-understand schedules, including PERT or Gantt charts.¹⁴ Even without the free software, however, simple tables and diagrams can be created using Microsoft Word or Excel. The need to plan the project carefully, monitor progress, and share timelines with stakeholders renders this piece of the framework critical.

Project Management—How to Manage Your Time

1. Create a Milestone List

You can structure a project schedule in a simple bulleted list, in a chart, or in an elaborate graphic. The important thing is to recognize all tasks/functions and to apportion the right amount of time to each to keep the project moving. Check in with all the actors involved to be certain they can meet the schedule you've set. Make sure to do the following:

- Include all major events within the project schedule
- Use the milestone list to assess the work completed up to a given point (compare total amount of work delivered and accepted against the estimate of work to be completed by a certain time)
- Provide an indication of how the project is progressing

2. Create an Activity List

- List all scheduled activities needed to complete the project
- Describe the necessary sequence of events
- Identify activities that can be handled simultaneously

3. Create a Project Schedule

- Estimate activity durations and create a diagram that shows the time each activity is expected to take (do not pad estimates)
 - Determine what resources are available and when, as this will impact the duration of activities
 - Factor in that lower- or higher-skilled staff will influence your productivity and timing (think realistically about the need for training, coordination, and communication)
- Schedule flexibility to provide buffer room so that some activities can be delayed without delaying the project end date

Schedule Compression Techniques: What Happens if I Am Behind Schedule?

Crashing Method

If you put more resources into critical project activities (e.g., staff, technology, etc.), you may shorten the project schedule; such “crashing,” however, increases costs

Fast-Tracking

If you perform critical project activities that were originally designed to be done sequentially in a parallel fashion, this “fast-tracking” will require reworking the project

14. “PERT” stands for Program Evaluation and Review Technique. A Gantt chart displays a project schedule in linear, bar chart form; it was developed by Henry Gantt.

4. Create a Resource Calendar

- Specify when and for how long resources will be available during the project (e.g., people, equipment, budget, grants, materials)

5. Create a Change Control Schedule

- Have in place a process by which changes to the schedule are run through the project manager; specify the process by which project members can initiate requests for changes to the schedule

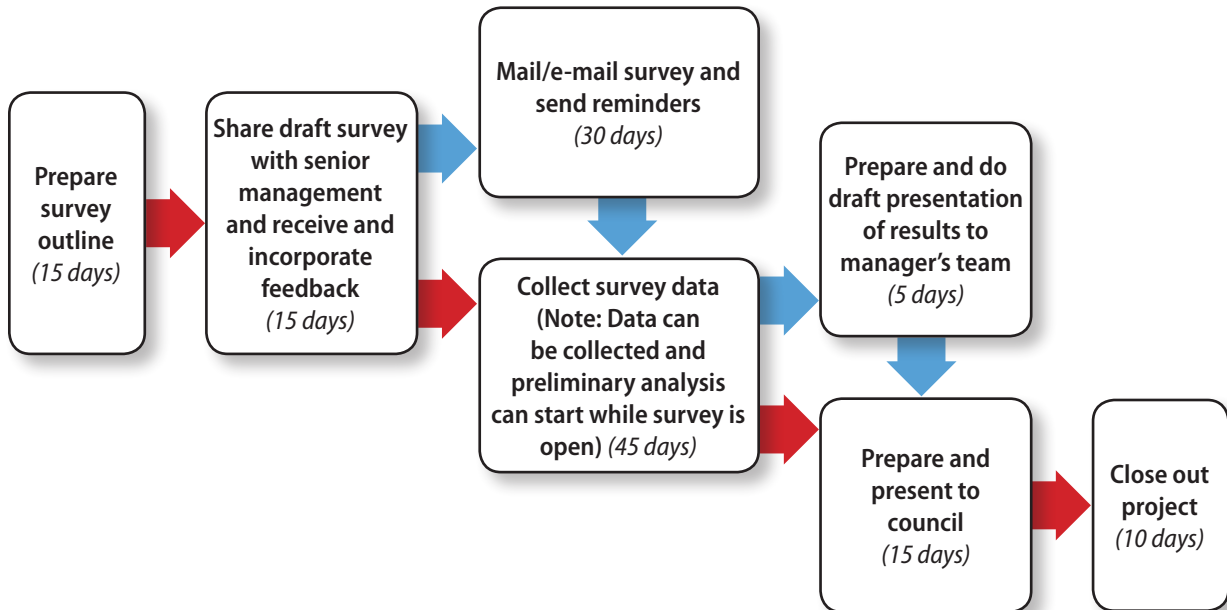
Sample Milestone List and Precedence Diagram

Below are a sample schedule for a project team working on a relatively simple special internal newsletter and an example of a precedence diagram for a more complex community service project.

Sample Employee Newsletter Production Schedule

Issue	To Editor	To Reviewers	To Printer	To Employees
September	August 11	August 26	August 30	September 3

Precedence Diagram Example



The process of doing a community survey as one part of meeting a strategic plan objective is a good example of a situation in which a project manager might consider using a scheduling tool. For example, the project manager might choose to use precedence diagramming or a PERT or Gantt chart to (1) outline the schedule, (2) highlight the order in which things need to be done and indicate which activities can be performed at the same time, and (3) represent the project time-frame.¹⁵ In the precedence diagram below, the red arrows represent the “critical path” (the longest estimated path from start to finish). The blue arrows represent other functions that are performed simultaneous with, and as part of, larger project functions; they should not impact the total project timeline, as they support functions with longer timelines. This project has a time-frame of 100 days.

Applying the Project Management Framework to the Public Sector

Sound project management is always important, but it is especially critical when projects are complex, when there are various constraints surrounding them (e.g., legal, scheduling, and/or budget in particular), and when activities need to be integrated and functional boundaries crossed.¹⁶ Project management principles can be useful for government employees charged with managing important projects within the challenging public sector environment. Even when governments do not have the resources to provide advanced project management training, there are simple tools, templates, and a framework that can be used to impact success.

15. The precedence diagram approach to scheduling project activities, stated simply, uses boxes to show the various tasks/stages of a project and then connects the boxes, normally with solid arrows, to demonstrate specific relationships/progressions.

16. Harold Gortner, Julianne Mahler, and Jean Bell Nicholson, *Organizational Theory*, 16.

Project Charter Template

[Authors' Note: The layout and contents of this template are recommendations only and should be modified to fit your project's particular requirements.]

Project Title: _____

Project Manager: _____

Description: *[Insert here a basic description of the project that clearly sets out its boundaries. The template provides three subfields to aid in the creation of a Project Description.]*

Project Need: *[Insert here an explanation of why the project is being undertaken. While this may seem simple, it will become one of the most important elements used to assemble and motivate the project team, especially as the project is getting off the ground.]*

Project Description: *[Insert here text describing the boundaries of the project. This text amounts to the preliminary project scope statement, describing what is and is not included in the project deliverables. This statement will, in turn, be refined in the project's planning phase. However, the boundaries outlined here must be adhered to during this refinement process.]*

Project Start Date: _____

Projected Finish Date: _____

Goals and Objectives: *[The goal of this project. Goals often reflect people's highest aspirations and can be expressed in ambiguous terms. Objectives, on the other hand, are specific and measurable. Objectives will need to be included, as they are critical to ensuring a project's success, specifically, to guaranteeing progress toward the (stated) long-term goal.]*

Assumptions, Constraints, and Risks

- **Assumptions:** *[Summarize here the conditions assumed in the project.]*
- **Constraints:** *[Summarize here the constraints for the project.]*
- **Risks:** *[Outline here the potential risks involved with the project.]*

Resources: *[List here the total budget for the project.]*

Personnel: *[List here the total number of people required to complete the project. Specifically, you will want to identify (1) the number of Full-Time Equivalent (FTEs)¹ and (2) the number of team members (full-time and part-time).]*

Material: *[Outline here the materials required to complete the project—not those needed to operate the project deliverables in production.]*

Project Team Roles and Responsibilities: *[Below is an example of how you might list project roles and responsibilities; alter to fit parameters of your project.]*

1. An FTE is, essentially, a unit reflecting the workload of an employed individual, used for comparison purposes.

Name	Role (team member)	Responsibility
Sarah Bennett	Project Manager	Manages team members, manages project performance, and approves all deliverables
Brittany Forbes	Team Member: Marketing	Develops internal and external communications
Ryan Hess	Team Member: Town Engineer	Provides technical expertise and ongoing monitoring on design of product
Sophia Regan	Team Member: Human Resources (HR) Advisor	Advises project manager on human capital management and HR policy constraints
Katie Parker	Team Member: Administrative Specialist	Schedules meetings, staffs related events, and keeps records

Associated Stakeholders

Town Manager Smith	Project Sponsor/Authority	Authorizes project
Advisory Committee	Project Stakeholder	Provides additional policy guidance
Community Partners	Project Stakeholder	Assists in planning scope
Council	Project Stakeholder/Project Sponsor	Provides additional policy guidance

Sign-Off: *[Authorities identified above are to sign here. This includes both the project manager and the project sponsor/authority whose authorization is needed for the project to start (e.g., manager, elected body, department head).]*

Date _____ Signature _____

Date _____ Signature _____

Comments: *[Reserve this space for information/observations that were not included above.]*

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