



# Project Management

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# Project Management

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## *What is a project?*

### *Project Management is defined as:*

applying knowledge, skills, tools, and techniques to project activities in order to meet project requirements. (A Guide to the Project Management Body of Knowledge Third Edition; Project Management Institute)

*Types of Projects that need Formal Project Management:*

*Types of Projects that do NOT need formal Project Management:*

## *What are some common challenges to managing projects?*

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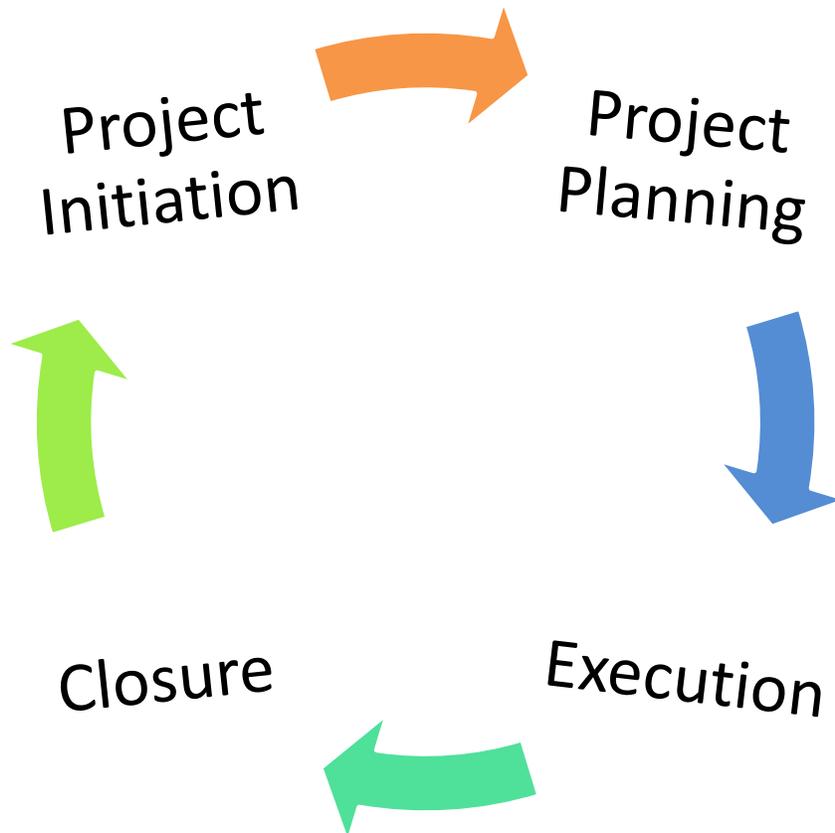
# Checklist

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- Project Need Assessment
- Project Charter or Framework
- Considerations: Scope and Constraints
- Work Breakdown Structure
- Schedule
- Resource Estimates
- Risk Assessment
- Implementation Tools
- Evaluation Plan

# Project Lifecycle

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Source: <http://www.method123.com/project-lifecycle.php>

# Assessing the Need

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***Projects are not “solutions” in need of a problem.***

In a project initiation phase, you start by understanding and describing the need, problem, or opportunity. As you begin the project development or proposal, spend some time working through “justification” of this project. *Consider the following questions:*

- 1) What is the problem/issue?***
- 2) What is the underlying cause/reason for this problem?***
- 3) Is there an opportunity for improvement (what are potential solutions/approaches – which best fits)?***
- 4) What happens if we don't provide develop this project (are there any consequences)?***
- 5) Is anyone else providing this type of service/project that we should consider (partners; competition)?***

In your group, answer the needs assessment questions using the following example scenario:

## **SCENARIO:**

Zebra mussels have just been discovered in Little Finger Lake. Many of the citizens and partners in the area are concerned that the Zebra Mussels will spread to Big Toe Lake, the largest lake in the County. Your organization includes the lakes and you are considering a project aimed at reducing the likelihood of Zebra Mussels being introduced into Big Toe Lake.

# Project Charter or Framework

<b>1. Project Title:</b>	<i>Simple and explanatory title</i>															
<b>2. Project Definition:</b>	<i>One to two sentences that explain the project or its main purpose.</i>															
<b>3. Need Justification:</b> <b>Define the problem, need, or issue:</b>	<i>Use your needs assessment from the previous page to fill out this section. As you think about the need for this project, consider the following questions: 1) Is there a problem? 2) Is there an opportunity for improvement? 3) Are there consequences if the project isn't done? 4) Is anyone else providing this type of service/product?</i>															
<b>4. Outcome Objectives for the Project:</b>	<i>What do you want to be different as a result of this work? The objectives should be directly related to the problem, issue, or need, and should include an action word (improve, increase, stop, create, prevent, etc.)</i>															
<b>5. Stakeholders and Customers:</b>	<i>Be specific – who is your target audience, there may be more than one. Think about who benefits from the project, and who is affected.</i>															
<b>6. Project Sponsor:</b>	<i>Who has the final say in the project? Who are you accountable to? Who takes the blame if things go wrong?</i>															
<b>7. Work Team:</b>	<p><i>Who is going be working on this project. Include names and contact information. Create a list with contact/role information.</i></p> <table border="1"> <thead> <tr> <th><b>Name</b></th> <th><b>Role</b></th> <th><b>Organization/Dept.</b></th> <th><b>Phone</b></th> <th><b>Email</b></th> </tr> </thead> <tbody> <tr> <td><i>Bob</i></td> <td><i>Project Leader</i></td> <td></td> <td></td> <td></td> </tr> <tr> <td><i>Jenny</i></td> <td><i>Designer</i></td> <td><i>Design</i></td> <td><i>867-5309</i></td> <td><i>jenny@acme.com</i></td> </tr> </tbody> </table>	<b>Name</b>	<b>Role</b>	<b>Organization/Dept.</b>	<b>Phone</b>	<b>Email</b>	<i>Bob</i>	<i>Project Leader</i>				<i>Jenny</i>	<i>Designer</i>	<i>Design</i>	<i>867-5309</i>	<i>jenny@acme.com</i>
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<b>8. Deliverables:</b>	<i>What specific, tangible products or services will result from this project?</i>															
<b>9. Estimate Timeline:</b>  <b>And Key milestones:</b>	<p><i>When does the project need to be complete? Is your timeline the same as your clientele's? As your funder's?</i></p> <p><i>Project Started on October XX, 2010;</i>  <i>Phase I Complete: Date</i>  <i>Phase II Complete: Date</i></p>															
<b>10. Project Budget:</b>	<i>Note overall Costs and funding sources here.</i>															
<b>11. Evaluation:</b>	<i>How and when will you evaluate progress as the project going on?</i>															

# Project Charter or Framework

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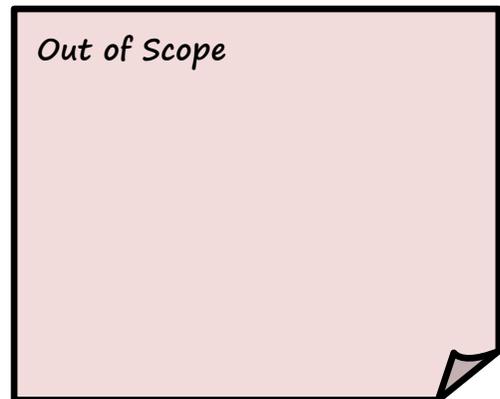
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# Project Considerations

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## *Assumptions and Change Theory: (If/then)*

### *Scope:*



### *Constraints:*

### *The Wiggle Matrix:*

	Scope of Project (Extent)	Project Budget (Resources)	Timing (Schedule)
Most Wiggle Room			
Some Wiggle Room			
Little to No Wiggle Room			

# Work Breakdown Structure

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***A Work Breakdown Structure is:*** organizing or grouping the deliverables and tasks for the project. Work Breakdown structures allow the project manager to manage the project more effectively by identifying the tasks required to complete the deliverables.

## ***Work Breakdown Structures:***

- Organize and further define the scope of the project
- Include Deliverables and Tasks:
  - **Deliverable:** The tangible products or services that will result from the project.
  - **Tasks:** The activities necessary to complete each deliverable.
- Subdivide the deliverables into smaller, more manageable pieces of work
  - The descending levels create more detailed definitions of the project deliverables and the work needed to complete those deliverables
  - The number of levels in a work breakdown structure is differs according to the size and type of the project, as well as the needs of the project manager

*Source: PM and Meeting Management – August 2011, Fissure*

## ***Level of Detail***

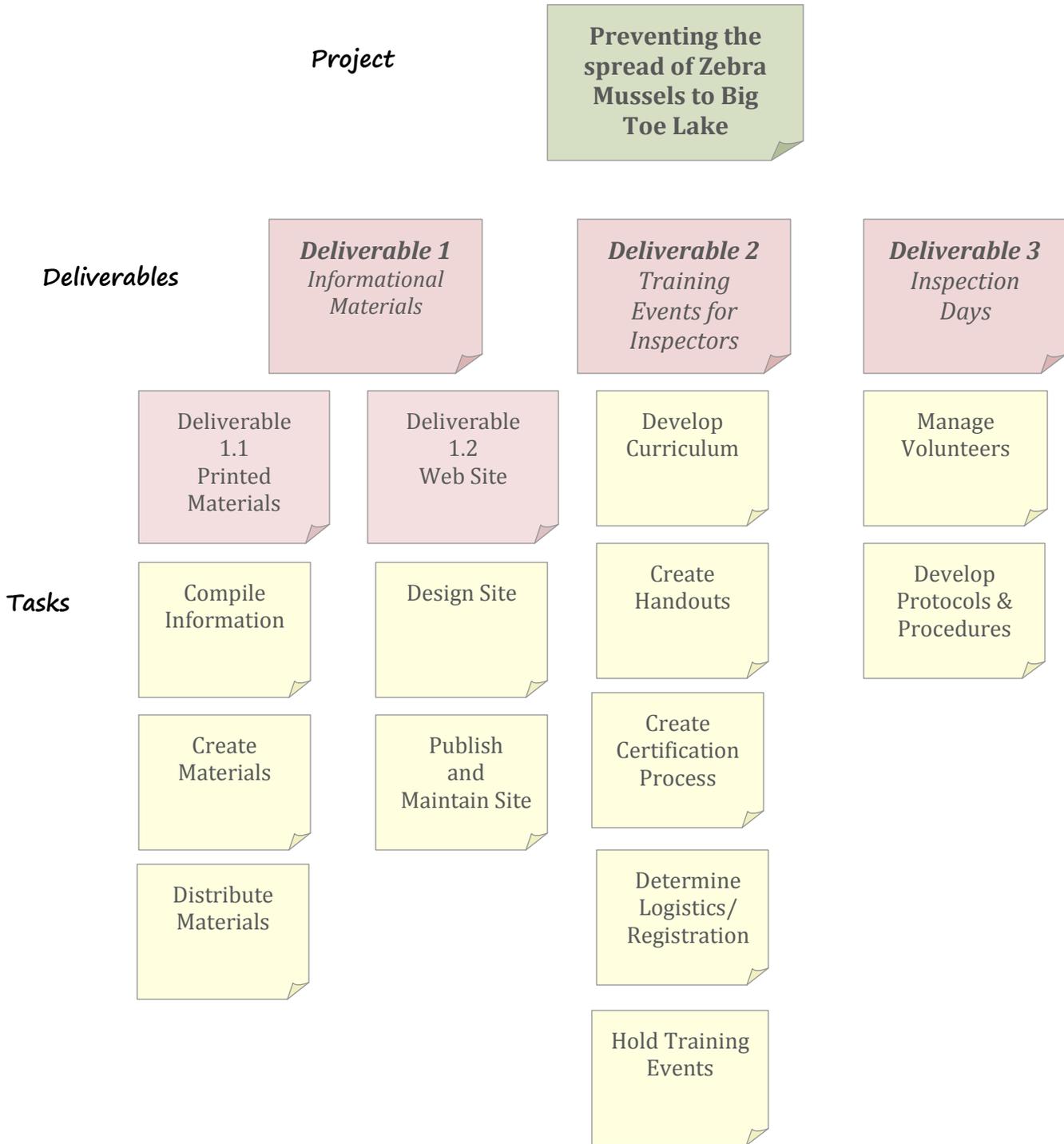
The level of detail within a WBS is up to the project manager, but some general rules should be considered. There is no “one size fits all”, but in general, work should continue to be broken down until:

- One owner can be assigned to a task
- The deliverable is clear
- 8:80 rule; Task less than 8 hours generally can be lumped into something else and tasks more than 80 hours probably need further clarification.
- The activity can be tracked and managed.

*Source: A Guide to the Project Management Body of Knowledge Third Edition; Project Management Institute*

# Work Breakdown Structure Example

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# Work Breakdown Structure

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*Project*

*Deliverables*

*Tasks*

# Schedule

## Dependencies

*Sometimes, one task must be started or completed before another can begin.*

*Make sure to note dependencies in your schedule.*

Scheduling methods can range from simple to detailed, and will vary based on the size and complexity of the project. With your work team, use the deliverables and tasks identified in the work breakdown structure to create the schedule using one or more of the following methods.

## ***I. Preliminary Scheduling***

Used when you want to get an understanding of the project time frame and the relationships between activities. Preliminary scheduling does not focus on dates, budgets or resources.

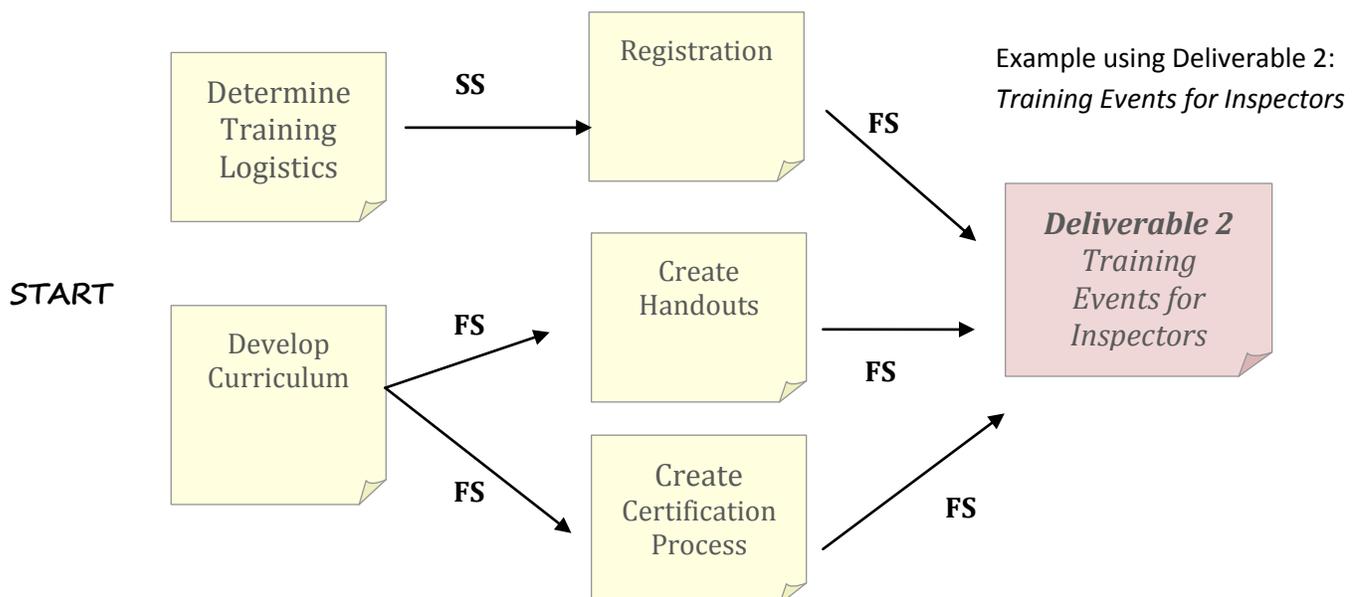
## ***Steps for Preliminary Scheduling***

- 1) Make duplicates of the lowest level activities from the work breakdown structure
- 2) Using white board or flip chart, stick all lowest level activities on the wall.
- 3) Look for tasks that have no dependencies, and place those near the start milestone
- 4) For each of the "start" tasks, after it is done, what task can follow? Place these tasks after the previous one and draw arrows to indicate the sequence of the work.

## Types of Dependencies

***FS = finish to start***

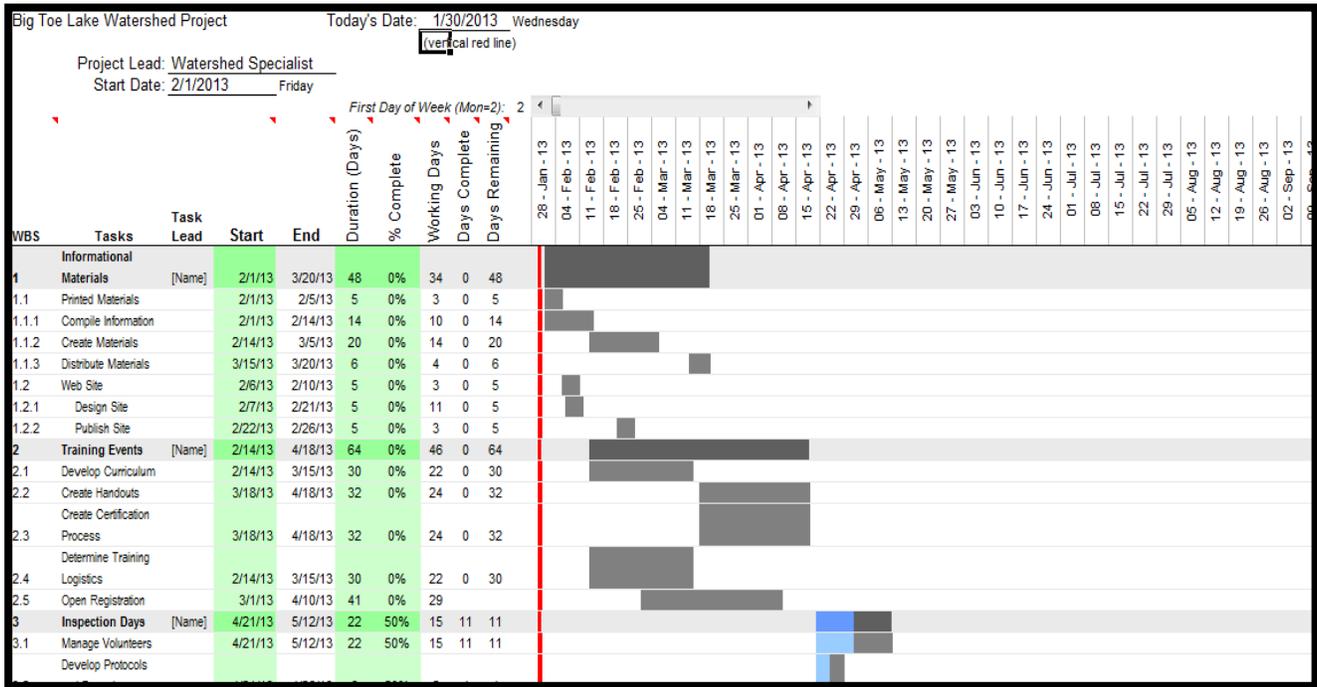
***SS = start to start***



# Schedule

Free Excel Gantt Template!  
[http://download.cnet.com/Gantt-Chart-Template-for-Excel/3000-2076\\_4-75326607.html?tag=bc](http://download.cnet.com/Gantt-Chart-Template-for-Excel/3000-2076_4-75326607.html?tag=bc)

**II. Gantt Chart** – provides graphic display of the schedule, with dates. Shows what parts of the project can occur independently, and which have dependencies.



**III. Critical Path Analysis** – used to determine scheduling flexibility and project duration. Demonstrates dependencies and durations of activities.

Figure 1. Task List: Planning a custom-written computer project

Task	Earliest start	Length	Type	Dependent on...
A. High level analysis	Week 0	1 week	Sequential	
B. Selection of hardware platform	Week 1	1 day	Sequential	A
C. Installation and commissioning of hardware	Week 1.2	2 weeks	Parallel	B
D. Detailed analysis of core modules	Week 1	2 weeks	Sequential	A
E. Detailed analysis of supporting modules	Week 3	2 weeks	Sequential	D
F. Programming of core modules	Week 3	2 weeks	Sequential	D
G. Programming of supporting modules	Week 5	3 weeks	Sequential	E
H. Quality assurance of core modules	Week 5	1 week	Sequential	F
I. Quality assurance of supporting modules	Week 8	1 week	Sequential	G
J. Core module training	Week 6	1 day	Parallel	C,H
K. Development and QA of accounting reporting	Week 5	1 week	Parallel	E
L. Development and QA of management reporting	Week 5	1 week	Parallel	E
M. Development of Management Information System	Week 6	1 week	Sequential	L
N. Detailed training	Week 9	1 week	Sequential	I, J, K, M

Source and Excellent Resource for finding out more about the Critical Path Method.  
<http://www.mindtools.com/critpath.html>

# Schedule

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**IV. Reverse Scheduling:** Scheduling backward from final product to project start provides a better sense of the length of time necessary to complete major activities. Provides an easy, practical method to understanding the total timeframe needed to complete a project.

Calendar Planning				
Date	Weeks Prior to Deliverable	Key Deadline/Milestone	Who	Status
02/03/13	13 weeks out	Project Begins	Team	done
02/06/13	12.5 weeks out	Website Designer Hired	Jenny	done
02/10/13	12 weeks out	Start Design For Recruitment Materials	Bob	In progress
02/17/13	11 weeks out	Website Design Finalized and Published		
03/05/13	9.5 weeks out	Recruitment Materials Sent for Printing		
03/17/13	8 weeks out	Training Registration Opens		
03/15/13	8 weeks out	Begin developing training curriculum and handouts		
03/15/13	8 weeks out	Training Logistics Set		
04/04/13	5.5 weeks out	Training Curriculum and Handouts Finalized		
04/14/13	4 weeks out	Certification Process Created and Approved		
04/14/13	4 weeks out	Registration Closed		
04/18/13	3.5 weeks out	Training Handouts and Materials Printed		
04/21/13	3 weeks out	Volunteer Training and Certification Training Held		
04/28/13	2 weeks out	Volunteer Schedule and Protocols Complete, Distributed		
05/05/13	1 week out	Email and/or phone calls to remind volunteers		
05/12/13	0	Inspections Begin		

 **start here!**



# Resource Estimates

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Once deliverables and major tasks are identified, we estimate the resources needed. We can think about resources in two key ways:



## *Time & Budget*



While we're all likely familiar with budget estimates (supplies, staff salary & benefits, travel, program materials, capital equipment costs etc.) time estimates may be less common.

***What limits your ability to develop “good” time and budget project estimations?***

# Developing Estimates

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- Use your work breakdown structure or your schedule to get more specific. Estimate the time it will take for the smaller tasks to get a better overall estimate.
- Analogous estimates use and adjust past project estimates and actuals.
- Parametric estimates use high level input for repeatable tasks/activities.
- Ask others who have done similar projects
- Ask those that will do the work.
- Don't forget about your own experience and BPJ (best professional judgment)! Do you tend to overestimate or under-estimate time needed? Take this into account as you develop your estimates.

Make sure you've accounted for both DURATION (the amount of calendar time it takes to complete a task) and EFFORT (the actual amount of work in labor hours).

**Duration** =  $\frac{\text{Effort (labor hours)}}{\text{Units (% of available time)}}$   
(calendar time)

# Developing Estimates

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Estimates will help feed your overall project budget. As you know, project budget formats vary depending on requirements of the funder, level of detail needed, and your own accounting software. Therefore, we won't spend time on the budget formats here, instead focusing on the estimates you use to help develop your budget. Use the work breakdown structure to help with estimates!

	<b>Deliverable/Task:</b>	<b>Staff Cost</b>	
	<b>#2 Training Events</b>	<b>Description</b>	<b>\$\$</b>
1	Develop Curriculum	FTE-A 80 hrs @ \$25/hr salary + benefits	2000
2	Create Handouts	FTE-A 15 hrs @ \$25/hr salary + benefits	375
3	Create Certification Process	FTE-A 25 hrs @ \$25/hr salary + benefits	675
4	Logistics/Registration	FTE-B 40 hrs @ \$15/hr salary + benefits; FTE-A 15 hrs @ \$25/hr salary + benefits	975
5	Hold Training Events	3 events @ 10 hrs/event = FTE-A 30 hrs x \$25; FTE-B 30 hrs @ \$15	1,200
	<b>Total Estimates:</b>	<b>Staff:</b>	<b>\$5,225</b>

We found that estimating staff time at the task level is usually most helpful, but for other budget categories such as supplies, copying, etc., it may be enough to estimate only at the major deliverable level:

	<b>Deliverable</b>	<b>Staff</b>	<b>Copying</b>	<b>Supplies</b>	<b>Continue with categories that best fit your project</b>
1	Informational Materials				
2	Training Events	<b>5,225</b>			
3	Inspection Days				
4	Evaluation				
	<b>Total Estimates:</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>

# Risk Assessment

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## *Risk Management has three key steps:*

- Determining potential risks
- Prioritize which are mostly likely “high risk” to your project
- Developing a either a prevention sketch or contingency sketch as needed

## *Involve your Team!*

A good brainstorming session can help flesh out risk. Use the same categories in your “wiggle matrix” to outline risks:

Scope of Project (Extent)	Project Budget (Resources)	Timing (Schedule)

You might be able to prioritize this list right away. If not, project management experts suggest quantifying risk using IMPACT if it occurs (time, scope, money) and LIKELIHOOD of the risk happening. Consider a simple 1-5 scale (1 = low risk and 5 = high risk). The higher the overall risk, the greater the need to develop a course of action.

Risk	Impact	x	Likelihood	=	Overall Risk
Unreliable vendor	3	x	2	=	6
Inexperienced volunteer inspectors	5	x	3	=	15
		x		=	
		x		=	
		x		=	

Finally; think about if these are best served by a PREVENTION or CONTINGENCY approach. For example, if we’re most worried about inexperienced volunteer inspectors, prevention may be best – make sure that you know their skills set at the end of a training session or have them practice before being on their own. A contingency sketch for an unreliable vendor may be enough, where you know that you’ve got two other vendors you can call in a pinch.

# Implementation Tips

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The following items are tools for your Project Management toolbox. These items will help you track major milestones, communication events, and incidents related to the project. As with some of the other Project Management pieces, you may not need them for every project, but when used they will help you stay organized and meet deadlines.

**1. Communication Plan** – can be used to plan and track outreach/communication events pertaining to the project.

**2. Milestone Tracking Form** – track major milestones, and note reasons or incidents that led to missing deadlines

**3. Issue Tracking Form** – track major issues, problems or complaints that arise during the project. Particularly useful for difficult or controversial projects.

**4. Meeting Management** (see handout) – help focus meetings and determine when and how they should be held.

An example of each of these implementation tools follows.

# Communication Plan

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Project Name:

Project Manager:

Date:

Key Message	Purpose or Objective	Target Audience	Format or Type	Timing or Frequency	Due Date	Assigned to?

# Milestone Tracking Form

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Project Name:

Project Manager:

Date:

Milestone	Projected Completion Date	Hit or Miss?	If Milestone is Missed, Why?	Action to Correct

# Issue Tracking Form

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Project Name:

Project Manager:

Date:

Date	Issue	Initiator	Action Needed	Assigned to	Due Date	Status	Comments

# Evaluation

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The best time to think about evaluation is during project development, rather than waiting until the end of a project. You may want to collect baseline data or think about who you need to involve early on. An evaluation plan can be a simple 1-2 page document that outlines your future approach to evaluation. It often includes:

## I. Purpose and Scope of Evaluation

- What are you going to evaluate – the internal processes? results?
- What aren't you going to evaluate?
- How will you use the evaluation? Who will you share it with?

## II. Evaluation Roles or Team Composition

- Who is responsible for conducting the evaluation (internal/external evaluator)? What experience do they bring? What support will they need to ensure a fair assessment of the program?

## III. Evaluation Questions

- Most evaluation questions stem from these three broad categories:
  - I. **What did the project do?** (activities and participation)
  - II. **How well did we do it?** (assessment of merit/worth)
  - III. **What results did we see?** (change)

## IV. Goals and measurement indicators

- What you measure should be tied directly back to your goals. By their nature, project indicators should be measurable. "Cleaner Water" as a specific project result may be nearly impossible to measure. However, pollution reductions (Tons of soil, etc) may be more realistic.
- Example:

## V. Timeline and Logistics

- Identify when you will evaluate (at the end? Half way through?)
- Are you going to need to develop specific measurement instruments (surveys; mailings; calculations; etc.)?
- Does someone need to approve your evaluation plan?

Remember to include any evaluation activities in your budget.

# Possible Evaluation Questions

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## ***Charter/Framework Elements***

- Were the deliverables well defined?
- Was there input from all stakeholders?
- Did the project stay within the scope?

## ***Communication and Scheduling***

- Was communication adequate?
- Was scheduling realistic?

## ***Design Phase and/or Administrative Elements***

- Did design/administrative information keep ahead of needs?
- Did submittal process flow smoothly? Suggestions for improvement?
- Were input and ideas given appropriate consideration?

## ***Implementation Elements***

- Was the schedule communicated well?
- Well planned?
- Was there adequate input from all parties?

## ***Financial Elements***

- Was funding received as anticipated?
- Were payments made on time?
- Were match requirements met?

## ***Reporting Elements***

- Were reports submitted on time?

## ***Overall Project Issues***

- What went well?
- What did not go well?
- Any outstanding issues?

## ***Lesson Learned***

- How to prevent reoccurrence of the things that did not go well
- How to ensure repeat of things that did go well

*Source: PM and Meeting Management – August 2011, Fissure*

# Notes

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