



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:

<https://futurecity.org/2019-2020-future-city-program-handbook>

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

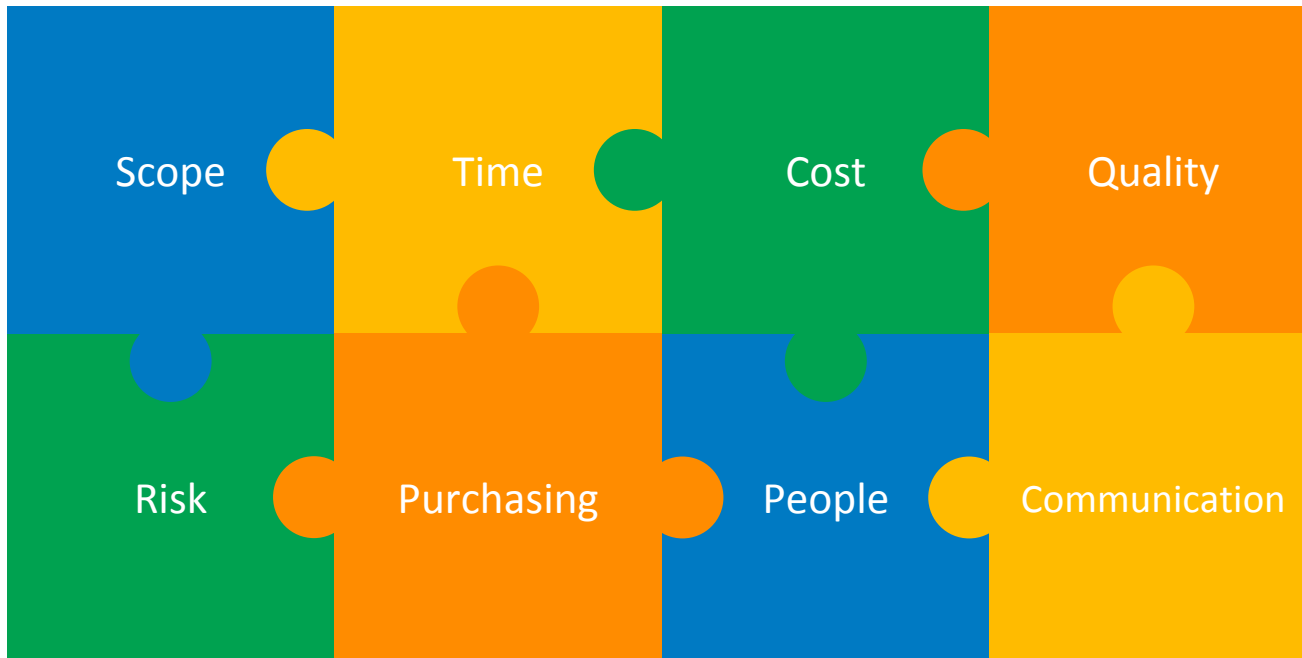
Think
about it

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

Scope

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.

Scope

Example Requirements



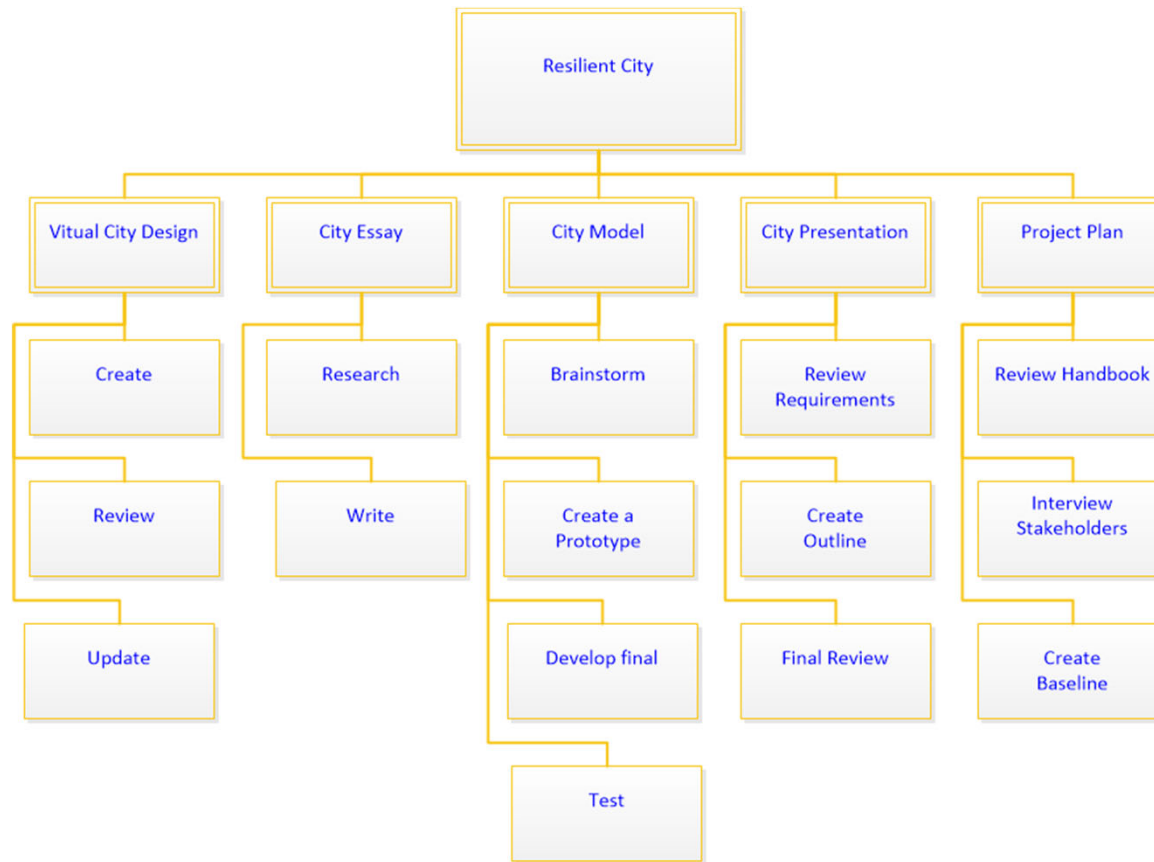
- Functional Requirements
 - Resilient water supply for a City
 - Zones (residential, commercial, industrial)
 - Health of residents, including vulnerable populations
 - Last 100 years
- Constraints on how the work must be done
 - The team will work after school
 - Meetings must be at the school with 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

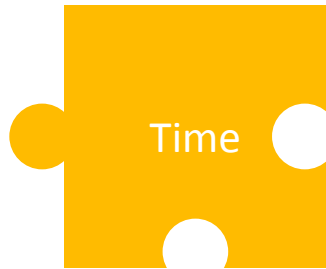
Fill-in the constraints section of your plan.

Scope

Work Breakdown Structure



Define the high-level work to be done.



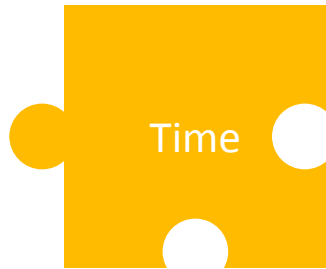
Plan Time - "When?"



- 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.



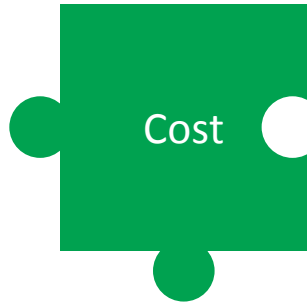
Example Activity List



Activities for the “City Essay Research” WBS Element

Activity	Labor	Resources
Read the rubric	1 hour	Future Cities Handbook
Brainstorm	3 hour	Project team
Organize the ideas	2 hours	Brainstorm notes
Create an outline	2 hours	Ideas, author

Fill-in the schedule section of your project plan

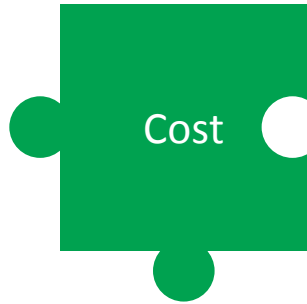


Plan Cost



- 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



Activity	Labor	Resources	Labor Cost	Supplies Cost
Sim City model	80 hours	Students, software	\$0	\$98
Virtual City design	40 hours	Students, material	\$0	none
Presentation	20 hours	Students, software	\$0	none
Essay	15 hours	Students, software	\$0	none

Roll-up the cost of each activity, to the elements, and project .



Quality

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.



Risk

Plan Risk - more “What?”



- 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!

Risk

Plan Risk: Example



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

Be proactive – stop problems before they happen!



Plan Purchasing

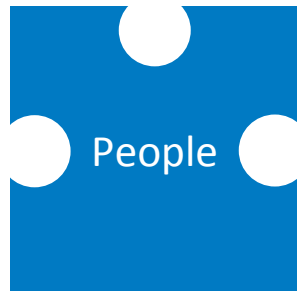
Purchasing

- 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.

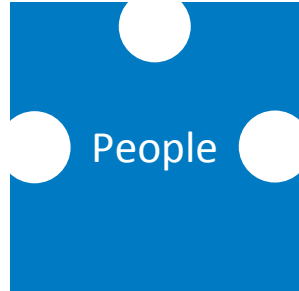


Plan People - "Who?"



- 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

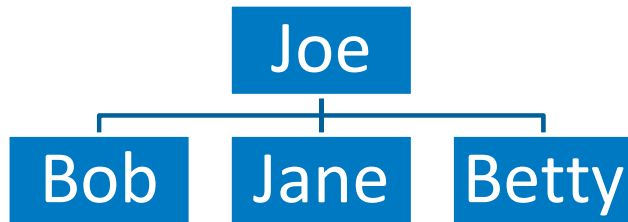
Fill-in the Resources section of the Project Plan.



Plan People: Example



Organization Chart



Responsibility Assignment Matrix

Activity	Team Members			
	Joe	Bob	Jane	Betty
Essay	P	S		
Plan			P	
Design				P
Model	S	P	S	S
Presentation	P			

P=Primary Responsibility
S=Secondary Responsibility

Organize your team for roles and activities.

Plan Communication



Communication

- Communication is essential for project success
- Poor communication can cause:
 - Misunderstandings
 - Wasted time and effort
 - Low project team morale

Types of Communication

Internal and External

Vertical and Horizontal

Written and Oral

Verbal and Non-verbal

Formal and Informal

Official and Unofficial

90% of a project manager's time is spent communicating.

Communication Skills



Communication

Purpose	Skill
Hear what others are really saying	Active listening
Understand and uncover deeper meaning	Questioning and probing
Tell others what they can expect	Setting and managing expectations
Increase knowledge	Educating
Improve performance	Coaching
Convince others to act	Persuading
Encourage the team	Motivating
Minimize disruption due to conflicts	Resolving conflict

Use the skill to achieve the results you want

Plan Communication: Example



Communication

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

Plan to communicate – who, when, how, and why.

More About Plans

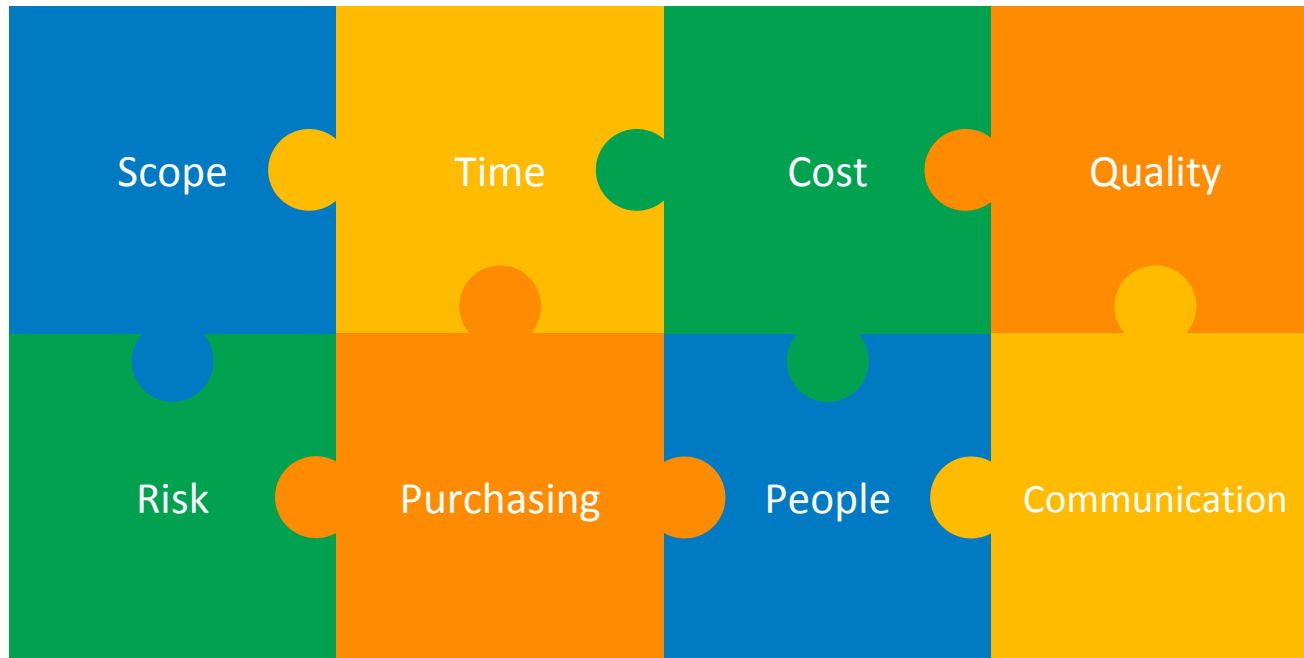


- Write down your plan
- Compare your plan to your Project Objectives and address differences
- Get agreement from stakeholders
 - Sponsor
 - Mentors
 - Project Manager
 - Project Team
- Measure your project progress against your plan
- Know that your plan will change



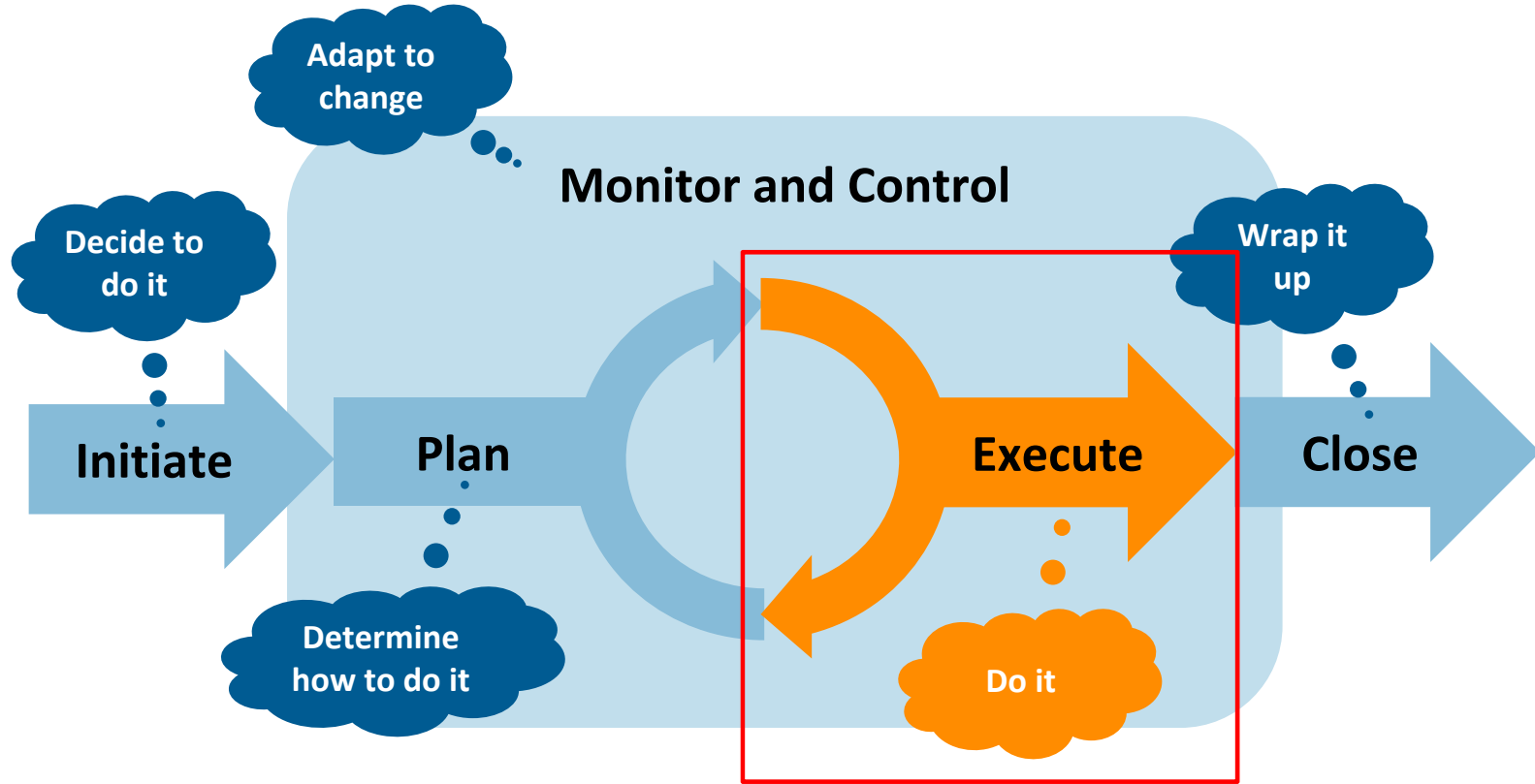
Your plan is an agreement of how to accomplish your goal.

Plan: Determine How to Do It



An integrated plan shows you how to reach your goal.

Execute



Now that you have a plan, follow it.

Execute – Project Manager's Role



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

The Project Manager has overall responsibility for the project.

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

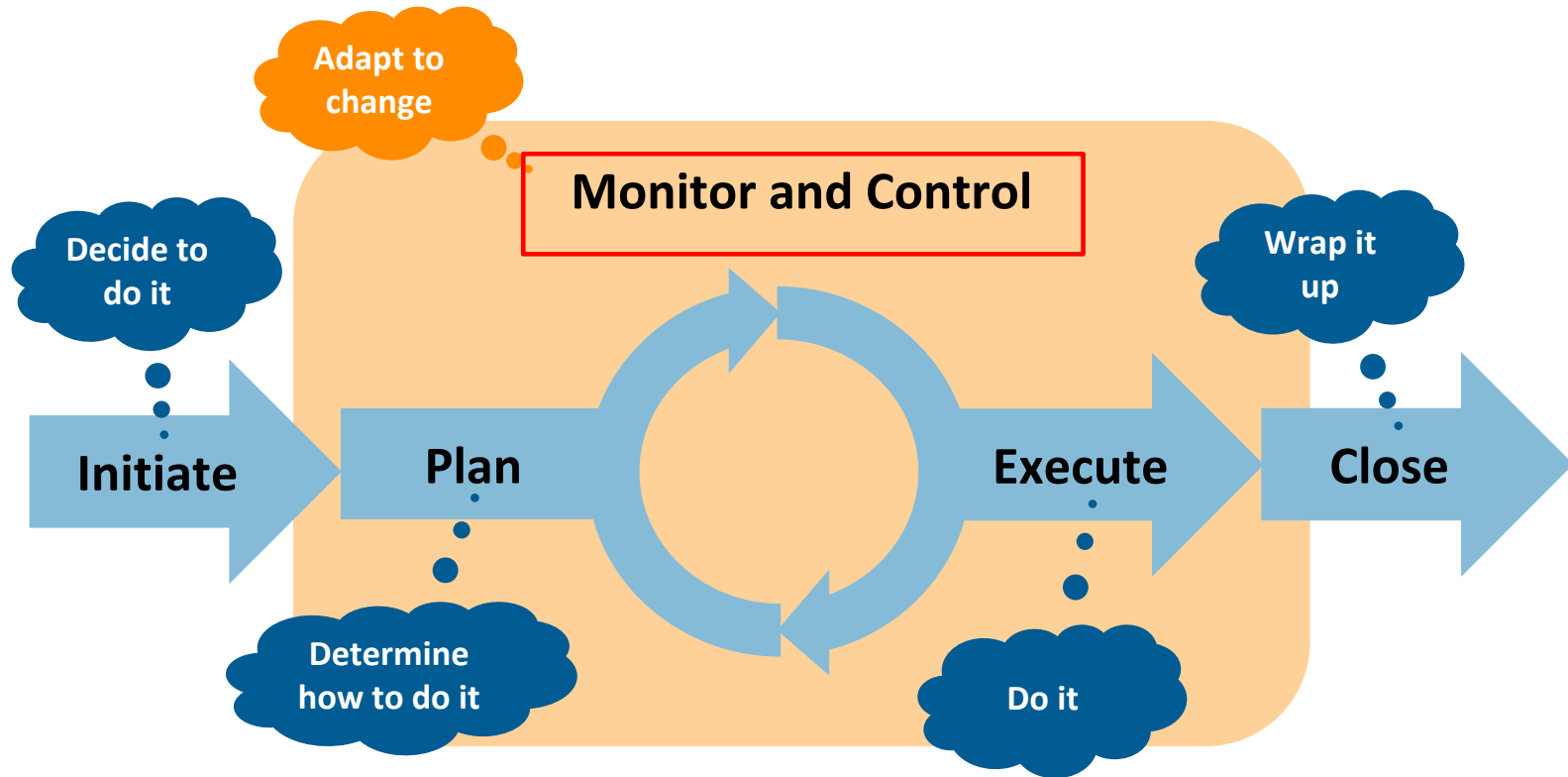


- Scope
- Time
- Cost
- Quality

- Product
- Service
- Result

A good plan makes executing easier.

Monitor and Control



Update the Check-in section of the project plan.

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

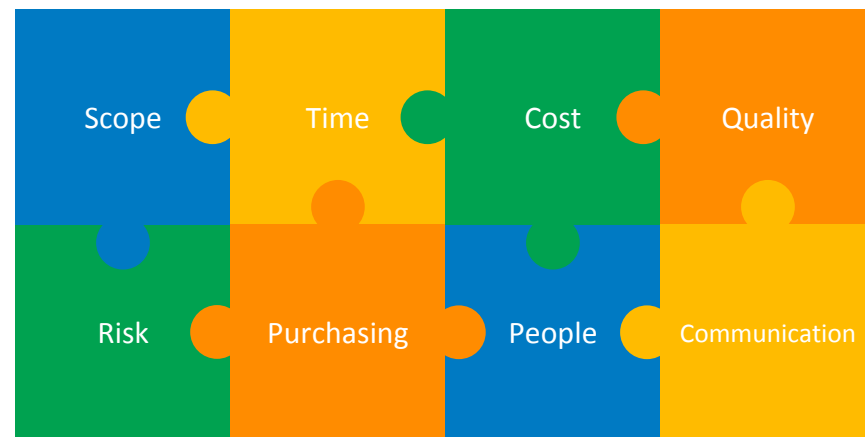
- Write down the decision

Control the change – don't let it control you.

Adjust Your Plan

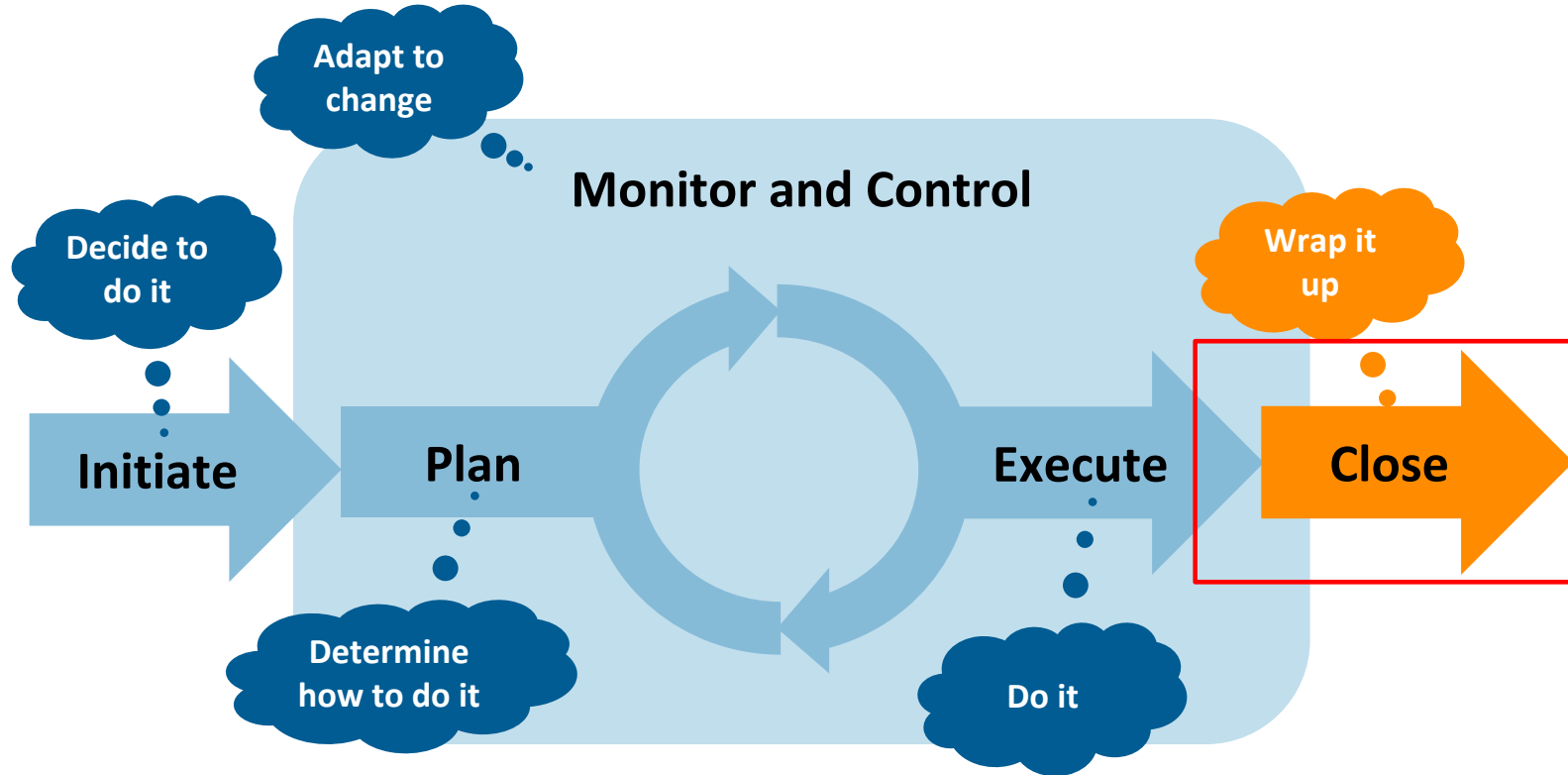


- Determine how your decision affects each aspect of your plan.
- Adjust your plan to reflect the change.
- Involve stakeholders in the process.



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

Close



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

The Importance of Planning



- 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.

Acknowledgement



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