Information Technology Division

Project Management Policy, Procedures, Processs & Management (PPM)

Milestone A, project Initiation with project Brief Document

Milestone B, Enter planning with initial Project Charter

Milestone C, Enter Execution phase with approved Charter, Schedule & Budget

Milestone D Enter Closing phase with approved closeout plan

A

B

C

D

| Initiating | Planning | Executing | Closing |

Continue, Delay, Go Back, Abort?
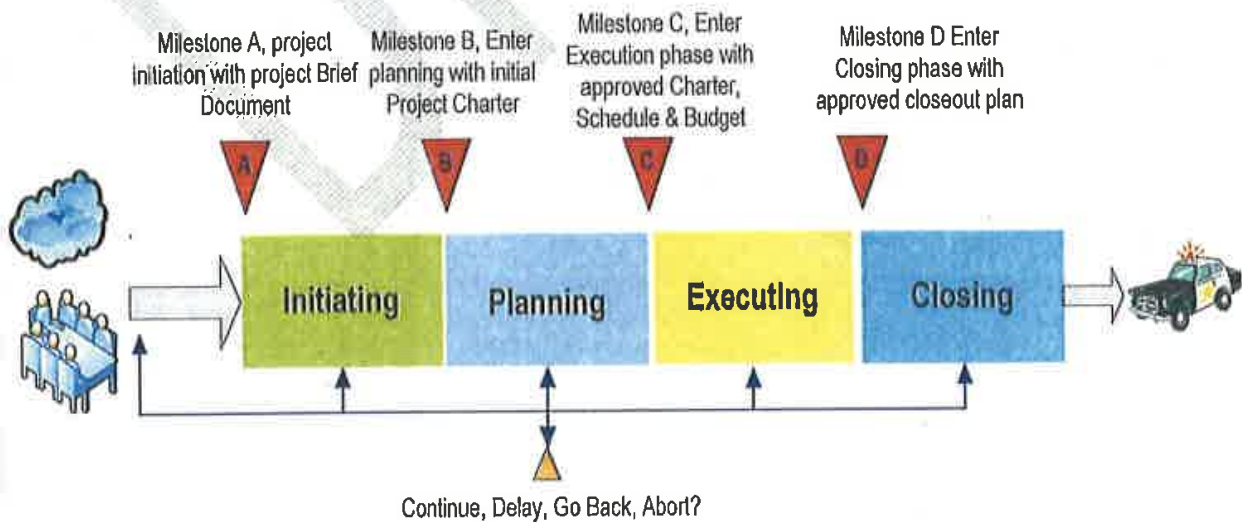
Document Revision History

<This is a living document. Changes and updates should be recorded and a new version saved after significant changes, and the old document saved with its previous version number.

Date	Version	Revision Description	Author
2/18/14	Draft 1	Initial draft document	Michael Ayres
3/4/14	Draft 1.1	Expanded sections.	Michael Ayres

TABLE OF CONTENTS

1. Purpose

This San Francisco Police Department (SFPD) Information Technology Project Management Office (IT-PMO) Policy, Procedures, Processes and Management (PPM) Guide provides documentation and guidance, standards, templates, policies and procedures, and define and promulgate best practices for units of the IT division, including managers, project managers, resource manager, and individual contributors.

It is the policy of the San Francisco Police Department Information Technology Division that this SFPD CIO-IT PPM Guide be used and followed for all IT projects. The Guide's processes and procedures may be tailored and scaled in rigor of use to suit individual project needs, while maintaining the spirit and principle of using repeatable processes, with milestones, and decision points. Steps or procedures that are scaled should not be omitted, but noted and referenced, for example with a "n/a" or a single sentence description.

When everyone understands, uses, and follows a structured process, applying and using common practices, projects are more likely to be successful, and enjoyable to work on by everyone. This is a living document, subject to change, additions, deletions, and corrections. Everyone in the police department's IT division are welcomed and encouraged to give feedback, ideas, and comments on this PPM, so that it can be a product of everyone.

2. Introduction

In recent years, the role of Information Technology has emerged as a important, if not critical, dimension for law enforcement agencies throughout the country. In our city of San Francisco. population density, which increases significantly during business hours or during special events, automobile, bicycle, and pedestrian traffic, and crime attractors constantly challenge our uniformed police offices and plain clothes officers in protecting life and property, deterring, preventing, and investigating crimes, and enforcing laws. These responsibilities and police officer safety, and situational awareness can be enhanced with modern, efficient, and secure IT systems.

By using well proven, structured processes and best practices, the PMO and other components of the IT division can work together to help the department reach its goals.

3. Project Creation

Formal project management has been increasing continuously in recent decades, because it has proven successful for completing one-time or specific unique work that falls outside of the day to day business as usual operations (BAU). Most BAU work is well defined, well practiced, and can be completed without much or any unusual effort. We would say the capability maturity of the persons and processes is high. A first step in project management is determining when some work to be done is a 'project.'

The following visual aide shows a general process for a work flow, and project creating.
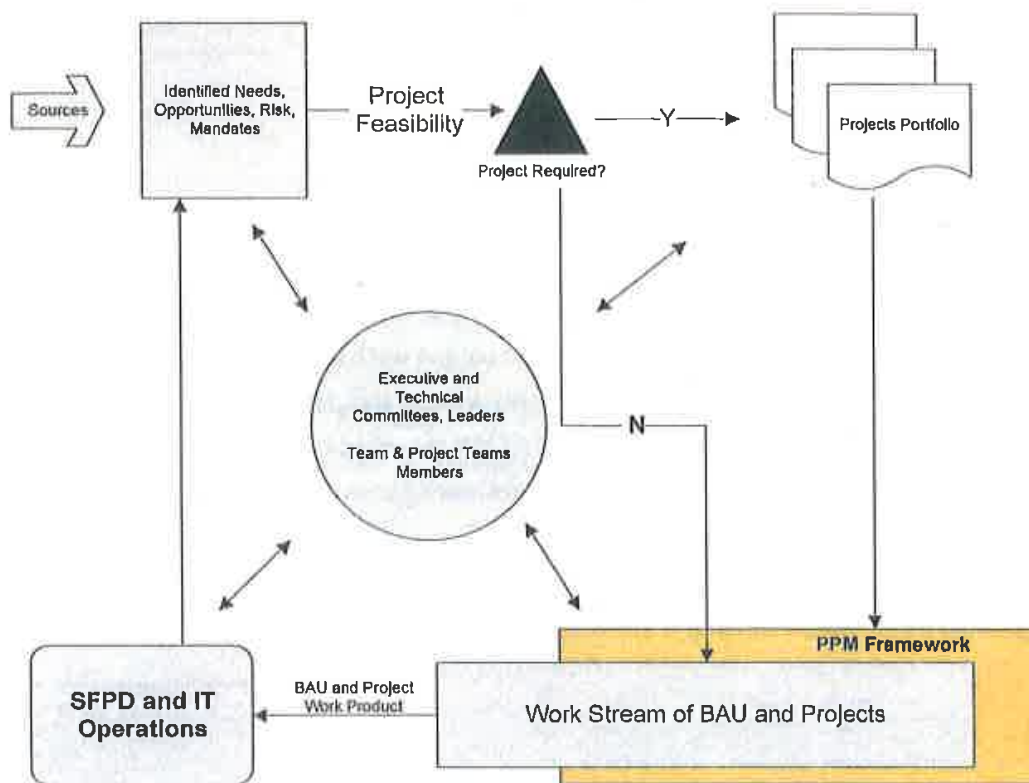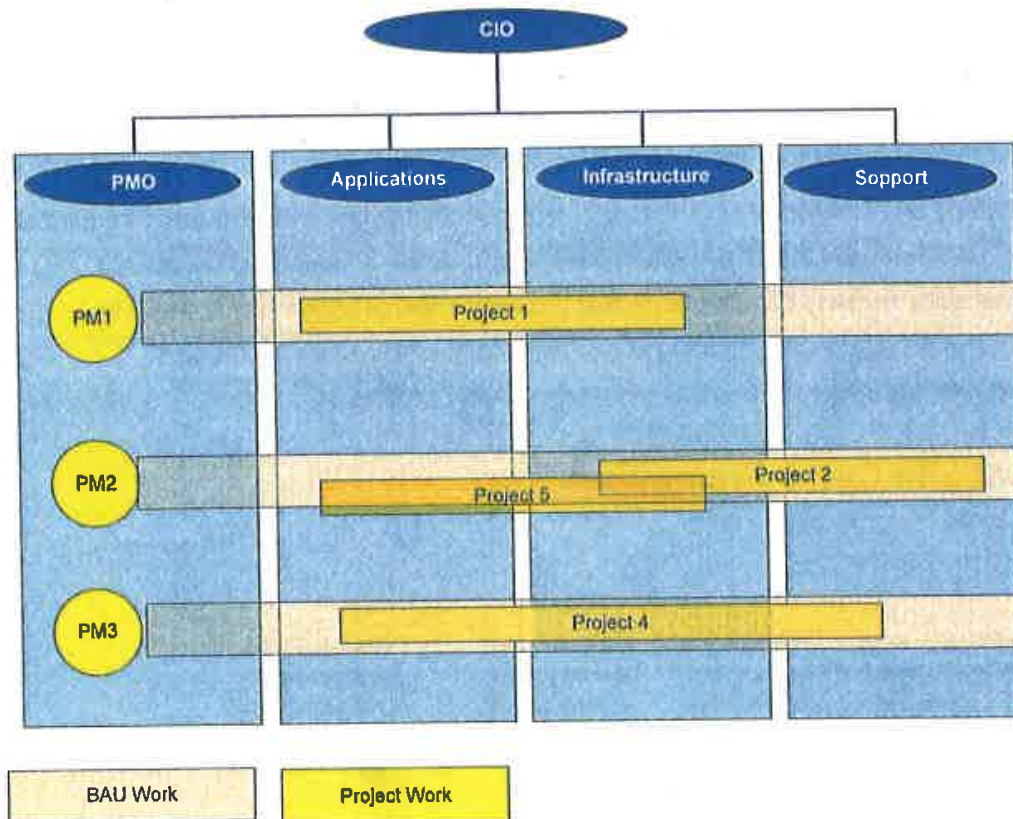
Figure 1.

3.1.   Project Creation/Designation Process

When an idea, need, risk, or opportunity arises that seems unique or seems beyond BAU, it should be considered as a candidate for a possible project. The process is not rigid, but should involve the 'sponsor' or owner of the idea, need, risk, or opportunity, or his or her delegate. The initial driver of a proposed project might be an outside agent, say a new regulation by the state of California, or a mandate from management or change in policy that triggers the need for a project. Other criteria for work becoming a project might be the dollar amount, estimated time, complexity, or priority, for example. The important point is that once some work or goal becomes a project it comes under the project management framework, processes, policies and procedures.

SFPD IT Matrix Organization

Figure 2.

3.2 CIO-PMO Matrix

This drawing, Figure 2 above, shows a matrix view of the SFPD CIO shop where engineers, technicians, developers, support personnel and others work on business as usual activities and may be assigned to project work too, where he or she have to complete their BUA work and specific projects work at the same time. For BAU work, an individual may have more control or flexibility in when and what sequence they do their work. Being on a project team, imposes the project's time line and schedule, and sequence on the matrixed project team members. In the

end, both BAU and project-ized work is the police department's IT work. Fully participating in the project management approach to work by team members will help the project complete successfully and can reduce the problems of imposed project processes by providing clarity and specificity on what is to be done by whom, and when to everyone.

Progress reporting and monitoring work in formal project management can be greater for a team member than BAU work, but this is needed in order to coordinate and manage the overall progress of the work. An easy comparison is that between a tennis player who plays entirely alone, and a baseball player or team sport player, who continuously coordinates and communicates with his or her team mates as the game/work progresses.

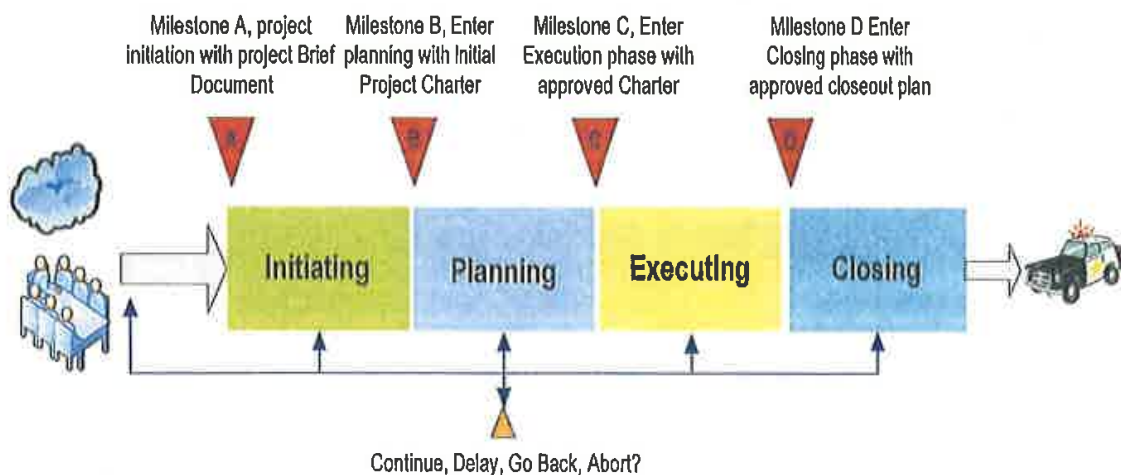# 4. Project Life Cycle Framework

Figure A, Project Life Cycle Framework

At a conceptual level, our projects have four phases, based on the Project Management Institute's (PMI) Body of Knowledge (PMBOK). Within each phase are steps, processes, inputs and outputs. Additionally, best practices call for key decision or pause and check points,

milestones, key decision points. Four high level milestones are shown about. Addition milestones and or decision points may be used within phases of a project. Such as a preliminary design review (PDR), critical design review (CRD), or operational readiness review (ORR), or initial operating capability (IOC), as needed.
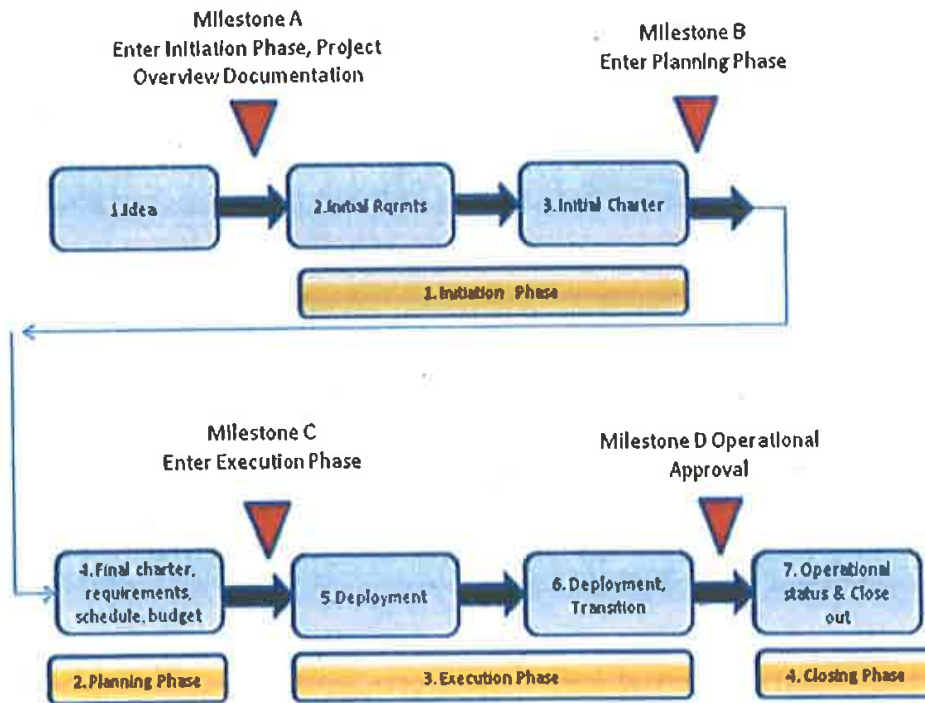
Figure 1, Project Life Cycle Framework

The project lifecycle framework is the highest level view that shows the four major phases in the project life cycle and four major milestones, which serve as decision points and control gate for moving to the next phase of the project. Additional specific activities executed in the different phases are shown in more detail below.

A second view the Life Cycle Framework is shown below, here called a system solution life cycle that emphasizes the control gate nature of decision points and phases.
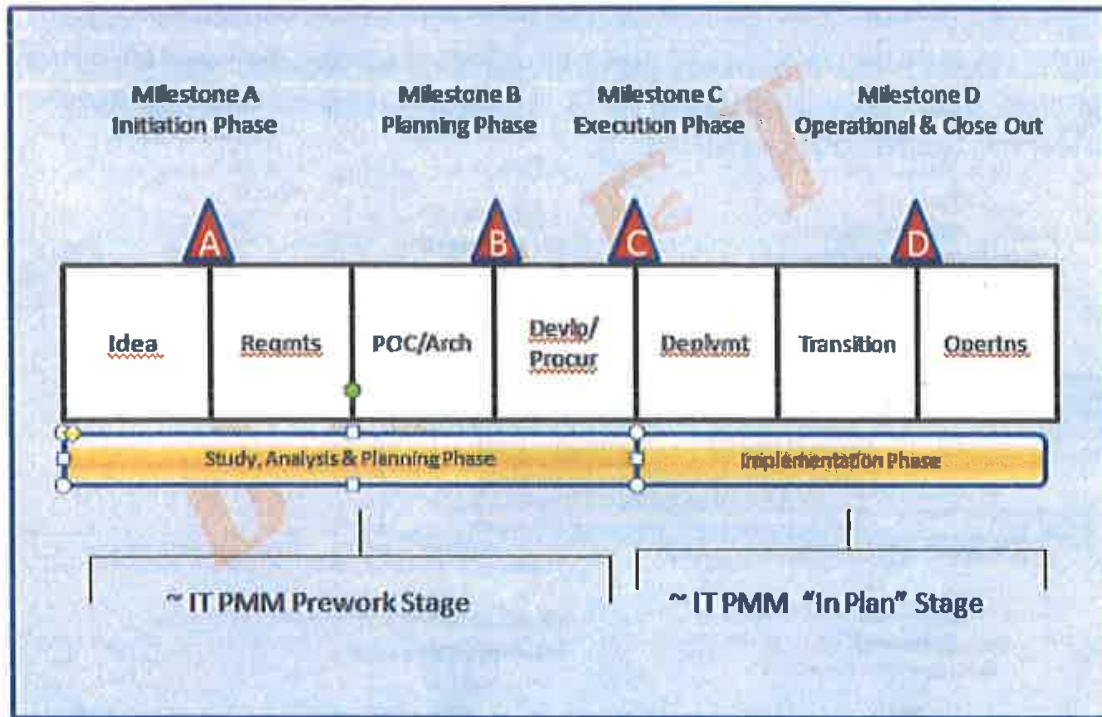
Figure 2.

4.1.   Project Definition

A project is formally defined as a work effort that is characterized by having a one-time objective or deliverable, with a defined and specific start and end date. A project will often have a one-time budget for at least some of the expenses.

4.2.   Business as Usual (BAU)

Other work that does not meet the threshold of a project, or is not treated as a project is generally referred to as business as usual. This might include software updates, refresh, repair, or fixes to desktop or other equipment.

The delineation of a project or BAU is not necessarily a fixed static rule, but can be adjusted in order to most efficiently complete the work. A threshold might be that work with a Level of Effort (LOE) of $100,000, for labor hours in dollars and equipment, or a duration of effort exceeding three months, should be moved into project status.

4.3.   Initiation Phase

Initiation Phase

Environment, DOJ Regulations, Key Controls, General Threats

Inputs	Activities	Outputs
• Statement of Idea, Threat, or Opportunity • Sponsor • Feasibility Study • **Project Brief**	➢ Elaborate concept ➢ Prepare Operational Concept ➢ Identify Sponsor ➢ Prepare Initial Scope ➢ Prepare $OOM ➢ Indentify Key Stakeholders ➢ Funding Reservation	• Concept of Operations • **Initial Charter Draft** • • **$OOM Estimate** • **Key Stakeholders** • **Initial Funding source**

Enablers
Technology, Personnel, Industry, Vendors

The first project phase is the Initiation Phase, in which an identified need, risk, or opportunity has been proposed or suggested as work to be done. This is beyond an 'idea' stage where some solution is just being talked about or discussed. In this step, the idea is formally proposed as a project to taken up.

The project initiation phase entry is demonstrated by completion of the **Project Overview or Project Brief document**, which is signed off on by the CIO and project requestor/sponsor or initiator. This can be completed by the sponsor alone, or with help from the PMO.

During this phase, additional research, initial requirements gathering, concept of operations or other artifacts may be created. During this stage, the first draft of the **Project Charter** should be completed, which is needed in order to move to the next Planning Phase.

Milestone A Review
Enter Initiation Phase

- Review of Scope & Project Overview
- Review of Operational Concept
- Review of $OOM
- Validate Sponsorship/Ownership

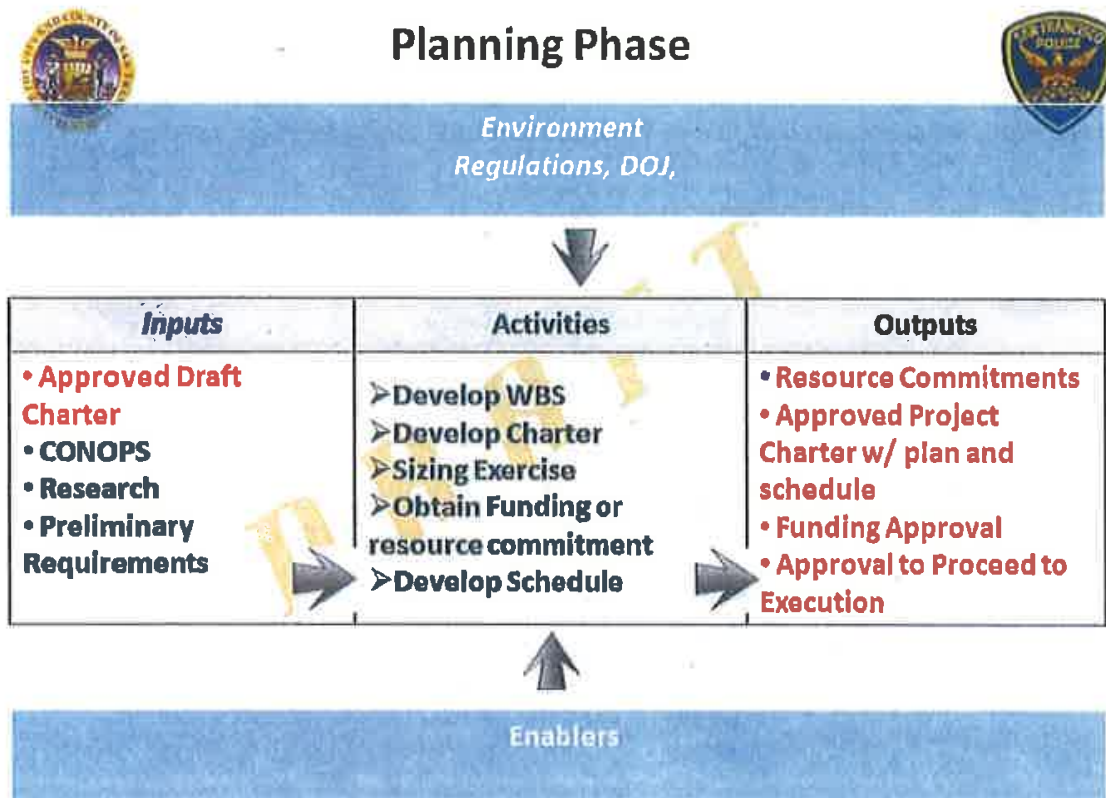**Decision**
  Approval to move to next stage request
  Return to previous state (gaps)
  Proceed with remediation
  Other

Before moving out of the Initiation Phase into the Planning Phase, we complete the Milestone A Review to assure we are ready to move into the planning phase. Depending of the size and complexity of the project the rigor for this review will vary.

4.4.   Planning Phase

Planning Phase

Environment
Regulations, DOJ,

Inputs	Activities	Outputs
• Approved Draft Charter • CONOPS • Research • Preliminary Requirements	➤Develop WBS ➤Develop Charter ➤Sizing Exercise ➤Obtain Funding or resource commitment ➤Develop Schedule	• Resource Commitments • Approved Project Charter w/ plan and schedule • Funding Approval • Approval to Proceed to Execution

Enablers

In the planning phase, an initial commitment has been made to proceed with planning the project. Funding may or may not have been committed, but funding commitment will be needed to move into the execution phase.

In the planning phase, key steps and documents, artifacts, are created and signed off on.

4.4.1   Project Work Breakdown (WBS) Structure

Many project management pundits and experienced practitioners consider the WBS the most essential core document for project management. Out of it flow the requirements, both

functional and engineering, the scope, schedule, and other critical follow one activities

Preferably this is a hierarchical tree structure which demonstrates progressive decomposition of elements, sub-elements, components, sub-components, and configuration items. A WBS can also be created in a written form and in either case each decomposition level and item is assigned a number sequence, for example.

<div align="center">1.1. ... 1.1.1 , 2.0 2.1, 2.2... 2.2.1</div>

The WBS and the item numbering code is the <u>foundational document</u> for the project and is later be used throughout the execution and control phases for budgeting, task and activity tracking, scheduling, etc.

The WBS constitutes the Scope of the project and includes <u>all</u> the work and product to be completed by the project and <u>only</u> the work and product to be completed by the project.

The WBS is not a schedule. The WBS can be arranged in different ways, functionality, physical elements, or logical elements, for example. All of the lower decomposed elements of the WBS are encapsulated in the higher level element.

Some have pointed out that no small degree of harm has been done to project management by the Microsoft Project software, which was initially little more than Microsoft Excel on steroids. Some initial problems have been corrected, for example you can now view project activities in a network diagram, as opposed to a long list I the Gantt chart view. Bad habits set in for creating very long lists of activities in MS Project, with a maze of connecting lines going up and down. This gave the impression of a lot of work being done and careful planning. Maybe this was the case, but often this can be 'high ceremony', which is eschewed by the Agile movement.

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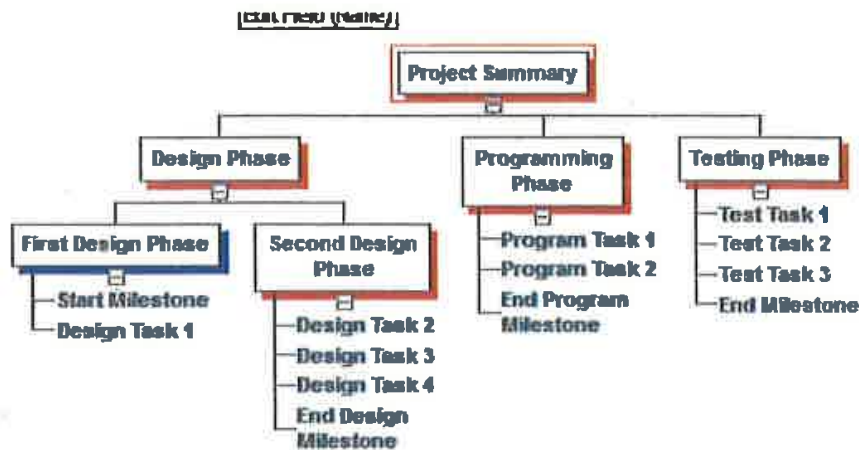
The sample hierarchical WBS, showed above is composed of nouns, not verbs, as a WBS element for an aircraft might be "navigation system." In the project plan or activity list or schedule, this would be entered as "Complete Critical Design of Navigation System", a verb action for an activity.

The Critical Tools software, WBS chartpro has a free demo version for moderately complex projects and a full version is inexpensive: http://www.criticaltools.com/wbsmain.htm

A WBS might also be depicted in a narrative written form, though the hierarchical view seems to convey more information quicker and is the recommended format. Project Summary

    0.0 Design Phase

       0.1   First Design Phase

           0.1.1   Start Milestone

           0.1.2   Design Task 1

    1.0 Programming Phase

       1.1   Program Task 1

       1.2   Program Task 2

Etc...

CharPro WBS files can be linked to MS Project files and reverse. Every element in the WBS must have a numerical identifier, which can be used to trace the element throughout the project, and into MS Project.

As a critical and foundational document of the project, the degree and organization of the WBS decomposition deserves some thought. As a general rule, when the WBS is converted to activities in a schedule, the smallest element in the decomposition should be sized that it can be managed and tracked easily. Endless lists of minor activities often seen in long MS Project files are counter-productive. Agile principles point to enough detail but no more than is needed just to show busy work tasks can be rolled up into one overall activity as long as the package can be managed properly.

4.4.2   The Project Charter

The second required document to be created in the planning phase is the Project Charter, which is used for entry into the execution phase. The Project Charted is the official go ahead approval to begin execution of the project, including commitment of resources and expenditures of funds for procurement of equipment and or profession consulting services.

The Project Charter shall be approved by appropriate persons and stake holder of the project, including at least IT CIO, project sponsor, and resource managers who will be committing resources of their units in the sizing exercise.

The project charter expands on the Initiation Phase Project Overview/Brief, and should reflect any scope expansion, decrease, risks, constraints, or assumption changes made since the Initiation phase.

While the Initiation Phase Overview/Brief document remains static, for reference, the Project Charter may change during the life of the project, *provided any proposed substantial change in the execution phase that affects the schedule or budget by plus or minus 10% must go though the change control process, or at thresholds as defined in the charter. Once the baseline charter has been approved at completion of the planning phase and on entry to the*

execution phase, the charter is under configuration management and subject to configuration management and change control.

The project charter template should be used in creating the charter. Instructions are included in the template. Sections or elements that are not used or not appropriate for any particular project should not be stricken, but marked n/a or in some other fashion in the charter.

Project Charter sections include:

- Responsibilities, at the resource manager level

  o Infrastructure/Operation

    ▪ Security

    ▪ Network Resources

  o Applications

  o Support

    ▪ Help Desk

- Project Definition, this would be an expansion on the Initiation Phase Project Overview/Brief

  o Problem, Risk, Mandate, or Opportunity statement

  o Scope Statement

  o Assumptions and constraints

  o Project Approach

  o Project Milestones, schedule, event, or work product related, key decision, or proceed/no proceed steps, events

  o Project Deliverables, usually work product

- o Required resources, committed in the project sizing exercise in the execution phase

- o Project Cost/Budget

- o Project Management, This is not a list of activities, but identifies

  - Change control process

  - Identification of

    - Project Manger

    - Project team members

    - Sponsor

    - Reporting and communication plan

- The elements of the Project Definition may vary in size or detail as is appropriate for the particular project.

On completion of all steps and documentation, approval to proceed with execution shall be obtained as defined in the charter.

4.4.3 The Vee Model

Basic Vee Model (Mooz, et.al. 1996)
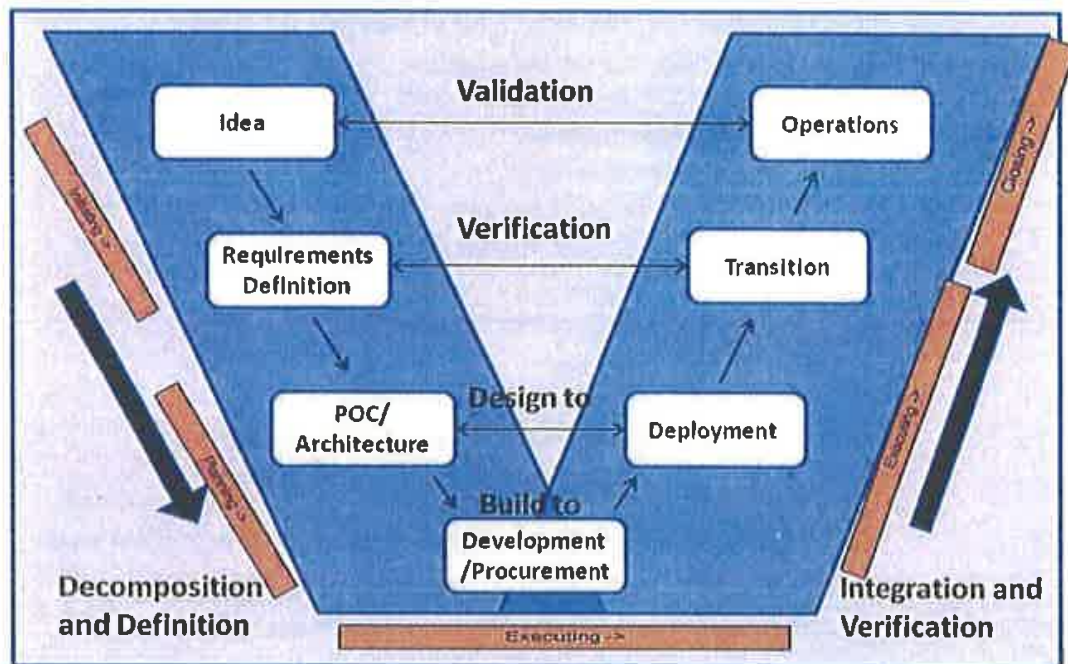
The Vee Model, was introduced by Forsberg and Mooz in the 1990s for visualizing the relationship between decomposition of system complexity and the following reverse order of development and integration, as the system is built up from smallest parts to successively larger and more complex integrated units. Though initially developed for systems engineering by the International Council on Systems Engineering (INCOSE), its popularity and usefulness has spread and it is now included the Project Management Institute's (PMI) Project Management Body of Knowledge (PMBOK) as a tool for project management.

For project management it is useful to visualize how to track steps, processes, and elements in decomposition in the WBS, are retraced and tracked going 'back up' the right hand side of the Vee in development. Steps taken going down the left side are verified, validated, or accepted in steps going up the right side. This Guide Book does not proscribe its use, and it is shown as a useful model of how to think of the engineering work that may be needed in a project and the gradual progressive deeper understanding of more and more details of the project.

4.4.4 Sizing Exercise

The next to final step (sign off on the final charter) in the planning phase is the sizing exercise. Sizing is a final step before moving into the execution phase to confirm that resources are available and committed to performing the assigned work and tasks according to the schedule.

Prior to the sizing exercise, a representative from the PMO (which could be the PM assigned to the project) will provide a copy of the final draft (but not yet signed) of the charter, and any other pertinent documents, such as detailed budget, engineering diagrams, or detailed requirements that supplement the charter for review by resource managers, or their representatives:

Infrastructure/Operations,   Gary Pierce

Applications, Rod Castillo

Support,   Amanath Ali

PMO,   Leo Solomon

After review of the charter, resource managers will provide back to the PMO sizing exercise manager their final best estimate of hours needed, and time to complete for work their unit is responsible for.

After receiving back estimates from the resource manager the PMO representative will finalize the estimates to the charter, and the project sizing spread sheet and then schedule the sizing exercise conference all (or in person if preferred).

At the scheduled sizing meeting phone conference call, the Sizing exercise leader, PMO representative, polls each resource manager, or his or her representative, if they 'commit' to providing the work as earlier estimated.

This exercise provides a transparent shared team commitment to complete the project's work, and will reveal any late issues such as resource constraints. If any issues arise at this commitment meeting, movement into the execution phase might be delayed, or scope or schedule of the project might be adjusted.

		Capital			
WBS Item	Org Unit	Description	$Unit Cost/hr	Units	Total $
5.1	Infrastructure	2 virtual Win7 servers	$50	20	$1,000
5.2	Infrastructure	BlaBla solftrware	$50	12	$600
5.3	Infrastructure	bla bla appliances	$50	18	$900
	Development	wiring, connectors	$50	75	$3,750
	Development		$50		$0
	Development		$50		$0
		Totals:		0	$6,250

Grand Total Capital: $6,250

The project's capital expenses are recorded in the Sizing Worksheet Capital tab. This workbook sheet serves as the project expense calculation and budget documentation.

		Internal Labor			
WBS Item	**Org Unit**	**Description**	**$Unit Cost/hr**	**Units**	**Total $**
5.1	Infrastructure	2 virtual Win7 servers	$50	20	$1,000
5.2	Infrastructure	BlaBla Integration	$50	12	$600
5.3	Infrastructure	Installation	$50	18	$900
	Development		$50	75	$3,750
	Development		$50		$0
	PMO	Project Management	$50	100	$5,000
		Totals:		225	$11,250

		External/Consultant			
5.3	Conslting	Oracle Engineer Consulting	$250	20	$5,000
		Totals:		20	$5,000

				Grand Total Non Capital:	$16,250

Project Labor (non-capital) expenses are budgeted and calculated in the Labor tab sheet of the Sizing Workbook. Internal staff cost per hour should be entered, and the total level of effort in hours. This provides both a cost estimate and resource usage for the project,

The summary tab of the sizing worksheet automatically updates from changes in the capital and labor sheets. This provides a quick summary of the project's budgeted costs. Actual costs are captured and recorded in project status reports.

Milestone B Review

- Approval of Preliminary Design
- Approval of, Validate POC
- Approval of Engineering Requirements
- Approval of Sizing Estimate
      Decision
            Approval to move to next stage request
            Return to previous state (gaps)
            Proceed with remediation
            Other

Before leaving the planning phase and moving into execution, the Milestone B review is held to evaluate readiness to move into execution.

EXECUTION PHASE

Execution Phase

Environment
Regulations, DOJ, General Threats

Inputs	Activities	Outputs
• Project Charter • Resource Commitments • Funding • Approval to Proceed to Execution Phase	➢ Execute Work Plan ➢ Project Management ➢ Management Reports ➢ Risk Management ➢ Change/Scope Control	• Project Work Product • Milestone Completion • Reports

Enablers
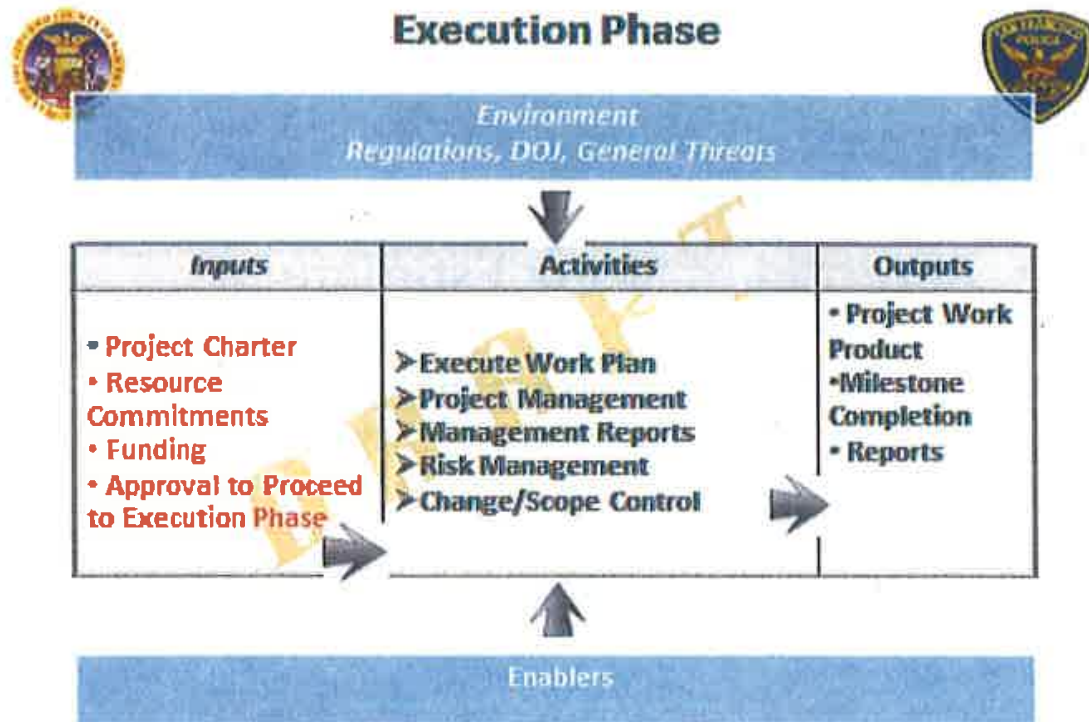
On entering the execution phase, the project work products, charter, scope, risk management, constraints, assumptions, budget and funding, resource allocation, etc. should be reviewed by the project manager and team to assure completion of the project on schedule and in budget is likely. Any serious risks should be reviewed with the project sponsor, PMO, and CIO to confirm entry into the execution phase.

Exact detailed management of the project in execution is not proscribed in detail for the project manager, other than required reporting and updates. With any event that threatens the budget or schedule plus or minus 10% should be reported to the sponsor and PMO for evaluation and decisions.

For efficiency and less document management and redundant entry of the same information in multiple documents,

for the project manager and project stakeholders, project execution tracking and reporting documentation are rolled up into a single Excel Spreadsheet, "Project xyz Management Workbook", which is stored in the project's SharePoint site. Multiple tabs in the workbook track different dimensions of the project's progress: such as a issues tab, a risks tab, a budget and burn rate tab, an activity tab.

Depending of the size and complexity of a project, a MS project file might be used. The exact tracking tools can be agreed upon by the project sponsor, PM, and PMO on entry into the execution phase.

Configuration Management Once the project has entered the execution phase, it is '**in plan**' and **under configuration control management**, which means any significant changes to the charter, project scope, schedule, or budgeted costs, must go through a **change control board** process, as defined in the project's charter.

Prior to going into plan, the execution phase, and sign off on the project charter by the sponsor, CIO, and or other key stakeholders identified in the charter, project artifacts, such as the charter, schedule, budget, scope are work in progress and can be modified without the formal change control process, but not without communication and coordination with key stakeholders.

4.5.   Periodic project team meetings should be held, in which:

- progress on all activities/tasks is reported and captured (should refer back numerically to WBS, milestones and key deliverables in the Overview and charter

- Entry, updates and tracking of risks, outstanding issues, or key items impacting schedule or budget

4.6.   Periodic Project Management Reports

- Team members and the PM will be more intimate with the project's progress and any issues

- Management reports are used to keep management aware of the project's progress at a higher summary level than individual tasks, however these might be reported on too in management reports as needed. Management reports are useful for portfolio management, long term planning, and reporting up the chain of command.

- Management reports include, but not necessarily limited to

     o Overall progress for planned against actual for high level deliverables

     o Risk management status, changes

     o Budget burn rate actual against planned

     o Tasks, deliverables completed in last reporting period (usually monthly)

     o Tasks, deliverables planned to complete in next reporting period

     o Any additional information useful to management

     o Sharepoint Dashboard Updates

     o Monthly Quad Chart ?

5.3   An Aside about Project Leadership and Team Members

How much has been written about the role of the project manager for project success? Despite how important that is, we know some projects are doomed to failure. Using defined procesess, control points, and templates can help to catch troubled projects, that may be no more than someone's idea, before resources are applied. Nonetheless, the PMs role is critical. In a matrix organization where

individual contributors are enrolled into a project as a 'team member' but who do not report to the project manager, and who are already busy with other work. How does the PM get really engaged response from team member contributors? One, of many, leadership thought leaders tools is Hersey and Blanchard's behavioral based situational leadership[1]

In their model, a lead or manager is to adjust their leadership/management style to match the task or work capability maturity of the person doing the work. Without going into Maslow's Hierarchy of Needs or Herzberg's Motivation-Hygene Theory, and complex motivation psychoanalysis, Hersey and Blanchard's model maps four levels of (task) maturity against four corresponding leadership styles.

The Hersey-Blanchard model maps each leadership style to each maturity level, as shown below.

Maturity Level	Most Appropriate Leadership Style
M1: Low maturity	S1: Telling/directing
M2: Medium maturity, limited skills	S2: Selling/coaching
M3: Medium maturity, higher skills but lacking confidence	S3: Participating/supporting

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[1] Hersey, P. and Blanchard, K. (1982). Management Of Organizational Behavior, Utilizing Human Resources. Englewood Cliffs, N.J. Prentice-Hall.

Maturity Level	Most Appropriate Leadership Style
M4: High maturity	S4: Delegating

To use this model, reflect on the maturity of individuals within your team. The table above shows which leadership style Hersey and Blanchard recommend for people with that level

Just by looking the appropriate style bolded word, many, except controllers or those unable to trust others, would want to be in the fourth quadrant: High Maturity – Delegating. In this place one can confidently delegate easily delegate work to someone who is able, confident, and totally willing to do the work. When this is not the case, often, the leader or manager benefits by adjusting the level of relationship and telling, selling, participating, or delegating behavior to the person doing the work, based on the latter's maturity (capability) level to the specific task or work. It's important to remember that the person's task maturity level can vary considerably from task to task, thus the 'situational' element. Environmental and situational factors can come into play, but let's not go into those. Hersey and Blanchard's work is readily available from many sources.

Below is a graphic of the model.

Situational Leadership Model
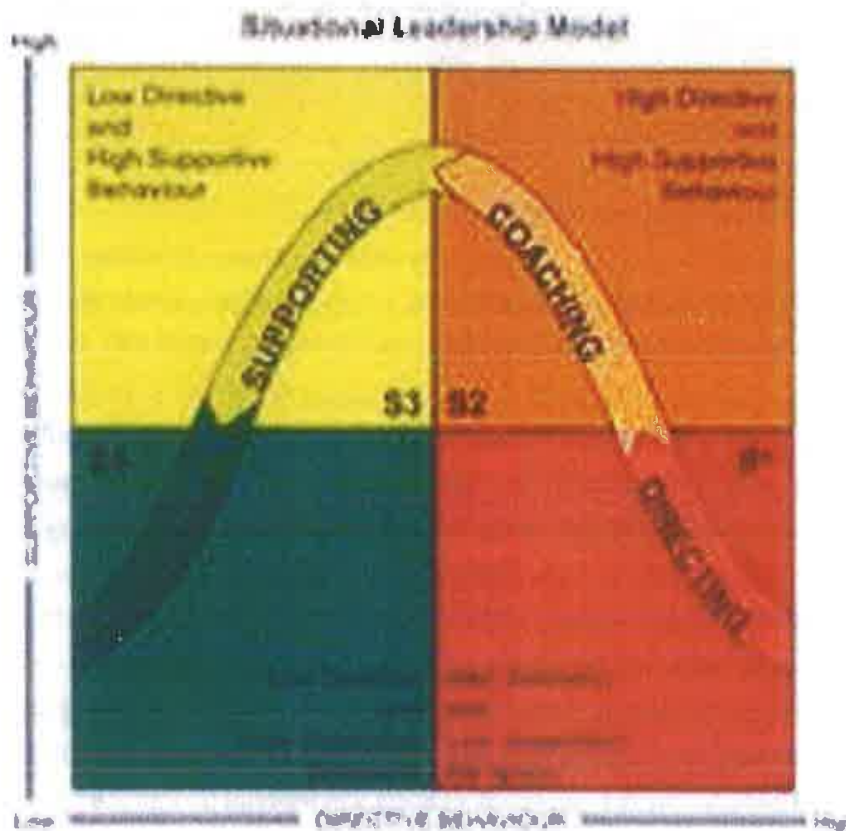
While it might be best work for the project manager to work in the xx quadrant, that is unlikely, and he or she will benefit from be able to adjust as the need arising on specific work tasks or activities in the project and the capability and motivation of followers doing the work. Working though resource mangers might be beneficial too, as the PM could work more in quadrant four and the resource manger will better know the maturity level of contributors in his or her team.

5.4 Tracking Project Progress

Finding the right balance and appropriate tracking of project activities and tasks are critical for project success, just as Goldilocks found the porridge and bed that was just right, not to hot or cold, too hard or too soft. Too much detail at a single project level can easily slide into the 'high ceremony' drama of busy work, demeaned in Agile management. Examples of this

are MS Project files with hundreds of minute simple tasks and a confusion of dependency lines going up and down. The other extreme to avoid is not tracking closely enough, which can lead to an activity that has fallen behind schedule not be caught in time for corrective action.

Secondly, tracking and monitoring of project activities should not just be the project managers' job. He or she can easily spend all of her time, endlessly updating small activities. Instead, each individual resource or team contributor is responsible for tracking the details of their work, which is then rolled up into a single status report on the overall activity. This idea is covered in Blanchard and Hersey's Capability Maturity Model.

Additionally, the degree of tracking needed is dependent on the capability maturity of the person, group or unit doing the work; that is not their emotional maturity, but skill level, 'maturity', they bring to doing the task.

For example, let's say a project calls for the installation of new server to expand the capability of the existing server, which as been identified as WBS element 4.3.1, and is assigned to Infrastructure and Operations, and the identified person responsible for completed the work is Helen Jones.

In the sizing exercise, Helen might report that the new server can be procured, installed, tested and be operation in 45 days elapsed time, and 20 hours of actual level of effort. The PM could record and track at that task level. Helen, herself, might track a little more detail, such as:

- complete the PO
- received the hardware
- Install in rack, after procuring power, cabling, IP address, etc.
- Install OS
- Install application software and integrated with existing system.

Assuming Helen has a high capability maturity level on this type of work and has done it before, she might report overall progress as "Everything is on track. I've completed the PO, power, cabling and IP are in progress." She might just report, "Everything is on schedule on this task", which is acceptable.

This could be captured in the status meeting notes, and on the overall project's management reporting process, only "Task 4.3.1 is on schedule."

The point is to avoid 'high ceremony' make work in unnecessary detail, while proving good enough tracking and reporting. Tools and processes are not an end in themselves, but used to document, track, and most of all complete the work properly and professionally.

All of this said, different project mangers might be comfortable with different approaches and tracking vigor, which is OK. The important thing is that it is effective, and that tracking will catch any work or step that is failing or in trouble and which can cause problems for the overall project.

The project management workbook is a handy tool that allow the Project manager to track project activities, tasks, issues, risks and other project in-flight process. Putting these in different tabs of one Excel workbooks makes it easier for the PM to work with one file, rather than bouncing around to multiple files to update different dimensions of the project.

5.4.1 GANTT CHART

The Gantt chart is a high level reporting tool in which subordinate tasks and activities are rolled up into a large stage or period of a project.

Project Gantt
From 1st Feb 2007 – 31st Aug 2007

	Feb	Mar	Apr	May	Jun	Jul	Aug
Identify Customers							
Survey 50 Customers							
Interpret Requirements							
Study Competition							
Documentation of features							
Brainstorm concepts							
Design & Code							
Testing / QA							
Documentation of product							
Global Release							
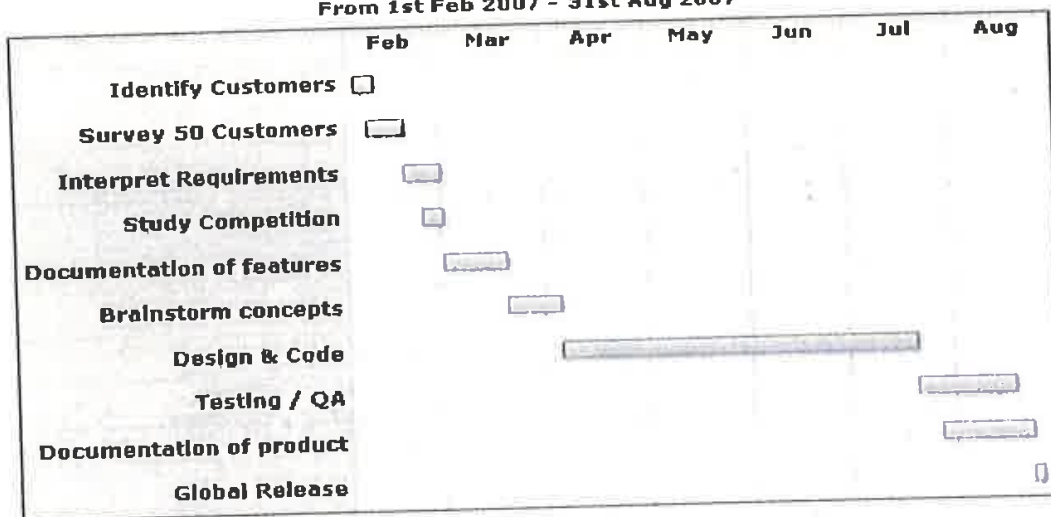
Microsoft Project's Gantt Chart view is often used in listing a long list of project activities. Though when this is combined with adding dependency lines between tasks, the view can be complex, or become 'high ceremony.'

PERT/CPM Chart - PC Card

1	Start project	
2	All specs finalized	
3	Hardware design completed	
4	Manual layout completed	
5	Breadboard running	
6	Hardware fully functional	
7	PC Board released	
8	Software finished	
9	Manual finalized	
10	Manual ready for printer	
11	Project complete	

Critical path
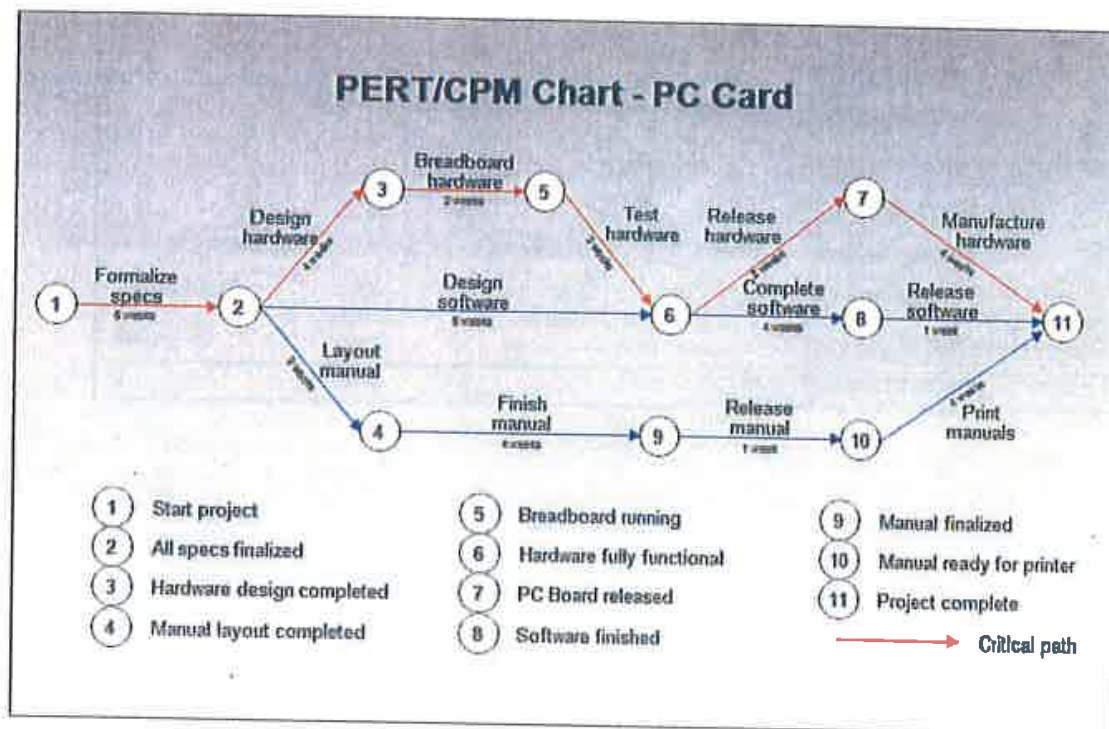
5.4.2   Pert Chart

The Pert Chart, or NetWork diagram, shown above, provides another view of major project activities, and their dependencies. An advantage of this view is that multiple tasks that follow each other can all be shown horizontally across on a single 'row.' This avoids the MS Project Gantt chart complex maze of lines up and down between tasks, each of which must be listed on a separate horizontal row.

A time dimension can be added to the Pert Chart from left to right, with a vertical line showing the current date, providing a quick comprehensive high level view of major project activities
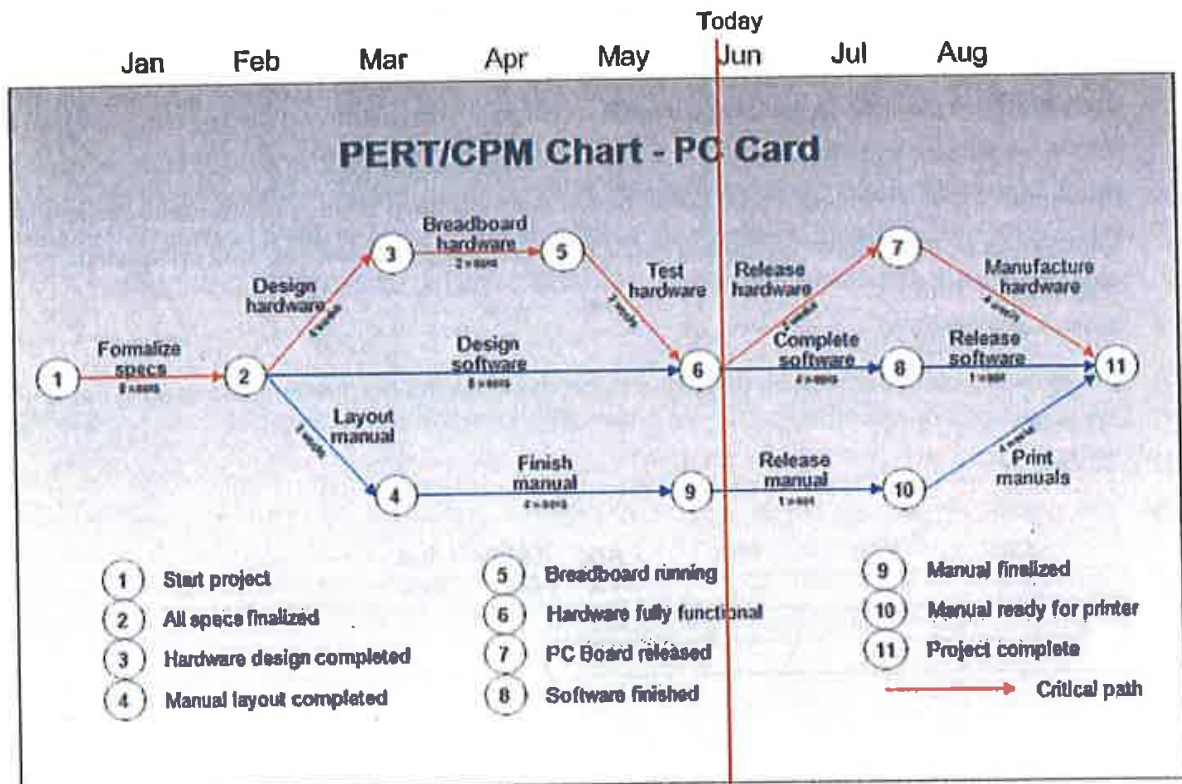
5.4.3   Burn Rate

High maturity very large projects sometimes use Earned Value Management (EV) to measure and monitor a project's actual performance compared to the planned performance, in terms of scope, schedule, and cost. Early use of and studies on EV by the Federal Government in the

1950s and the Polaris Missile project showed that after 15% of project effort, EV could accurately predict future project performance.

Because project metrics include, costs, in the US in dollars, time in days, weeks, months for example and scope, or work to be done, all different units of measure, EV translates these different dimensions into a single unit of measure, money, or dollars – costs. Thus, scope is the amount of work to be done measured in dollar costs. Schedule is converted into the amount of work in dollars planned to completed in a time period. For example, in time period x, $10,000 of work is scheduled to be completed. The last metric, costs or budget, is already in the single standard EV metric, dollars. In any given period x dollars have been spent (burned) to complete y amount of work (in dollars). The key to EV is measuring the amount of work completed, measured in $dollars.

This is background information only, for a background on the burn rate metric used in the SFPD – IT PMO.
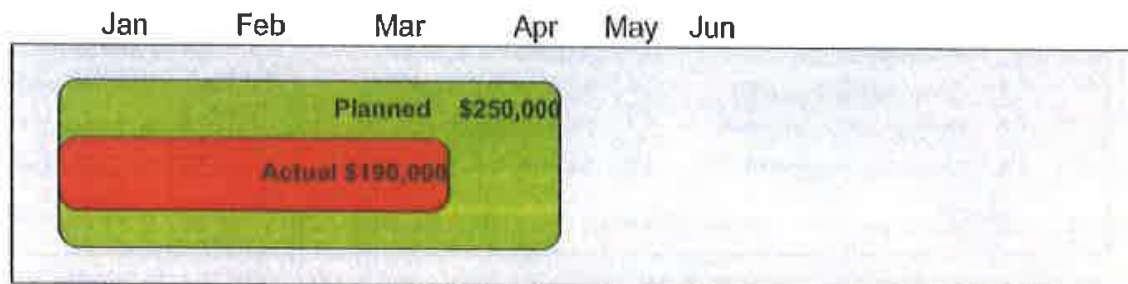
Graphically, we see in this example that as of April, we have spent about $60K less than expected (planned or scheduled). This is limited information because there are many reasons this may be the case, late invoices, larger expenses happening in May, resources have not been working on the project, for example. But if these factors are not present, or have been excluded, one might want to look closer. This simple 'burn rate' metric is useful in managing that all the budgeted money is spent, but not more, important in some situations.

A simpler rendition of burn rate is just written figures:

Total Budgeted	4/1/14 Actual to Date	Balance
$250,000	$190,000	$60,000

PMO Templates for reporting project status have sections for reporting burn rate.

Milestone C Review

- ## Review Project Plan

- ## Verify Solution

- ## Milestone C, Deployment, Approval

  ### Decision

  Approval to move to next stage request

  Return to previous state (gaps)

  Proceed with remediation

  Other

Milestone C review is held when the solution has been developed and is ready for deployment, perhaps an Implementation Readiness Review.

Closing Phase

Environment
Regulations, PMO, Key Controls,

Inputs	Activities	Outputs
• Completion of Project Work	➢ Acceptance of Project Work ➢ Hand off plan ➢ Transition to Operations	Hand off Close out documentation

Enablers
Customer, Enterprise Operations
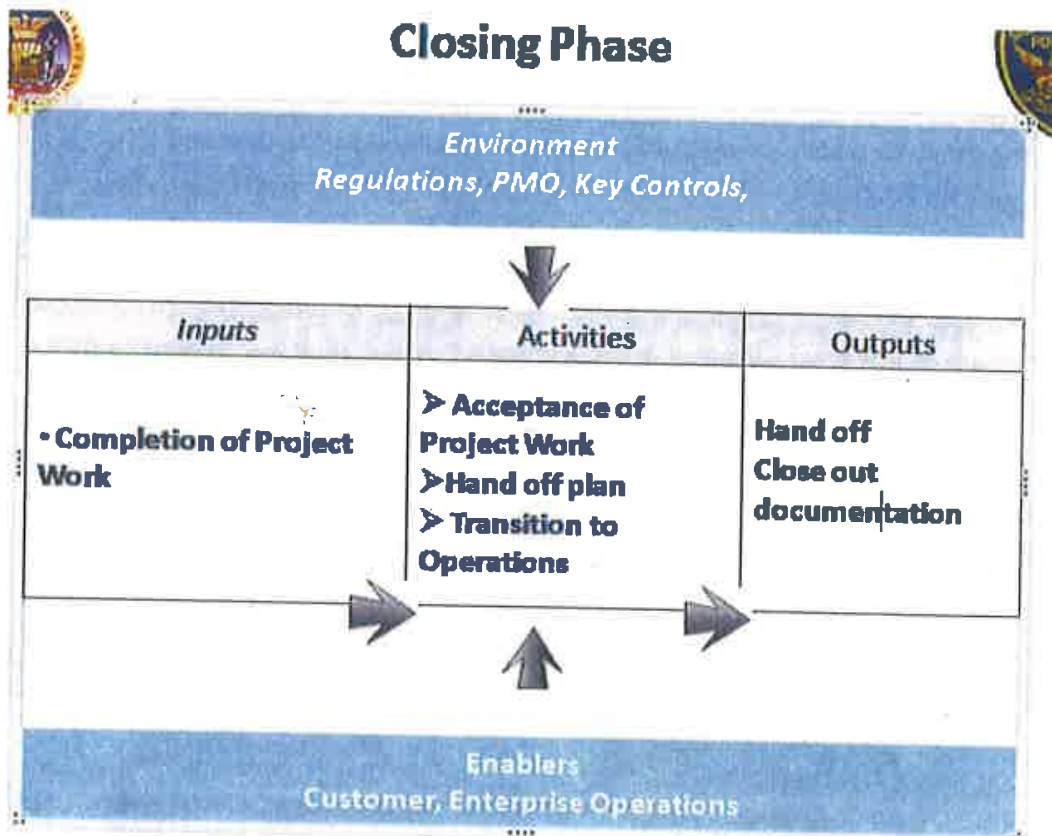
5. Closing Phase

In the closing phase, documented acceptance to the project's work is completed, and the work products are handed off to operations or another appropriate unit, A close out letter or email is generated. Lessons learned, or knowledge capture are also useful steps in project closure.

Milestone D Review

- Operations Readiness Review
- User Acceptance Review
- Move to Operations

Decision
Approval to move to next stage request
Return to previous state (gaps)
Proceed with remediation
Other

Conclusion

Needless to say, moving the SFPD IT project management capabilities and performance to even higher levels requires buy in and participation in the agreed upon processes. Formal project management, with its standard vocabulary, understood roles and responsibilities, and repeatable processes, has consistently proven over time, in many industries and settings, to improve outcomes and results in a variety of settings. PMO policies and procedures are to be tailored and scaled in use appropriate to the size and complexity of

the project, and are meant to serve us, the SFPD IT team, not to be our masters, and help us provide the best IT project management we can.

SFPD IT PMO, Project Life Cycle Framework – Draft 2, May 15, 2014

Information Technology Division

Swimlanes: Environment | Stakeholders | PMO & PM | Operation/Business as Usual (BAU) | IT CIO & Tech Steering Committee | Organization

Start

Need, Risk, Opportunity, Identified by SFPD Member

i.e > 40hrs, or $100K, compliance, unique work?

Sent to CIO for Review

Project? — No → Work Performed as Business as Usual

Yes

Proj Brief Approved by CIO? — No

Yes

Proj Charter Approved by CIO — No

Yes

IT Policies/ Standards/ Regulations

State, Federal, City Laws, Regulations, Compliance, Mandates, Vend...

Change, Activities, Risks, Opportunities, Requirements

Schedule, Activities, Risk, Funding, Management Pl...

Project Brief Created

Project Charter Created

Enter Execution Phase

Operation (BAU) Resources Used

Plan/Detail Design

Build Test

Design Reviews, Readiness Reviews

Execution phase, milestones, review gates, managed by PM, working with project team

Status Reports, Milestones, Reviews, Go/No Go Control Gates

Go/No Go Review, Pause, Cancel?

Integration/Test

Vendor Engagement

IT Resources

$$ Specific Project Funding

Hand Off to Operations

Project Close Out

Results — Results — Results — Results — Results