Project Planning for Resilient Cities

PRESENTED BY
THE PROJECT MANAGEMENT INSTITUTE
DELAWARE VALLEY CHAPTER &

THE FUTURE CITY COMPETITION
PHILADELPHIA REGION

1.1

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. 43:

https://futurecity.org/2018-2019-future-city-program-handbook

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 ?
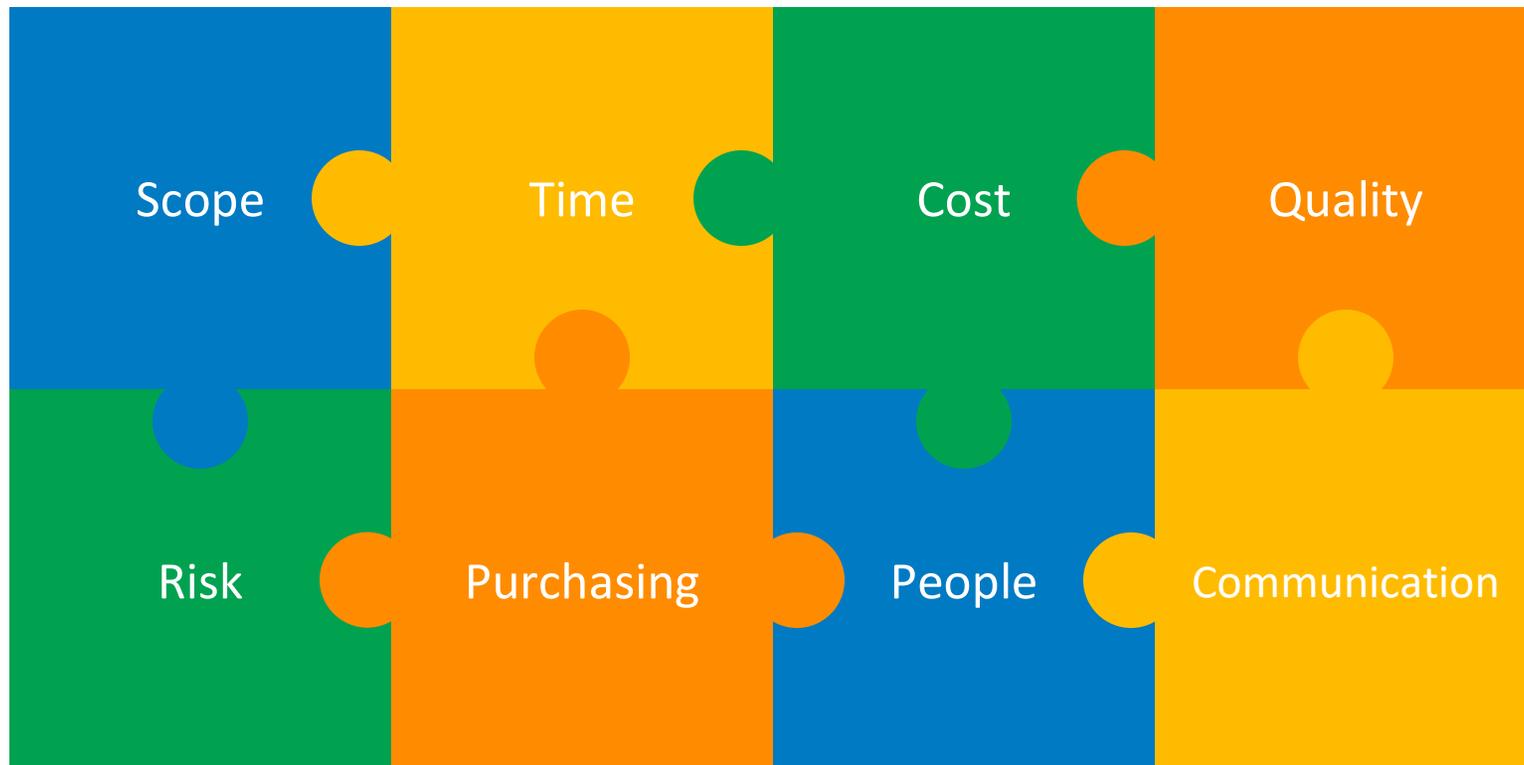
Initiating a Project

Think about it	Write it down	Reach agreement

Make sure your project is worth doing.

Plan: Determine How to Do It

Scope	Time	Cost	Quality
Risk	Purchasing	People	Communication

A plan fits the pieces of your project together

Plan Scope "What?"

Define the project's output in detail

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

Assumptions

- Natural disasters are the only problems
- Includes Power Generation and Transmission
- Sustainable power sources are included

## Fill-in the assumption section of your plan.

Example Requirements

- Functional Requirements
  - Resilient Power for a City
  - Able to survive natural disasters
  - Quick recovery from problems
  - Other types of disasters (???)

- 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 12/4/2018
  - Final design must be done by 12/18/2018

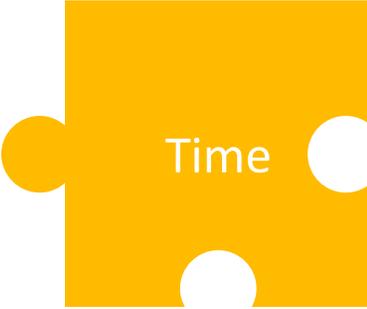Put the constraints and assumptions into the Project Plan form

Fill-in the constraint section of your plan.

Work Breakdown Structure
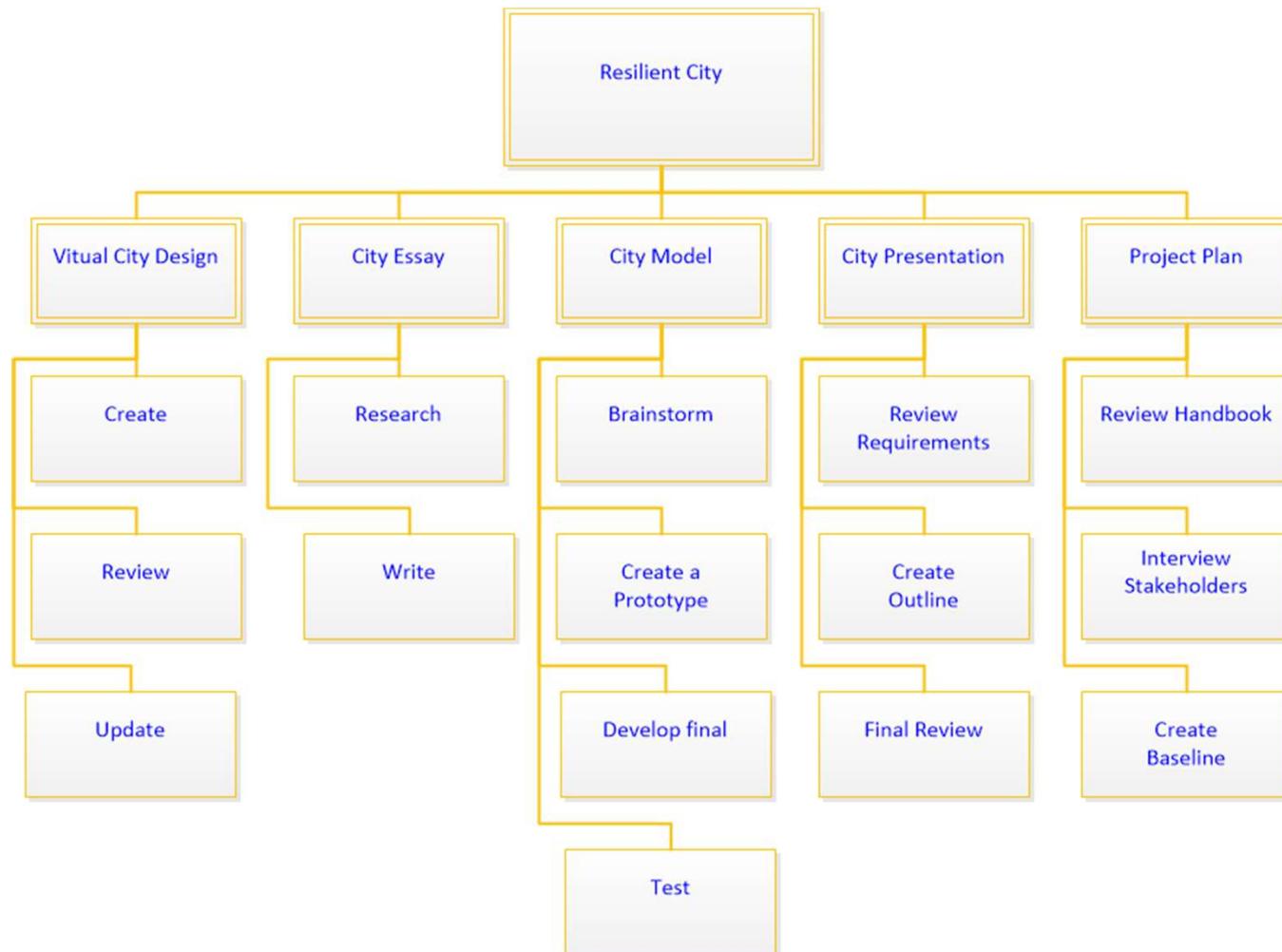
Define the high-level work to be done.

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

Fill-in the schedule part of the Project Plan form

Determine the order and duration of activities.

Time

Activities for the "City Essay Research" WBS Element

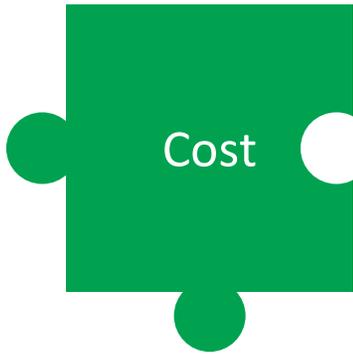| Activity	Labor	Resources
Read the rubric	1 hour	First Cities Handbook
Brainstorm	3 hour	Project team
Organize the ideas	2 hours	Brainstorm notes
Create an outline	2 hours	Ideas, author

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 .

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.

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: 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

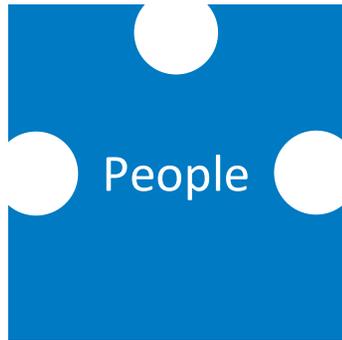## Be proactive – stop problems before they happen!

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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:
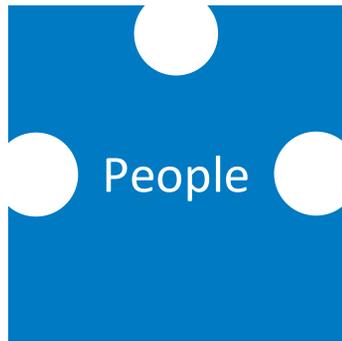 - Stores
  - On-line
  - School
  - Volunteer

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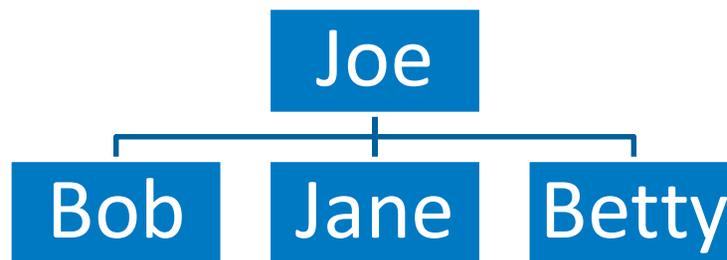
Plan People - "Who?"

People

- 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

Your project needs a trained, organized, motivated team.

Plan People: Example

People

Responsibility Assignment Matrix

Organization Chart

Joe

Bob   Jane   Betty

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 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.

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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 power 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 power generation 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

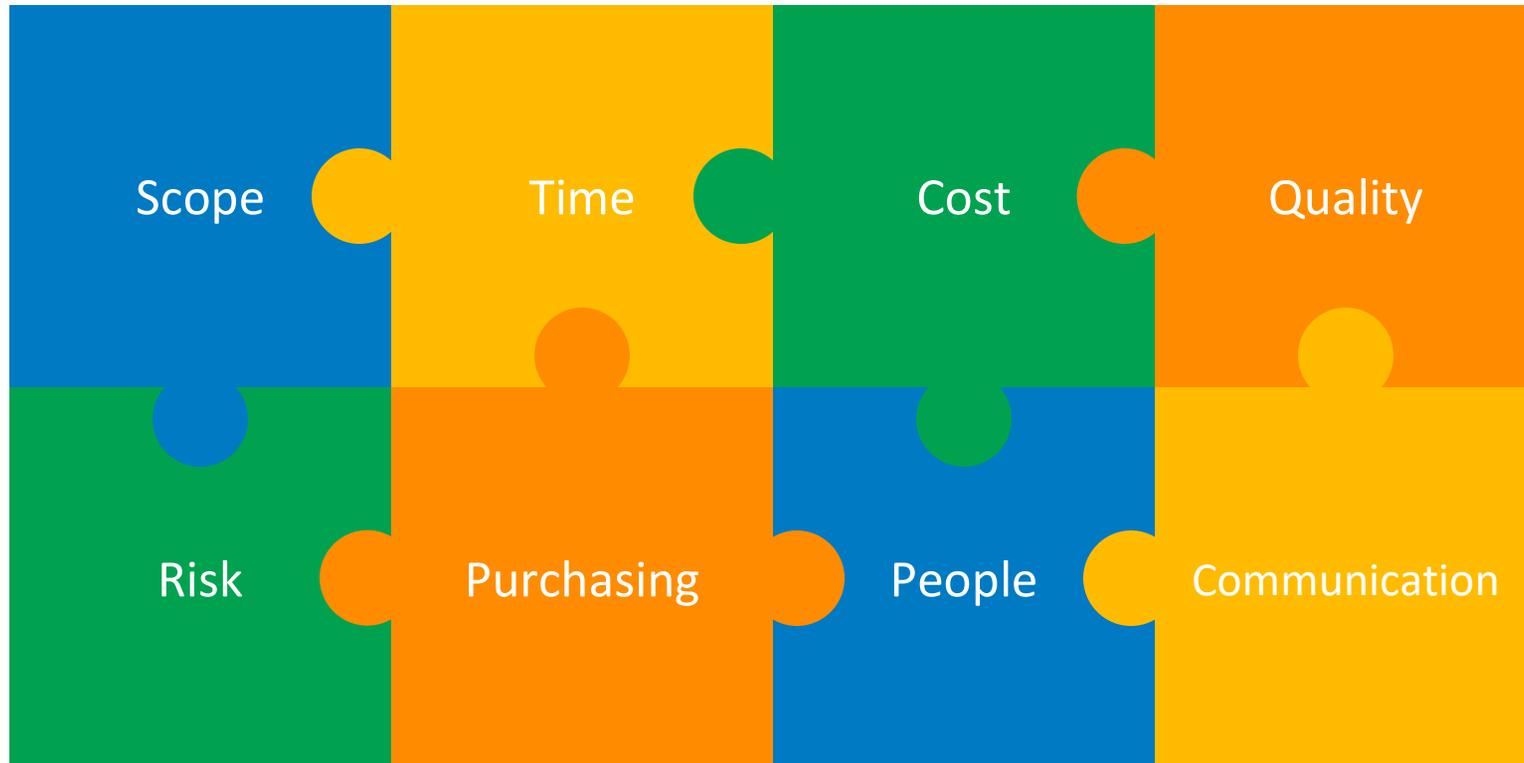**Plan to communicate – who, when, how, and why.**

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
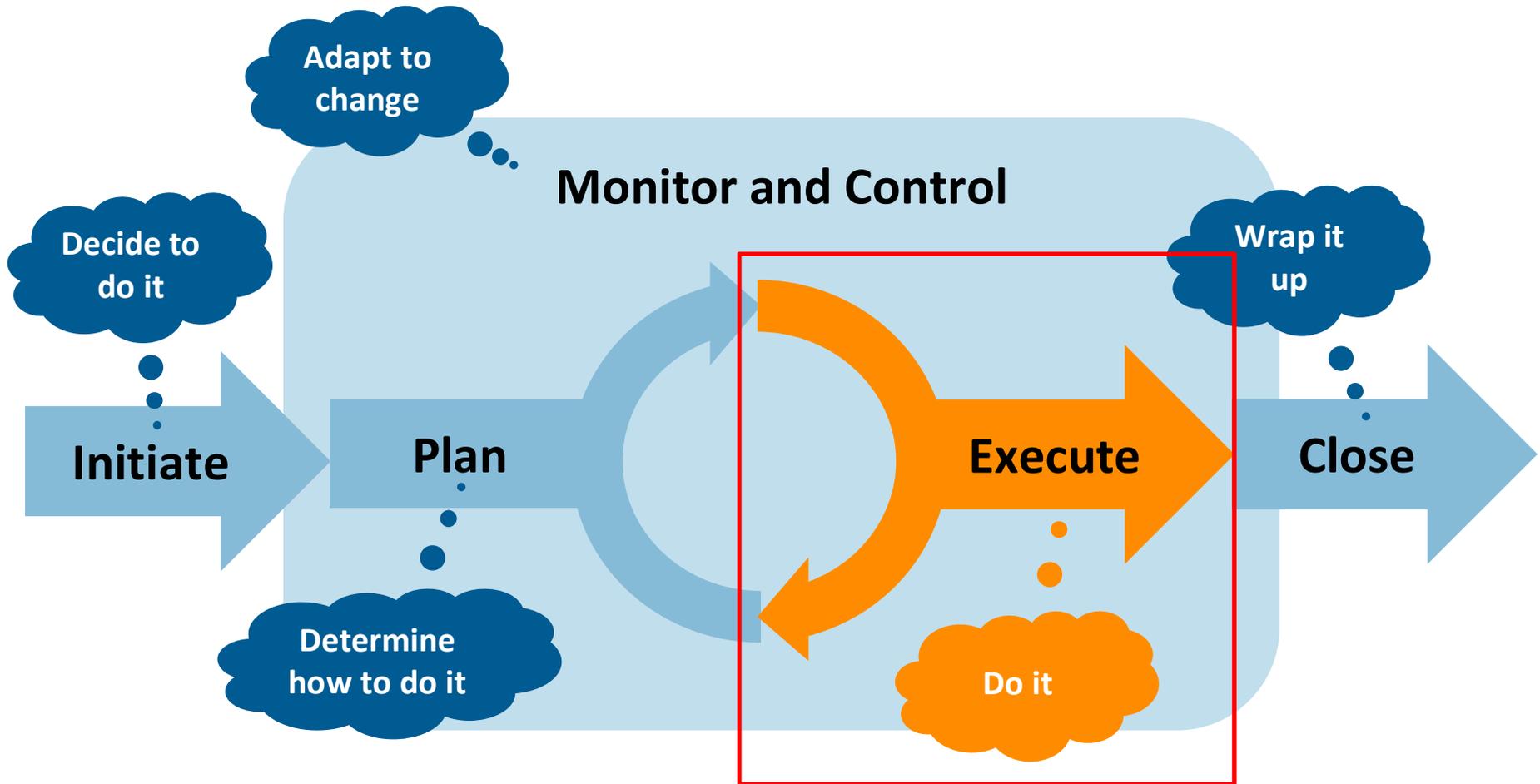- Know that your plan will change
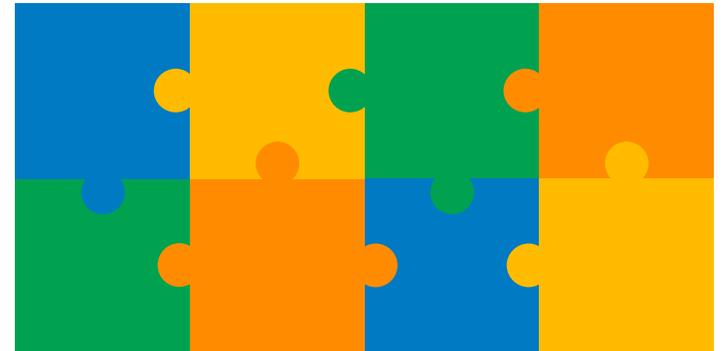
Your plan is an agreement of how to accomplish your goal.

Plan: Determine How to Do It

Scope | Time | Cost | Quality

Risk | Purchasing | People | Communication

An integrated plan shows you how to reach your goal.

Execute

Adapt to change

Monitor and Control

Decide to do it

Wrap it up

Initiate

Plan

Execute

Close

Determine how to do it

Do it

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

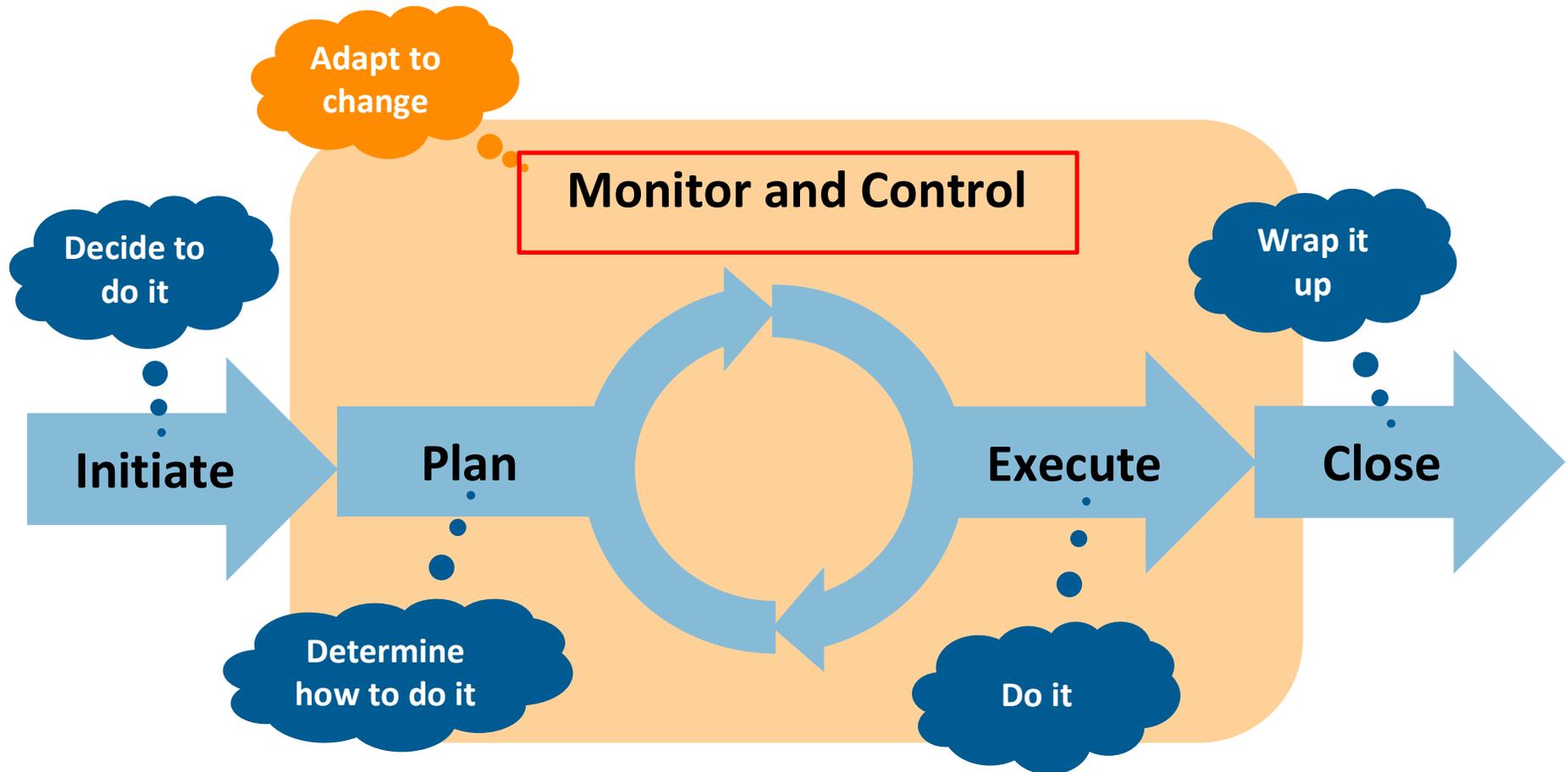People are the key to success!

Execute

- Scope
- Time
- Cost
- Quality

- Product
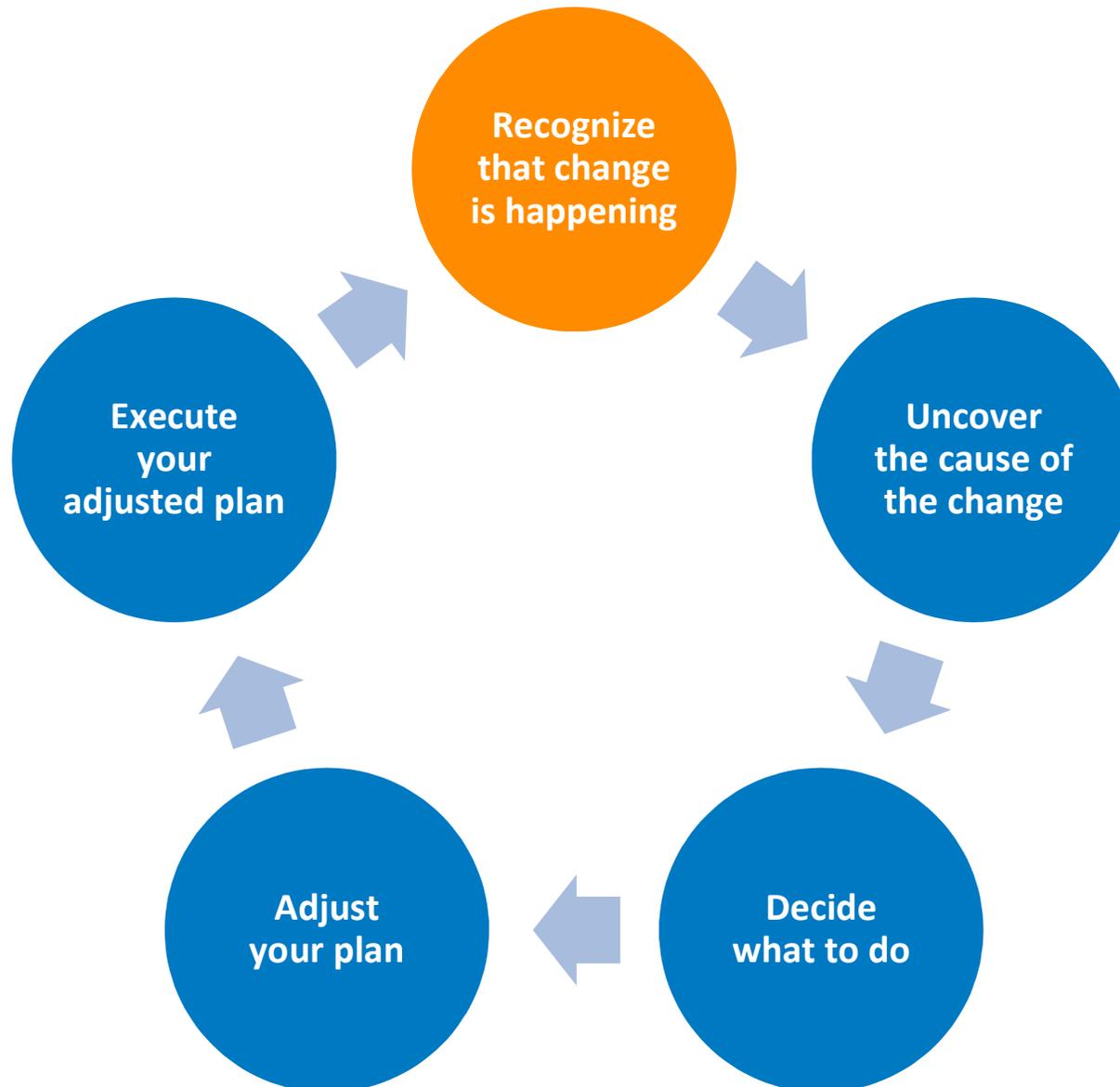- Service
- Result

A good plan makes executing easier.

Monitor and Control

Update the report section of the project plan.

Recognize Change

Making a Decision

Recommend action
- Corrective action
- Preventative action
- Defect repair

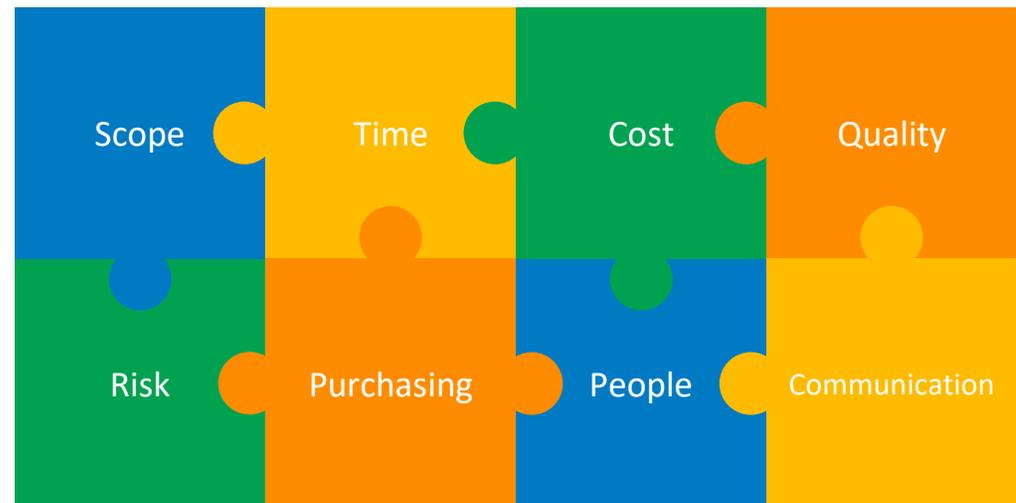**Get agreement**
- Talk to the people who are affected

Accept or reject the change
- Write down the decision

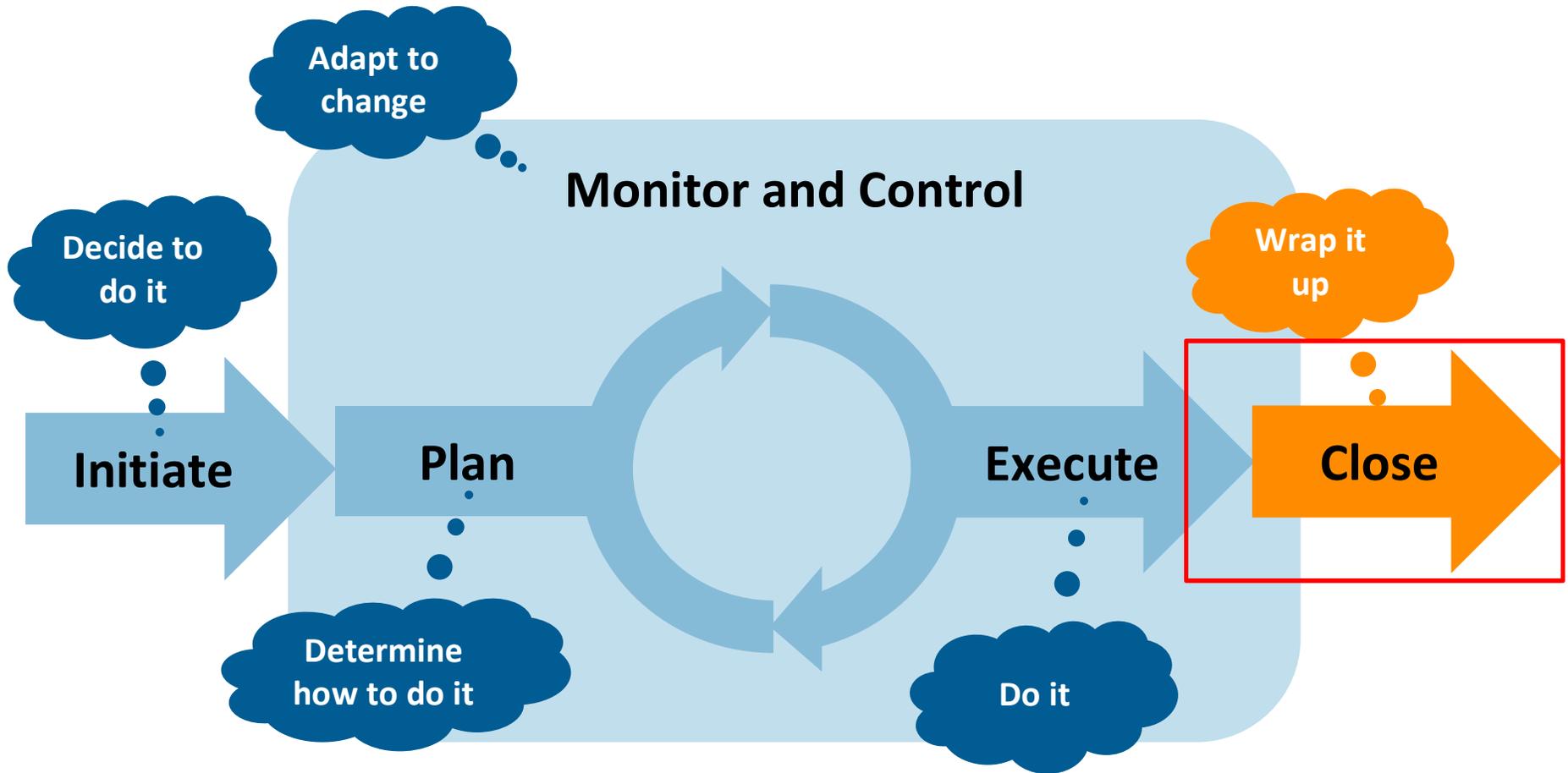Control the change – don't let it control you.

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.

Scope	Time	Cost	Quality
Risk	Purchasing	People	Communication

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

"Those who cannot remember the past are condemned to repeat it"
- George Santayana

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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