Project Planning for Future Cities

PRESENTED BY
THE PROJECT MANAGEMENT INSTITUTE
DELAWARE VALLEY CHAPTER &

THE FUTURE CITY COMPETITION
PHILADELPHIA REGION
Project Plan Deliverable - 10 Points

- Set Goals
- Develop a schedule
- Check-in and Report
- Reflect and share what you have learned
- More important! Plan how you will earn the other points

For More information go to the Program Handbook p. 42:

Planning can help you to achieve all your goals
What You Will Learn

➢ How to score the 10 project management points
➢ Setting project goals
➢ Deciding which goals are worth your effort - prioritizing
➢ How to plan ahead
➢ How to break big jobs into smaller objectives
➢ How to follow a plan
➢ How to deal with unknowns
➢ How to adapt to changes
➢ How to make the best use of time and money

Apply the time-tested principles of project management to reach your goals.
Goals and Objectives - “Why?”

• Win the competition?
• Do better than last year?
• Learn about careers?
• Have fun?
• Learn something new?
• Meet other people?
• Travel to the Nationals?
• Add an activity to your resume?
• Collaborate with a group?

Prioritize this list for the Goal section of the Project Plan form

Why are you participating in Future Cities Competition?
Initiating a Project

Think about it
Write it down
Reach agreement

Put the Final Objectives into the Project Plan
Plan: Determine How to Do It

A plan fits the pieces of your project together
Plan Scope “What?”

Define the project’s output in detail

- What are the deliverables?:
  - Project Plan (10 Points)
  - Virtual City Design (48 points)
  - City Essay (60 points)
  - City Model (70 points)
  - City Presentation (70 points)
- Get input from your stakeholders
- “Collect requirements”

Assumptions

- Select only one threat to the water supply
- Includes water storage and transport
- Need two innovations (see p. 30)

Fill-in the assumption section of your plan.
Example Requirements

Scope

– Functional Requirements
  • Resilient water supply for a City
  • Zones (residential, commercial, industrial)
  • Health of residents, including vulnerable populations
  • Last 100 years

– Constraints on how the work must be done
  • The team will work after school
  • Meetings must be at the school with mentors
  • Drafts/prototypes must be reviewed by 12/4/2019
  • Final design must be done by 12/18/2019

Put the constraints and assumptions into the Project Plan form

Fill-in the constraints section of your plan.
Work Breakdown Structure

Resilient City

Virtual City Design
- Create
- Review
- Update

City Essay
- Research
- Write

City Model
- Brainstorm
- Create a Prototype
- Develop final
- Test

City Presentation
- Review Requirements
- Create Outline
- Final Review

Project Plan
- Review Handbook
- Interview Stakeholders
- Create Baseline

Scope

Define the high-level work to be done.
Plan Time - “When?”

- Define the detailed activities for each deliverable
- Put the activities in sequence
- Estimate the calendar time (days or weeks) for each activity
- Create a schedule
- Start thinking about the skills that are needed

Fill-in the schedule part of the Project Plan form

Determine the order and duration of activities.
### Example Activity List

Activities for the “City Essay Research” WBS Element

<table>
<thead>
<tr>
<th>Activity</th>
<th>Labor</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read the rubric</td>
<td>1 hour</td>
<td>Future Cities Handbook</td>
</tr>
<tr>
<td>Brainstorm</td>
<td>3 hour</td>
<td>Project team</td>
</tr>
<tr>
<td>Organize the ideas</td>
<td>2 hours</td>
<td>Brainstorm notes</td>
</tr>
<tr>
<td>Create an outline</td>
<td>2 hours</td>
<td>Ideas, author</td>
</tr>
</tbody>
</table>

Fill-in the schedule section of your project plan
Plan Cost

• Estimate how much each activity will cost

• Include the cost for
  – Labor ← Volunteers/students so $0
  – Supplies ← Provided by the school, parents $0
  – Overhead (like office space and equipment)

• Add the estimates to determine the total cost of your project

Estimate the cost of your project
Plan Cost: Example

<table>
<thead>
<tr>
<th>Activity</th>
<th>Labor</th>
<th>Resources</th>
<th>Labor Cost</th>
<th>Supplies Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sim City model</td>
<td>80 hours</td>
<td>Students, software</td>
<td>$0</td>
<td>$98</td>
</tr>
<tr>
<td>Virtual City design</td>
<td>40 hours</td>
<td>Students, material</td>
<td>$0</td>
<td>none</td>
</tr>
<tr>
<td>Presentation</td>
<td>20 hours</td>
<td>Students, software</td>
<td>$0</td>
<td>none</td>
</tr>
<tr>
<td>Essay</td>
<td>15 hours</td>
<td>Students, software</td>
<td>$0</td>
<td>none</td>
</tr>
</tbody>
</table>

Roll-up the cost of each activity, to the elements, and project.
Plan Quality - “How?”

- Determine what quality means for your project

- Determine how you will ensure quality

Examples

- Quality means:
  - No spelling/language errors
  - SimCity model works
  - The presentation is 7 minutes and free of defects
  - Workmanship of model

- How we will ensure quality:
  - Independent document reviews
  - SimCity model testing
  - Review documents and products for consistency

Ensure your project produces quality outputs.
• Risks are uncertain future events that can affect your project

• There are two types of risks
  – Threats have a negative impact on your project
  – Opportunities have a positive impact on your project

If you know about a risk, you can manage it.
Plan Risk

Identify
- Talk to others
- Make a list

Assess
- Probability – How likely is it to happen?
- Impact – How big of an effect will it have?

Plan
- Include activities to change probability
- Include activities to change impact
- Include cost or time buffers

Take initiative to reduce threats and increase opportunities!
## Plan Risk: Example

**Risk**

<table>
<thead>
<tr>
<th>Risk</th>
<th>Probability</th>
<th>Impact</th>
<th>Owner</th>
<th>Action Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>SimCity does not work</td>
<td>Medium</td>
<td>High</td>
<td>Bob</td>
<td>Obtain and expert</td>
</tr>
<tr>
<td>Content for Presentation</td>
<td>High</td>
<td>Med</td>
<td>Joe</td>
<td>Review a prototype</td>
</tr>
<tr>
<td>City design is not practical</td>
<td>Medium</td>
<td>Med</td>
<td>Bob</td>
<td>Review existing technology</td>
</tr>
<tr>
<td>Mentor busy in work</td>
<td>Medium</td>
<td>Med</td>
<td>Jane</td>
<td>Identify additional mentors, talk to other teams</td>
</tr>
<tr>
<td>Judges do not like deliverables</td>
<td>Low</td>
<td>High</td>
<td>Joe</td>
<td>Discuss approach with other team leaders</td>
</tr>
</tbody>
</table>

Be proactive – stop problems before they happen!
Plan Purchasing

- Determine what goods and services you need
- Determine how you will acquire them

Examples

- What you need:
  - Model material
  - Computers
  - Software
  - Experts

- How to acquire:
  - Stores
  - On-line
  - School
  - Volunteer

Have what you need at the time that you need it.
Plan People - “Who?”

- Acquire your project team
- Assign your project team members to roles
- Assign your project team members to activities
- Train your project team
- Determine how you will motivate and reward your team

Fill-in the Resources section of the Project Plan.
Organize your team for roles and activities.

Responsibility Assignment Matrix

<table>
<thead>
<tr>
<th>Activity</th>
<th>Team Members</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Joe</td>
</tr>
<tr>
<td>Essay</td>
<td>P</td>
</tr>
<tr>
<td>Plan</td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>S</td>
</tr>
<tr>
<td>Presentation</td>
<td>P</td>
</tr>
</tbody>
</table>

P=Primary Responsibility
S=Secondary Responsibility
• Communication is essential for project success

• Poor communication can cause:
  – Misunderstandings
  – Wasted time and effort
  – Low project team morale

90% of a project manager’s time is spent communicating.
<table>
<thead>
<tr>
<th>Purpose</th>
<th>Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hear what others are really saying</td>
<td>Active listening</td>
</tr>
<tr>
<td>Understand and uncover deeper meaning</td>
<td>Questioning and probing</td>
</tr>
<tr>
<td>Tell others what they can expect</td>
<td>Setting and managing expectations</td>
</tr>
<tr>
<td>Increase knowledge</td>
<td>Educating</td>
</tr>
<tr>
<td>Improve performance</td>
<td>Coaching</td>
</tr>
<tr>
<td>Convince others to act</td>
<td>Persuading</td>
</tr>
<tr>
<td>Encourage the team</td>
<td>Motivating</td>
</tr>
<tr>
<td>Minimize disruption due to conflicts</td>
<td>Resolving conflict</td>
</tr>
</tbody>
</table>

Use the skill to achieve the results you want
## Plan Communication: Example

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Frequency</th>
<th>Type</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Judge</td>
<td>Once</td>
<td>Written</td>
<td>The essay provides a description of how the water supply is resilient</td>
</tr>
<tr>
<td>Team</td>
<td>Daily</td>
<td>Oral</td>
<td>Overall plan for the project and daily updates as project progresses</td>
</tr>
<tr>
<td>Team</td>
<td>Once</td>
<td>Demonstration</td>
<td>Instruct team on the design for water storage and distribution</td>
</tr>
<tr>
<td>Mentor</td>
<td>Daily</td>
<td>Oral</td>
<td>Provide updates on the progress of the project at the end of each day and if there are any issues with completion</td>
</tr>
</tbody>
</table>
More About Plans

• Write down your plan
• Compare your plan to your Project Objectives and address differences
• Get agreement from stakeholders
  • Sponsor
  • Mentors
  • Project Manager
  • Project Team
• Measure your project progress against your plan
• Know that your plan will change

Your plan is an agreement of how to accomplish your goal.
Plan: Determine How to Do It

An integrated plan shows you how to reach your goal.
Now that you have a plan, follow it.
Execute – Project Manager’s Role

The Project Manager has overall responsibility for the project.

Project Manager

• Carry out your plan
• Organize and train the project team
• Assign work to the project team
• Direct and manage the team’s activities
• Communicate with stakeholders
• Measure your progress against your plan
• Measure quality against your plan
Execute – Other Roles

- **Project Team**
  - Does the work

- **Sponsor**
  - Funds the project
  - Promotes the project

- **Stakeholders**
  - Stay informed and engaged

People are the key to success!
Execute

- Scope
- Time
- Cost
- Quality

- Product
- Service
- Result

A good plan makes executing easier.
Monitor and Control

Update the Check-in section of the project plan.

Monitor and Control

Initiate

Decide to do it

Determine how to do it

Adapt to change

Plan

Execute

Close

Wrap it up

Do it
Recognize Change

1. Recognize that change is happening
2. Uncover the cause of the change
3. Adjust your plan
4. Decide what to do
5. Execute your adjusted plan

Recognize Change
Making a Decision

- Recommend action
  - Corrective action
  - Preventative action
  - Defect repair

- Get agreement
  - Talk to the people who are affected

- Accept or reject the change
  - Write down the decision

Control the change – don’t let it control you.
Adjust Your Plan

- Determine how your decision affects each aspect of your plan.
- Adjust your plan to reflect the change.
- Involve stakeholders in the process.

Keep your plan up-to-date with your decisions.
Close

Monitor and Control

Initiate
- Decide to do it
- Adapt to change

Plan
- Determine how to do it
- Do it

Execute
- Close
- Wrap it up

Cross the finish line!
Close: Wrap It Up

Confirm that the project is finished

• Make sure that the plan’s scope is complete
• Make sure that the plan’s activities are complete
• Make sure that the plan’s outputs are produced and accepted

Collect records

• Save records that can help a future project
• Gather lessons learned and save them for the future

Satisfy stakeholders

• Turn over the project’s output to whoever will use it
• Make sure deliverables and supplies are inventoried
• Get agreement that everything is finished
• Celebrate and thank everyone!
Close: Lessons Learned

• Talk to everyone involved and get honest feedback
  – What went well
  – What you could improve next time
  – What you achieved

• Write it down so you remember it for the next project

Update the Reflect section of the Project Plan
• From the Handbook, p. 24:

“We created an awesome city because we took the time to think about our goals and came up with a clear plan.”

-Student Participant
Who We Are

• **Project Management Institute**
  • The PMI is an international organization founded to:
  • Promote professional project management principles and techniques;
  • Create and deliver an educational program that strengthens local project management professionals' skills;
  • Provide world-class PMI certification and training

• **Delaware Valley Chapter**
  • The local PMI chapter serving the Greater Philadelphia area, South Jersey, Delaware, Eastern Shore Maryland.
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