UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL
(UCI)

PROPOSAL FOR PROJECT METHODOLOGY FOR USE AT THE CENTRAL HOUSING AND PLANNING AUTHORITY

STUDENT NAME:

KIZZY V. R STERLING

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This Final Graduation Project was approved by the University as partial fulfillment of the requirements to opt for the Master in Project Management (MPM) Degree

_ROGER VALVERDE
TUTOR

Xavier Salas
Full name must be written
REVIEWER No.1

Eduardo Lima
Full name must be written
REVIEWER No.2

KIZZY V. R. STERING
STUDENT

DEDICATION

This Final Graduation Project is dedicated to the memory of the ones I lost during this process – my own Chaka Faith Sheppard, my nephew Xavion Lewis, and my father-in-law Pastor Uriah Sheppard.

And to the ones who remained to strengthen me – my husband Ermol Sheppard, my mother Roslyn Sterling and my siblings Toussaint and Billie Sterling

"…all the days of my appointed time will I wait, till my change comes." Job14:14 (KJV)

ACKNOWLEDGMENTS

“In everything give thanks: for this is the will of God in Christ Jesus concerning you.” (1 Thessalonians 5:18 KJV)

My heart is filled with gratitude and I express it to those who walked alongside me in this journey toward completing this Master’s programme. The way was fraught with difficulties that should have derailed me but their presence and encouragement kept me focused.

Ermol, my husband, for bearing and forbearing with me throughout this journey.
Roslyn Sterling, my mommy, for being the best mother ever.
My sister Billie Sterling-Lewis and brother Toussaint Sterling for reminding me that Sterling means excellence.
My church family whose constant prayers and encouragement undergirded me through the most difficult experience of my life.
My assistant, Mrs. Nida Philip for believing in me and supporting me in every aspect of my journey.
My fellow cohort members and lecturers without whom this journey would not be successful.
Sharon Peters, Ashton Ferron and Brently Edghill for their your contribution to this FGP.
And most of all, my God and Savior, the Lord Jesus Christ, for it is in Him that I live and move and have my being.

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ABBREVIATIONS AND ACRONYMS

- Central Housing and Planning Authority (CHAPA)
- Certificate of Completion (CoC)
- Final Graduation Project (FGP)
- Housing Executive Officer (HEO)
- Human Resource (HR)
- Office of Government Commerce (OGC)
- Organizational Project Management (OPM)
- Organizational Project Management Maturity (OPMM)
- Organizational Project Management Maturity Model (OPM3)
- Project Management Body of Knowledge (PMBOK)
- Project Management Institute (PMI)
- Projects IN Controlled Environments (PRINCE)
- Project Supervisor (PS)
- Requirement Traceability Matrix (RTM)
- Work Breakdown Structure (WBS)

EXECUTIVE SUMMARY (ABSTRACT)

Central Housing and Planning Authority (CHAPA) of Antigua and Barbuda was established in 1948 by an act of parliament with the distinct responsibility of providing housing options to the working-class people of the country. At the time of establishment, many working-class persons lived in unpleasant conditions and there were many unplanned settlements that lent to slum-like environments. CHAPA's specific role was to clear such areas, relocate residents where possible and provide affordable housing options to the residents. Over the years, the role of CHAPA expanded to include acquiring and selling crown lands at concessional rates.

Both providing affordable housing and the sale of crown lands are project type endeavours for the organization as each development – housing or land development are individual projects. The execution of these projects in recent years have seen significant failure. Failure is attributable to the lack of proper project management on each project. Improperly defined project parameters contribute to the continuous project failure, as does the absence of clearly defined project management procedures and methodology to guide the execution of CHAPA's projects.

The general objective of this Final Graduation Project was to develop a project management methodology that can be applied to projects undertaken by CHAPA, thereby reducing project failure. The specific objectives were: to assess the current project management practices used in the Central Housing and Planning Authority in order to establish the baseline for the proposal of methodology for Project Management; to develop a methodology for the management of projects undertaken by CHAPA; to provide a framework within which projects undertaken by CHAPA can be successfully intiated, planned and executed; to develop templates, forms and procedures to govern the initiation, planning, executing, monitoring and controlling, and closing of projects within the organization.

The specific objectives were achieved by three basic methods – interviews with persons who were integral on past projects, the assessment of Organizational Project Management using the 3PM Assessment tool and observation of the practices of the organizaiton, especially in relation to the last two housing projects undertaken by CHAPA. Additionally, several text books and internet websites were used to develop the theoretical aspects of the FGP. Overall, the methodologies used to develop this FGP were the applied research method and qualitative research method.

The results of the research methods used indicated that professional Project Management is virtually unkown to the organization. Project Management was seen primarily as the monitoring and controlling of undertaken projects. The planning stage was informal and did not follow any of the principles established by PMBOK, and since there is no formal policy on how projects should be executed, each HEO determined how he/she wanted projects managed.

The project methodology was developed in the form of a policy and procedures document that would govern the way in which CHAPA manage projects in the future. It was determined that elaborate project documents are not necessary for this organization. Therefore, a catalogue of simple templates were chosen to guide the Project Management process. The sample templates and forms annexed to this FGP is not exhaustive and additional templates are available from the catalogue source.

It was recommended that the organization should formalize the position of Project Manager in the organization and ensure it is filled by a suitably qualified person. It was also recommended that the persons who would fill the roles of Project Supervisors be given training on the Project Management processes to ensure that adequate support is given to the Project Management process.

In conclusion, the FGP determined that the proposed methodology should not remain static but should be constantly reviewed and updated as needed.

1 INTRODUCTION

1.1. Background

The Central Housing and Planning Authority (CHAPA) was established in Antigua and Barbuda by the Slum Clearance and Housing Act of 1948. Included in the purpose of the act is the duty of CHAPA to prepare housing schemes for the working-class population of Antigua and Barbuda, declare an area slum clearance and exercise powers to clear such area, and secure redevelopment of areas considered slum. (Laws of Antigua and Barbuda, CAP 404 *Slum Clearance and Housing*, Sections 13, 14, 15).

Over the years, CHAPA has engaged in the construction of housing projects with the aim of meeting the needs of its target audience, primarily the working class and low-income earners in the country. Evidence suggests that many of the projects encounter major difficulties that affected their successful completion. The last two major housing projects constructed by CHAPA failed woefully. The North Sound Housing Project, which was funded by a bi-lateral government loan, took ten years to complete when the original completion date was 18 months from the start of the project. This schedule overrun had financial implications into millions of dollars. The other project, the Folley's Housing Development, was abandoned mid-construction following disagreements between the contractor and CHAPA. A number of the houses were left incomplete and abandoned for several years. This resulted in the houses being vandalized over time. The organization had to inject hundreds of thousands of dollars to bring those houses into a saleable state.

It appears that no project management plan was prepared for either of the projects mentioned above, or for any other projected undertaken by CHAPA. The absence of a project management plan arises because of the absence of a methodology, which governs the management of projects from initiation to closing. CHAPA currently has no policies and procedures governing the initiating, execution and closing of projects. It is intent of this graduation project to develop a proposed methodology for project management that can be instituted in the organization, with the view that the result would be more successfully managed projects.

1.2. Statement of the problem

Project failure occurs as a result of projects not meeting one or more of the triple constraints of scope, schedule and cost. Quality is the other constraint that is likely to be affected by any failure in meeting any combination of the triple constraints. In addition, ineffective management of the other knowledge areas – integration, resource, communication, risk, procurement and stakeholder management may contribute to project failure.

The failure of CHAPA's projects may be attributed to undefined procedures for managing projects undertaken by the organization. Best practice in project management is virtually unknown to the organization. Projects lacked formally trained project managers, and in instances where support staff could provide the expert advice needed to ensure the triple constraints were constantly kept in check, their advice may not have been entirely recognized and accepted.

The problem to be studied in this Final Graduation Project is the need for a methodology for the management of projects in CHAPA. The development of a proposal for project management methodology in CHAPA is the intended result.

1.3. Purpose

Central Housing and Planning Authority (CHAPA) is a project oriented organization. All activities necessary to generate the final product for sale can be executed as a project. For example, in order to produce the final parcels for sale of lands the following activities must be accomplished: there is scouting available and suitable lands, applying for the transfer of said lands to CHAPA, surveying and demarcation of boundaries, the installation of infrastructure and roads. The sum of these activities fit within the parameters for a project, which is a temporary endeavour undertaken to create a unique product, service or result (*PMBOK Guide 6th ed, PMI 2017).*

The purpose of this study is to examine the project management practices, policies and procedures currently employed at the Central Housing and Planning Authority, determine their efficacy to successful project management, and to develop a methodology to be used by the organization when executing project.

The aim of proposing the project methodology is to offer to CHAPA a comprehensive blueprint for project management that transcends project type. So, whether the project was initiated by the organization, or handed to the organization by political directorate the proposed methodology will guide the project from start to finish.

It is hoped this proposed methodology will provide the following expected benefits to CHAPA:

1. Policies and procedures easily understood and carried out by staff
2. A framework that is applicable both now and for future projects
3. Increased probability of project success

1.4. General objective

The general objective of this Final Graduation Project is:

To develop a project management methodology for use on project being executed by Central Housing and Planning Authority.

1.5. Specific objectives

In order to successfully complete this proposed methodology and the specific objectives of this FGP are:

1. To assess the current project management practices used in the Central Housing and Planning Authority in order to establish the baseline for the proposal of methodology for Project Management.
2. To provide a framework within which projects undertaken by CHAPA can be successfully intiated, planned and executed.
3. To develop a methodology for the management of projects undertaken by CHAPA.

4. To develop templates and forms for Project Managemet in CHAPA.
5. To demonstrate the applicablity of the templates developed by using a CHAPA project in the templates

2 THEORETICAL FRAMEWORK

Company/Enterprise framework

2.1.1 Company/Enterprise background

Central Housing and Planning Authority is a statutory organization in Antigua and Barbuda established by the Slum Clearance and Housing Act of 1948. The act was established in response to the need for upgraded living conditions of the working-class people of Antigua and Barbuda. Like many of the islands in the Caribbean, most of the citizens in Antigua and Barbuda in 1948 were descendants of slaves, and mostly labourers on the sugar plantations. They had meagre means, which means their housing options were limited. This gave rise to slum conditions in some areas and inadequate housing in others. CHAPA was established so that those conditions may be improved.

2.1.1.1 Mission and vision statements

The mission of the organization tells us what we do, while the vision tells who we wish to be in the future. The mission and vision statements of CHAPA are presented below.

Mission

To build a better tomorrow through the products and services we provide that support the success of affordable housing opportunities, land distribution, related services through exemplary customer service and innovation to all stakeholders.

Vision

To achieve financial, quality home ownership and lands to each client and customer we serve.

2.1.1.2 Organizational structure

CHAPA is a traditional, hierarchical, functional structured organization with several departments. As a statutory organization, it is run by a board of directors, which is constituted by the Minister responsible for the organization. The chief executive officer is called the Housing Executive Officer (HEO) and all other managers and departments

report ultimately to that person. The departments are currently structured as follows: Building & Maintenance, Surveying, Heavy Equipment, Loans and Allocations, Registry/Information and Conveyance, HR and Accounting.

CHAPA is presently staffed by 54 employees, including the managers. There are 4 managers, the HEO, Accountant, Loans and Allocations, Registry/Information and Conveyance and Human Resource. The other departments are headed by supervisors who report to the HEO.

The organizational chart is depicted below.

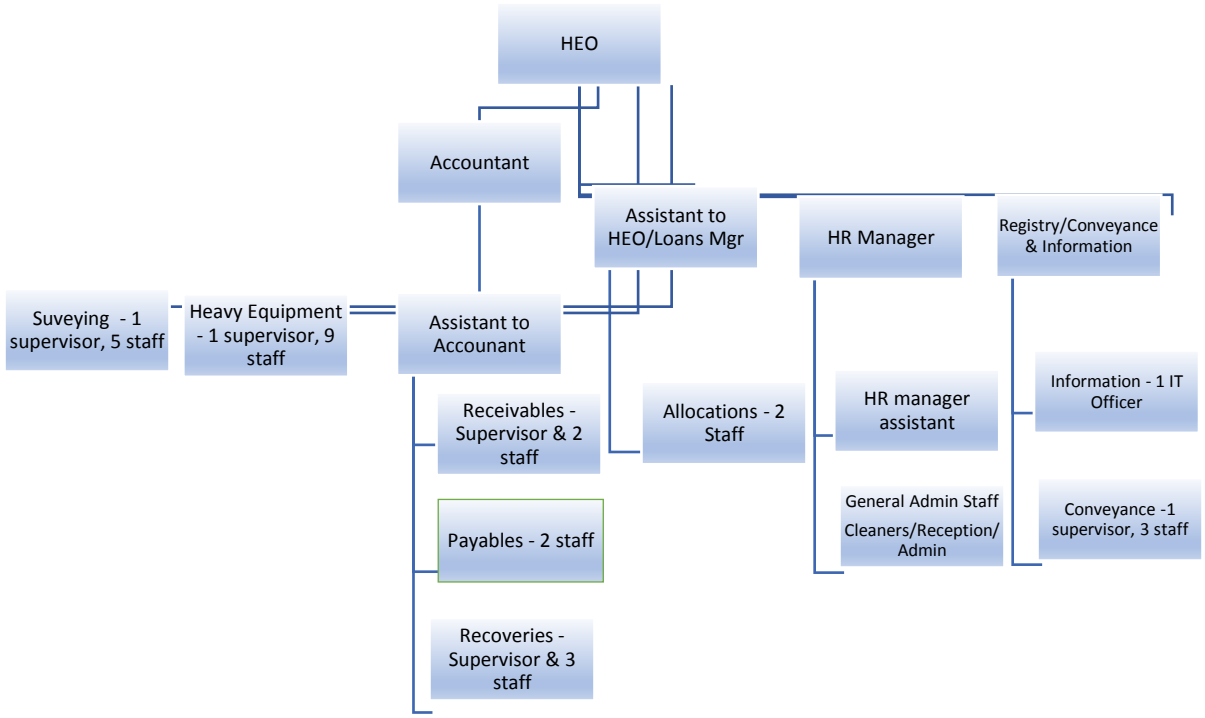

Figure 1 CHAPA Organizational Chart Source: CHAPA Antigua & Barbuda, 2019)

2.1.1.3 Products offered

CHAPA engages in two main activities – sale of lands and sale of houses. Lands are acquired from the crown at a concessionary rate which enables CHAPA to sell the lands to citizens at a cost lower than market. Additionally, the lands may be developed for housing and sold as properties. Any other activity undertaken by CHAPA is with the aim of engaging in sale of lands or sale of houses.

In addition to offering lands and houses for sale, CHAPA sometimes provides the financing option for these sales. Whenever CHAPA finances the sale of land or house properties, the loan is offered at a rate of 6.5% per annum for 3 to 5 years for land, and 10 years or more for houses properties. CHAPA has also provided financing to customers to construct houses on land already owned by the customer. In these cases, the organization provides the loan to the customer who is responsible for obtaining all building approvals and permits, engaging the contractor and monitoring the progress of the construction. CHAPA's Building Inspector verifies the work completed and authorizes each payment drawdown.

Project Management concepts

2.1.2 What are projects

When considering the concept of project, the thoughts that come to mind are specific deliverable or deliverables, specific timeline and collaborative effort. The Open University (2016) defines a project as *organized work towards a pre-defined goal or objective that requires resources and effort, a unique (and therefore possibly risky) venture having a budget and schedule.* Another definition given for projects is that of the Project Management Guide, which defines a project as a *temporary endeavor undertaken to create a unique product, service or result* (PMBOK 6th ed).

A project differs from normal day to day work, in that it has an expected specific end result, a specific end date and resources temporarily allocated to ensure it is completed in accordance with the expected result, within the specific timeframe and with the

specific resources allocated to it. However, some routine activities may be involved in its completion.

Projects are developed to bring about change and are usually in response to customer needs, a market opportunity, organizational needs and/or changes in regulations or laws, or technological advances (PMBOK 6th ed, p). Customers may request changes in a particular product, or the company may identify an opportunity for growth and expansion and develop a project to meet that need. A newly enacted law or regulation may necessitate a project to bring the organization in line with it or an organizational assessment may identify areas for improvement for which a project may be developed. Additionally, a technological advancement may necessitate a project to bring the organization in line with it.

2.1.3 Project Management

Since a project produces a specific deliverable within a specific timeline through collaborative effort, it stands to reason that some process is necessary to ensure that the outcome is as desired. That process is called project management. So, what is Project Management?

Project Management is “the application of knowledge, skills, tool and techniques to project activities to meet the project requirements” (PMBOK 6th ed, 2017, p.10). The purpose of project management is to enable the organization to execute the project effectively and efficiently. According to Jordon (2019), project management is “creating and maintaining an environment where the project team can work together to achieve the best set of outcomes within the restrictions of the project”. In other words, it is using a specific discipline particularly geared towards projects to ensure successful project outcomes.

2.1.4 Project life cycle

Whatever the reason for developing a project, every project goes through the stages of the project life cycle. The project life cycle is *a* “series of phases that a project passes

through from its start to its completion (PMBOK 2017, p.547). PMBOK continues “a project phase is a collection of logically related project activities that culminates in the completion of one or more deliverables” (p.547). The deliverable may be the actual end result of the project or the end of one phase, which becomes the input into another phase. The phases may be carried out sequentially, which is one after the other; iteratively, which is the development of the product through a series of repeated cycles, while increments successively add to the outcome (PMBOK, 2017 p. 709); or may overlap, which is two or more phases occurring at the same time.

The project life cycle has four generic phases – starting, organizing and preparing, execution and closure (PMI, 2017). Figure 2 illustrates the generic project life cycle phases.

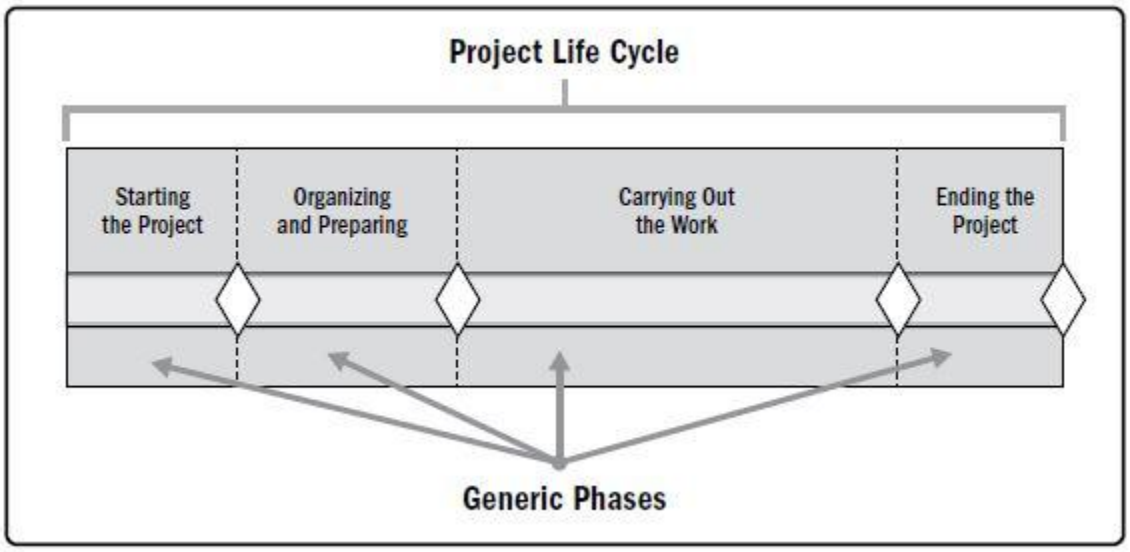

Figure 2 Generic Depiction of a Project Life Cycle.
From *PMBOK Guide 6th Ed)* (p. 548) by PMI, 2017, Newtown Square, PA. Copyright 2017 by PMI.

Figure 3 below shows the linear progression of the project life cycle. Based on the line, it is evident in the project life cycle that cost and staffing increase gradually as time on the project progresses, until the completion of the work. Afterwards, cost and staffing drop off drastically during the closing phase of the project. The largest allocation of cost and staffing is seen during the execution phase.

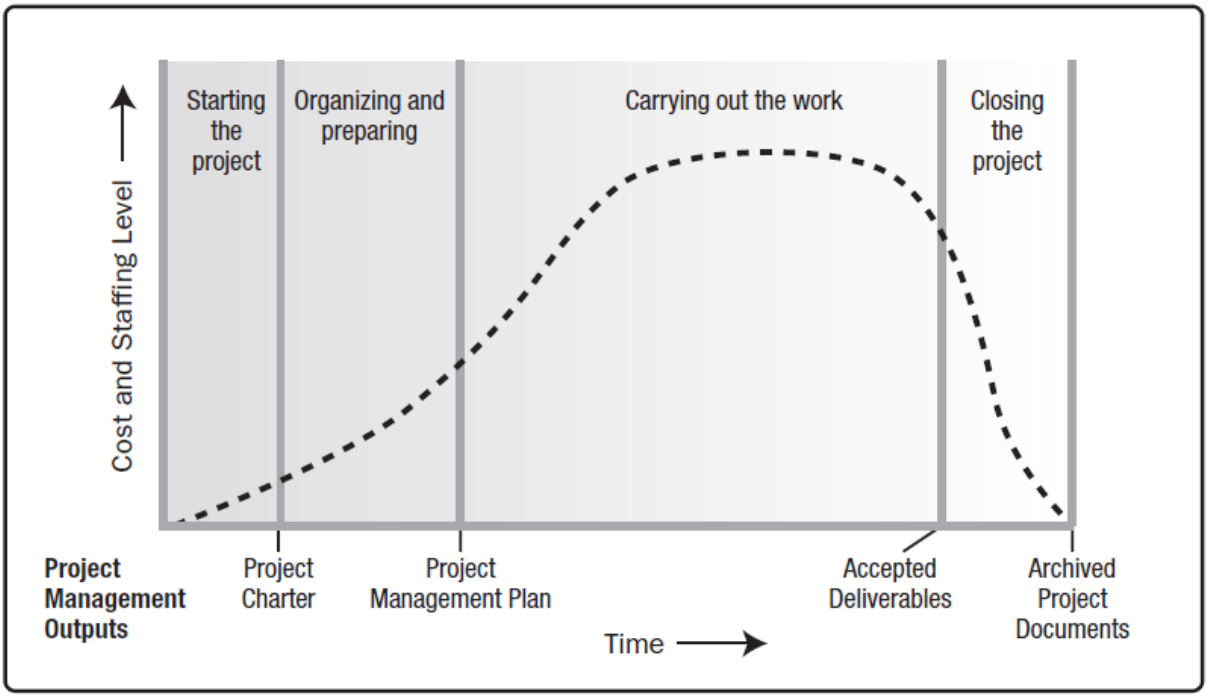

Figure 3 Efforts across project's life cycle.
From Karneliuk, A. (2016, July 29). Retrieved from http://karneliuk.com/2016/07/efforts-across-projects-life-cycle/

Because projects are unique endeavours, and no two projects are the same, the number and duration of phases in each project differ from the other. One project may have only one phase, while another may go through several phases in order to produce the final result. For example, at CHAPA, to accomplish the final project result of a completed turnkey housing development project, the following phases are achieved:

1. Land acquisition phase – that is the process of identifying the area to be developed, applying for the land to be transferred to CHAPA through Cabinet decision, paying for the land and having land transferred to CHAPA;
2. Survey and development phase – that is the process of preparing the land for use. This includes establishing parcel boundaries, clearing and leveling site, sub-dividing into individual parcels, marking and cutting roads;
3. Design and tendering phase – that is the process of designing the housing project including construction designs, site planning, preparing construction bid documents, entering in the tendering process, selecting the contractor and entering into the construction contract.

4. Construction phase – that is the actual construction of the homes according to the specified design.

Each of the phases would then go through the project management process groups. The process groups are discussed in detail in the next section.

2.1.5 Project management processes

PMBOK (2017) describes the project management processes that are employed to meet the project's objectives. These are initiating process group, planning process group, executing process group, monitoring and controlling process group, and closing process group. While the process groups appear similar to the phases of the project life cycle, they are different. The project life cycle applies to the phases that make up a project – from start to finish. The process groups are applied to every phase of a project. Take the example above of the housing development project; the land acquisition phase goes through the initiating, planning, executing, monitoring and controlling, and closing process group. So does the design phase, survey phase and so on.

Initiating process group – This process is concerned with defining a new project or project phase and seeks the relevant authorization for commencing the phase or project. In this phase the scope of the project is determined, the financial resources are committed and critical stakeholders are identified. The project manager is usually identified in the initiating process group phase. Inputs into the initiating process group include the project charter and business case. (PMBOK 2017, p.561)

Planning process group – This process is concerned with developing the scope of the project, and defining and refining the objective. In essence, the planning process group entails progressively elaborating the details of the project. This means developing the project schedule, creating the Work Breakdown Structure (WBS), defining and sequencing activities, estimating costs and determining budget, estimating necessary resources, and identifying risks. Additionally, the subsidiary management plans that make up the project management plan are developed. The subsidiary management

plans are the plans for managing each of the project management knowledge areas. These include scope management, cost management, schedule management, risk management and quality management. (PMBOK 2017, p. 565)

Executing process group – This process group is concerned with performing the activities defined in the project management plan that create the project deliverables. Here also, the project team is developed and managed to ensure synergy. Most of the budget is expensed and most of the resources and time are utilized in the processes of this process group. (PMBOK 2017, p.595)

Monitoring and controlling process group – This group consists of "processes required to track, review, and regulate the progress and performance of the project" (PMBOK, 2017, p.613). The processes in this group compares the plan to the actual performance and makes adjustments as necessary. The processes also assess the project to determine if the correct outcome will be delivered based on the activities carried out. If necessary, change requests are implemented to bring the project in line with the desired outcome.

Closing process group – The name for this process group is self-explanatory. The processes are carried out for the finalizing and closing of the project, signifying that the project is complete, the objectives have been achieved and the product, service or result has been delivered. Processes are also carried out for projects that are terminated prematurely. Closing processes include signing off completion documents, archiving project records, and releasing the project team.

2.1.6 Project management knowledge areas

PMBOK defines 10 knowledge areas relevant to project management. Knowledge areas are technical subject matter or areas of specialization employed in project management. The knowledge areas interact with the process groups, in that, the knowledge areas can occur any time during any of the process groups. Each knowledge area has a set of activities which constitutes its processes. These activities

are made up of three categories – inputs, tool and techniques, and outputs. Inputs are information necessary developing each activity; tools and techniques are the processes by which the information is used and outputs are the outcomes of each activity. The knowledge areas are defined below.

2.1.6.1 Project Integration Management

Project integration management includes the processes and activities to identify, define, combine, unify and coordinate the various processes and project management activities in the Project Management Process Groups (PMBOK, p.69-128). The processes of Project Integration Management are:

1. Develop the Project Charter - the project charter is the document that formally authorizes the project and authorizes the Project Manager to apply resources to the projects
2. Develop the Project Management Plan – the Project Management plan defines, prepares and coordinates all other plan components.
3. Direct and Manage Project Work – this is the process of performing the work in the project management plan.
4. Manage Project Knowledge – this is acquiring knowledge and using existing knowledge to achieve the project's objectives.
5. Monitor and Control Project Work – It is important that the course of the project is monitored and controlled to ensure performance objectives are met.
6. Perform Integrated Change Control – this process reviews and approves all change requests on the project.
7. Close Project or Phase –

Project Integration Management is a function of the Project Manager. Only he/she is responsible for the overall management of the project. Figure 4 gives and overview of Project Integration Management.

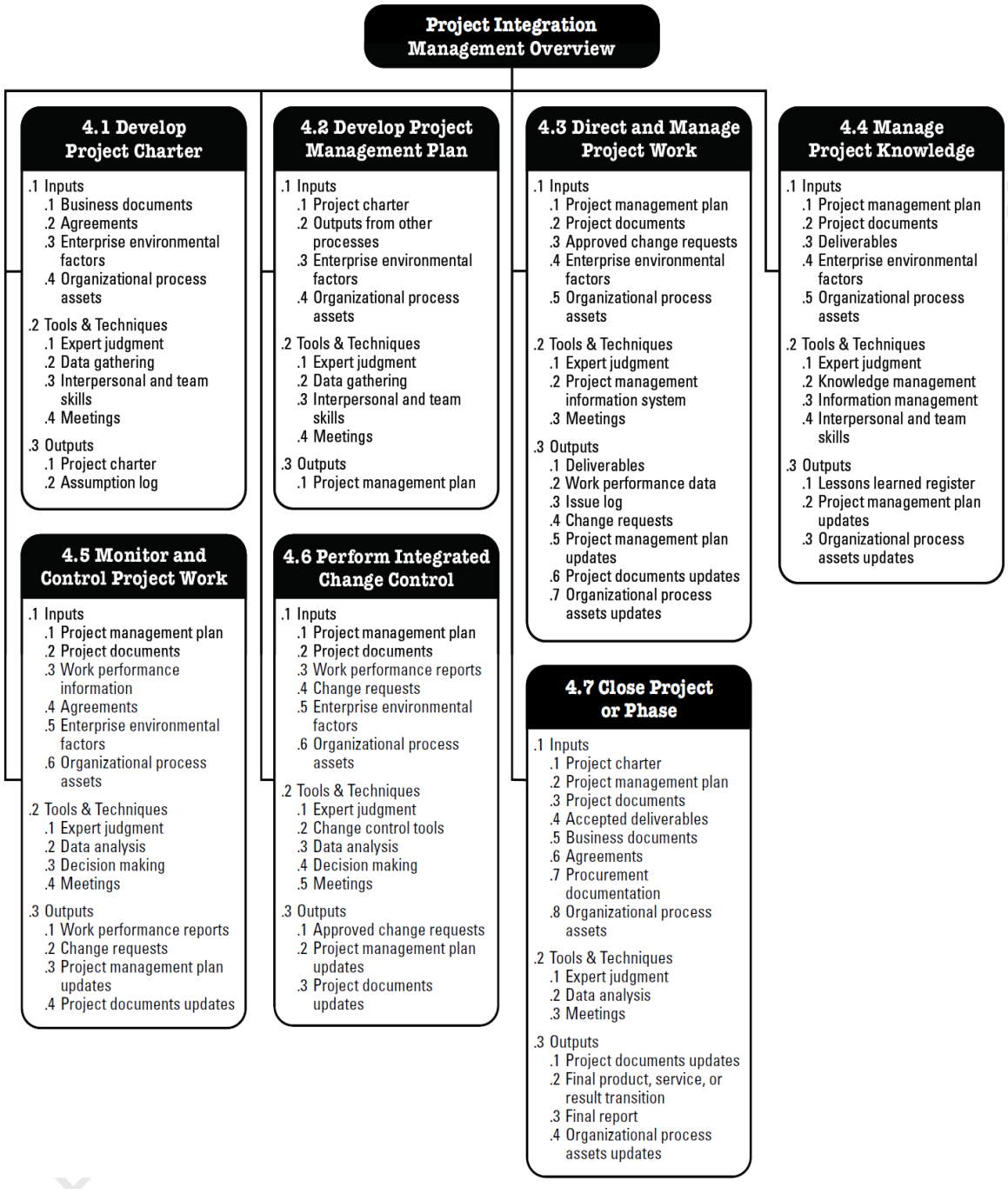

Figure 4 PMBOK® Guide Project Integration Management Overview.
From *PMBOK Guide 6th Ed)* (p. 71) by PMI, 2017, Newtown Square, PA. Copyright 2017 by PMI Inc.

2.1.6.2 Project Scope Management

Project Scope Management is the knowledge area concerned with work required to achieve the project objectives (PMBOK, p.129). It ensures that only the work required to complete the project successfully is executed. The processes of Project Scope Management are:

1. Plan Scope Management – that is creating the scope management plan, which determines how the project and product will be defined, validated and controlled. (p. 134)
2. Collect Requirements – this is gathering detailed requirements of the final product or service. (p.138)
3. Define Scope – providing a detailed description of the project and product. (p.150)
4. Create WBS – the Work Breakdown Structure is a detailed breakdown of the project activities and deliverables to the simplest components. (p. 156)
5. Validate Scope – this is seeking the approval of the deliverables (p.163)
6. Control Scope – ensuring the scope remains on track according to the scope management plan. (p.167)

Figure 5 shows an overview of Project Scope Management.

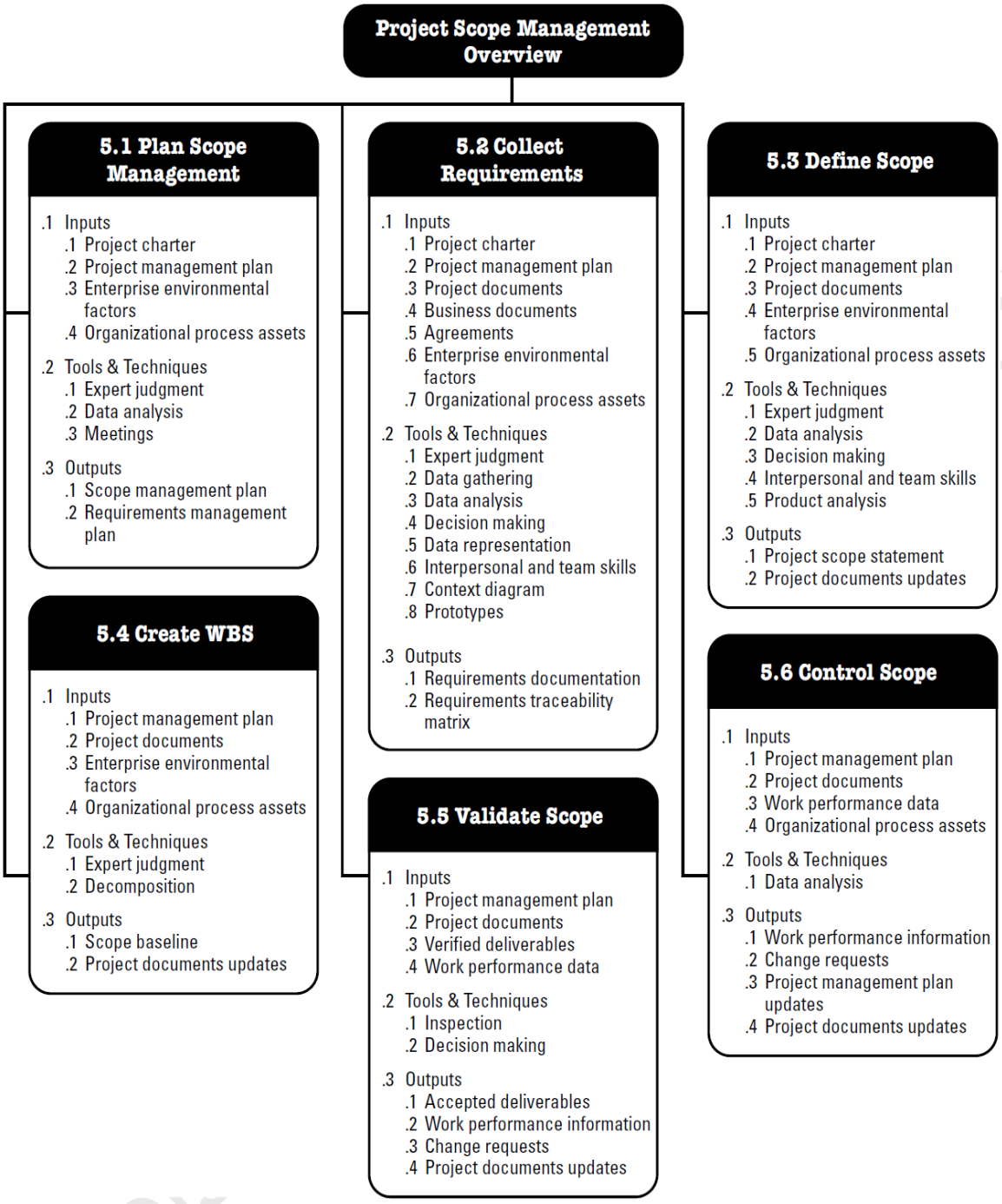

Figure 5 PMBOK® Guide Project Scope Management Overview
From *PMBOK Guide 6th Ed)* (p. 130) by PMI, 2017, Newtown Square, PA. Copyright 2017 by PMI Inc.

2.1.6.3 Project Schedule Management

Project Schedule Management refers to the processes required to ensure the timely delivery of the project. It provides a detailed plan of how and when the project will deliver the products, services or results. The process also provides communication of expectations of the project stakeholders and is used as the basis for reporting on performance (PMBOK, p.173-175). The Project Schedule Management processes are described below.

1. Plan Schedule Management – this process determines how the project schedule will be developed, managed, executed and controlled by setting policies, procedures and documentation. (p. 179)
2. Define Activities – this process identifies and documents the work to be executed in order to produce the project deliverables. This process decomposes the work down to the most single task and produces the Work Breakdown Schedule (WBS). (p.183)
3. Sequence Activities – this process documents the relationships among the project activities and provides a logical sequence of the work so that the project can be efficiently executed. (p.187)
4. Estimate Activities Durations – having defined and sequenced the activities, it is important to know how long each activity will take to be completed. This process estimates the length of time each activity needs to be completed given the resources allocated to it. (195)
5. Develop Schedule – this process analyses the activity sequences, durations and resource requirements and creates a schedule model for the project. It identifies start and end dates, milestones and the critical path. (p.205)
6. Control Schedule – as with every knowledge area control is necessary. This process monitors the schedule to ensure it remains as planned and also manages changes when necessary. (p.222)

Figure 6 shows the overview of Project Schedule Management.

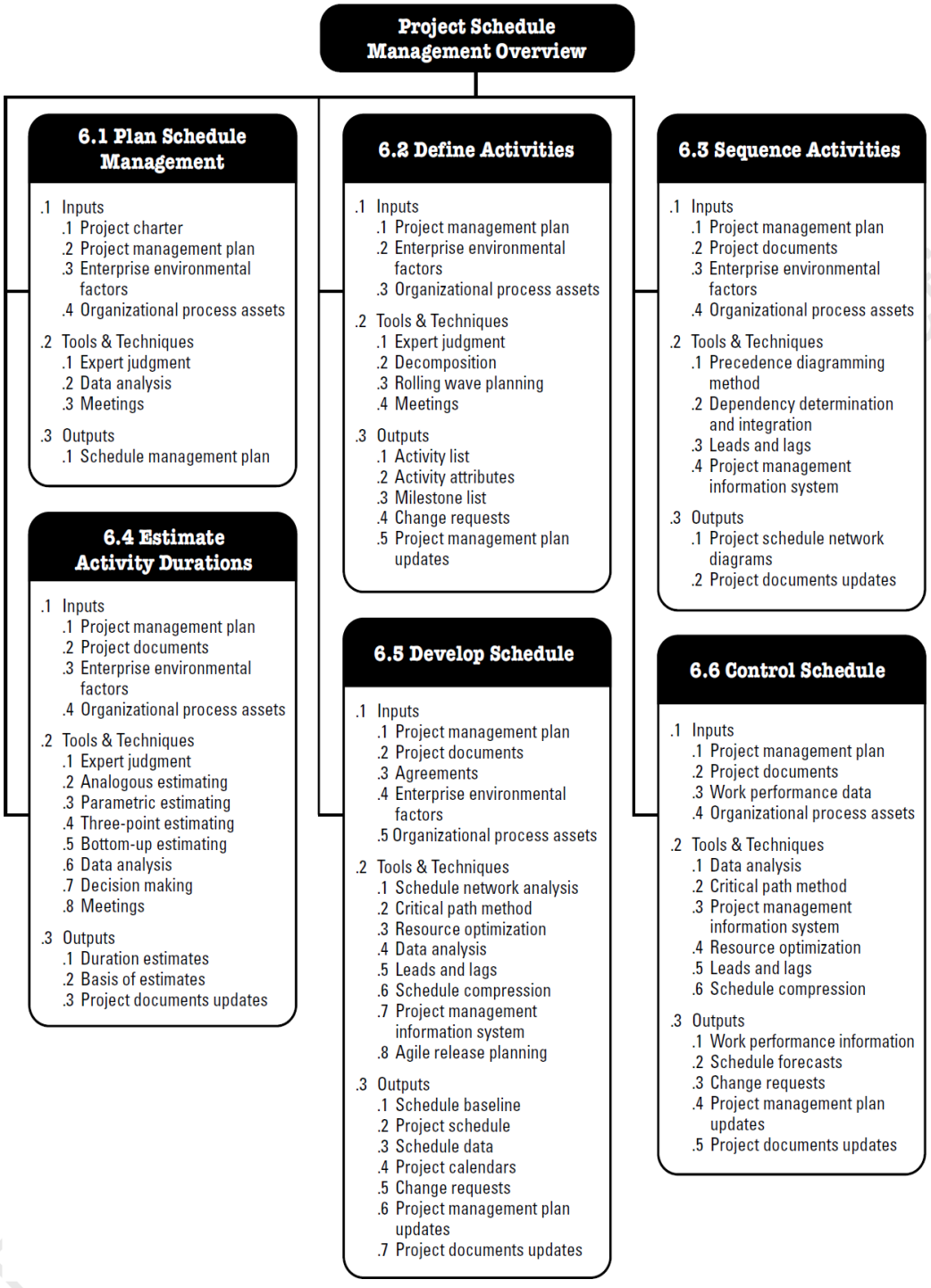

Figure 6 PMBOK® Guide Project Schedule Management Overview
From *PMBOK Guide 6th Ed)* (p. 174) by PMI, 2017, Newtown Square, PA. Copyright 2017 by PMI Inc.

2.1.6.4 Project Cost Management

Every project has a cost. Project Cost Management involves processes of planning, estimating, budgeting, financing, funding, managing and controlling cost (PMBOK 2017, p. 231). The processes are:

1. Plan Cost Management - this process determines how the costs will be estimated, budgeted, monitored and controlled.
2. Estimate Costs – this process determines the cost of resources needed to complete the project work. It is not an actual cost but an approximation.
3. Determine Budget – the budget is an aggregate of the estimated cost of each activity in order to produce the cost baseline. Added to the cost baseline are the contingency reserves - risks and management reserve, which should cover unexpected risks.
4. Control Costs – processes necessary to monitor project costs and manage changes to the cost baseline.

Figure 7 shows the Project Cost Management overview.

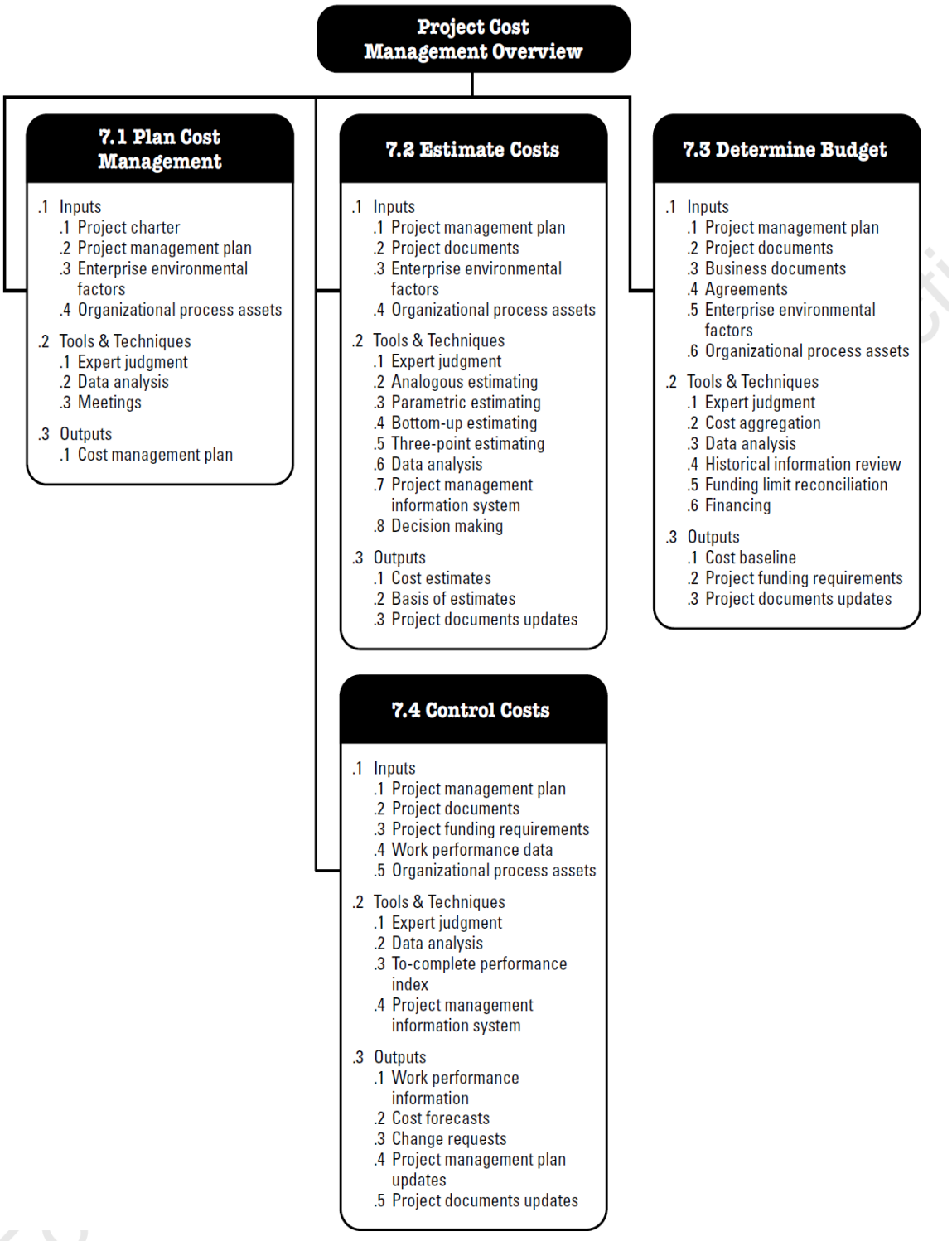

Figure 7 PMBOK® Guide Project Cost Management Overview
From *PMBOK Guide 6th Ed)* (p. 232) by PMI, 2017, Newtown Square, PA. Copyright 2017 by PMI Inc.

2.1.6.5 Project Quality Management

Regardless of how timely and cost efficient a project is being managed, if the quality of the project does not meet the stakeholders' objectives and requirements the project may fail. Project Quality management consists of processes to incorporate the organization's quality standards into the planning, managing and controlling of the project and product (PMBOK p.271). The processes are:

1. Plan Quality Management – this process identifies the quality requirements and standards of the project deliverables and determines how compliance will be fulfilled.
2. Manage Quality – this process converts the quality plan into activities that incorporates the organization's quality policies.
3. Control Quality – this process assesses the performance of the project activities to ensure the project outputs meet the stakeholders' expectations.

Figure 8 shows the Project Quality Management overview.

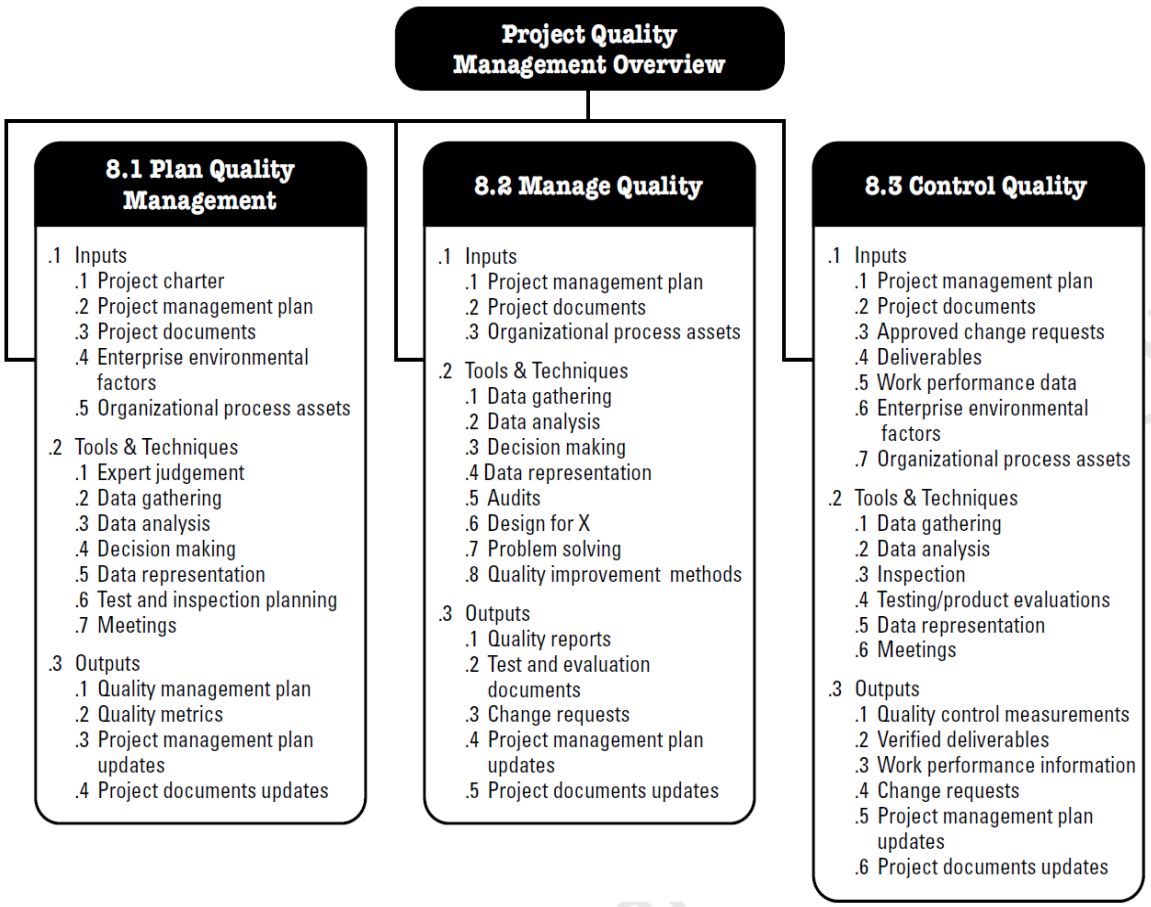

Figure 8 PMBOK® Guide Project Quality Management Overview
From *PMBOK Guide 6th Ed)* (p. 272) by PMI, 2017, Newtown Square, PA. Copyright 2017 by PMI Inc.

2.1.6.6 Project Resource Management

A project is executed by using resources. These resources include human, equipment, materials, facilities and infrastructure. Project Resource Management includes the processes of identifying, acquiring and managing the resources needed to complete the project (PMBOK 2017, p. 307). The processes are described below.

1. Plan Resource Management – this process determines how the resources needed will be estimated, acquired, managed and used.
2. Estimate Activity Resources – in this process, the team resources and the type and quantities of the materials, equipment and supplies are estimated.

3. Acquire Resources – having estimated the quantity and types of resources needed for a successful project this process obtains those resources, including the human resource.
4. Develop Team – an important element in acquiring resources is the team resource. This process seeks to develop the team members by identifying, building, maintaining, motivating, leading and inspiring them.
5. Manage Team – in addition to developing the team to be the best team, managing the team is important. This process includes employing different management techniques such as providing feedback and resolving issues in order to foster teamwork and creating high performance.
6. Control Resources – this process is performed throughout the project and ensures that the needed resources are allocated as planned, that the resources are correctly assigned and that the resources are used in the planned manner.

Figure 9 shows an overview of Project Resource Management.

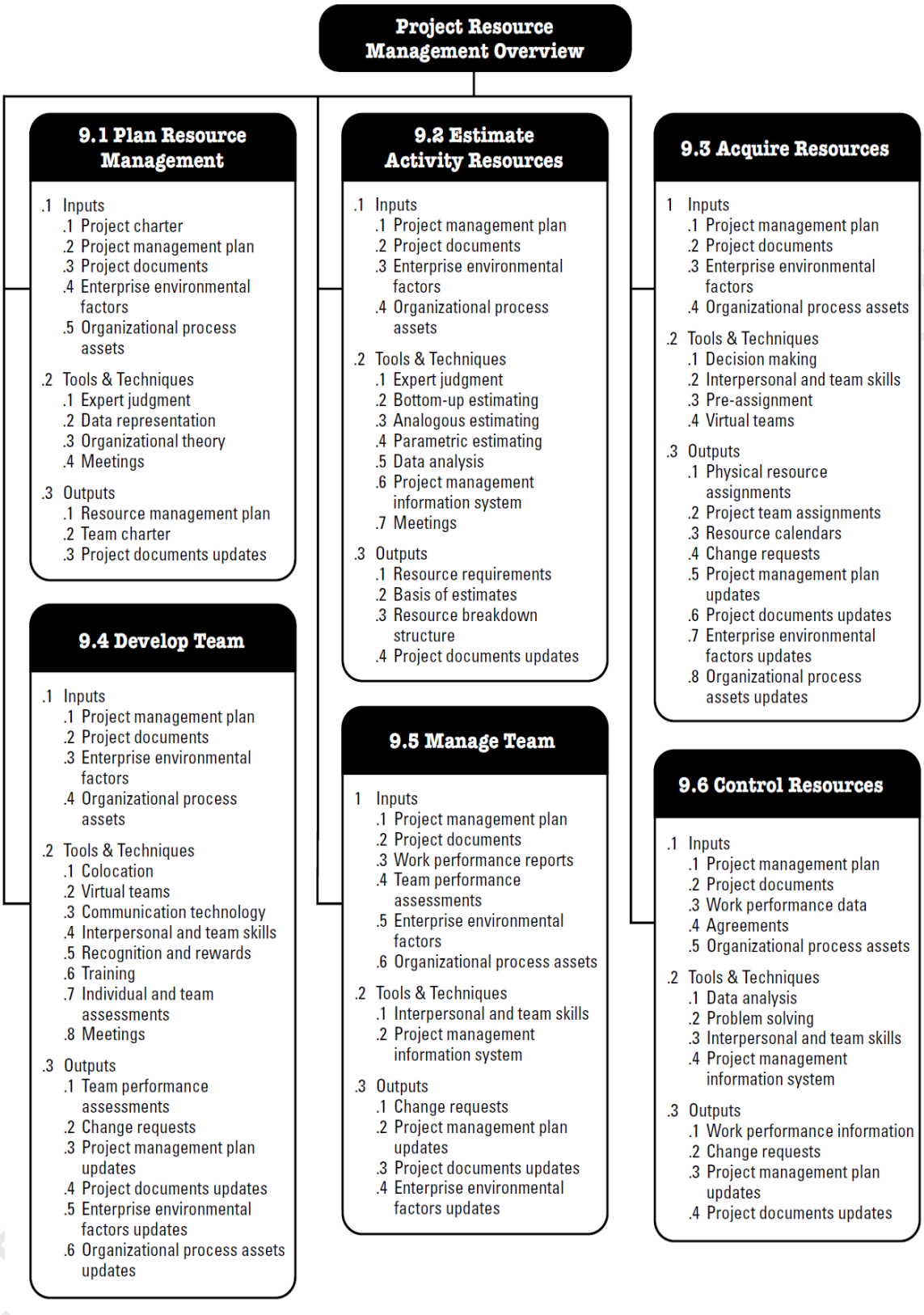

Figure 9 PMBOK® Guide Project Resource Management Overview
From *PMBOK Guide 6th Ed)* (p. 308) by PMI, 2017, Newtown Square, PA. Copyright 2017 by PMI Inc.

2.1.6.7 Project Communications Management

Important to the success of any project is the communication of information relating to the project to all stakeholders, whether internal or external. Miscommunication of information can create much confusion on a project. Project Communications Management is concerned with ensuring that information needs of the project are met (PMBOK 2017, p. 359). The processes are:

1. Plan Communication Management – this process develops an approach for communication activities based on each stakeholder's needs and project needs. It also includes deciding how information will be stored, retrieved and disposed of.
2. Manage Communications – this process ensures effective communications by choosing appropriate communication methods, technologies and techniques. It is concerned with the timely and appropriate collection, creation, distribution, storage, retrieval, management and disposal of project information.
3. Monitor Communications – this process determines if the communications activities have been as effective as they were designed to be and makes the necessary adjustments.

Figure 10 gives the Project Communications Management overview.

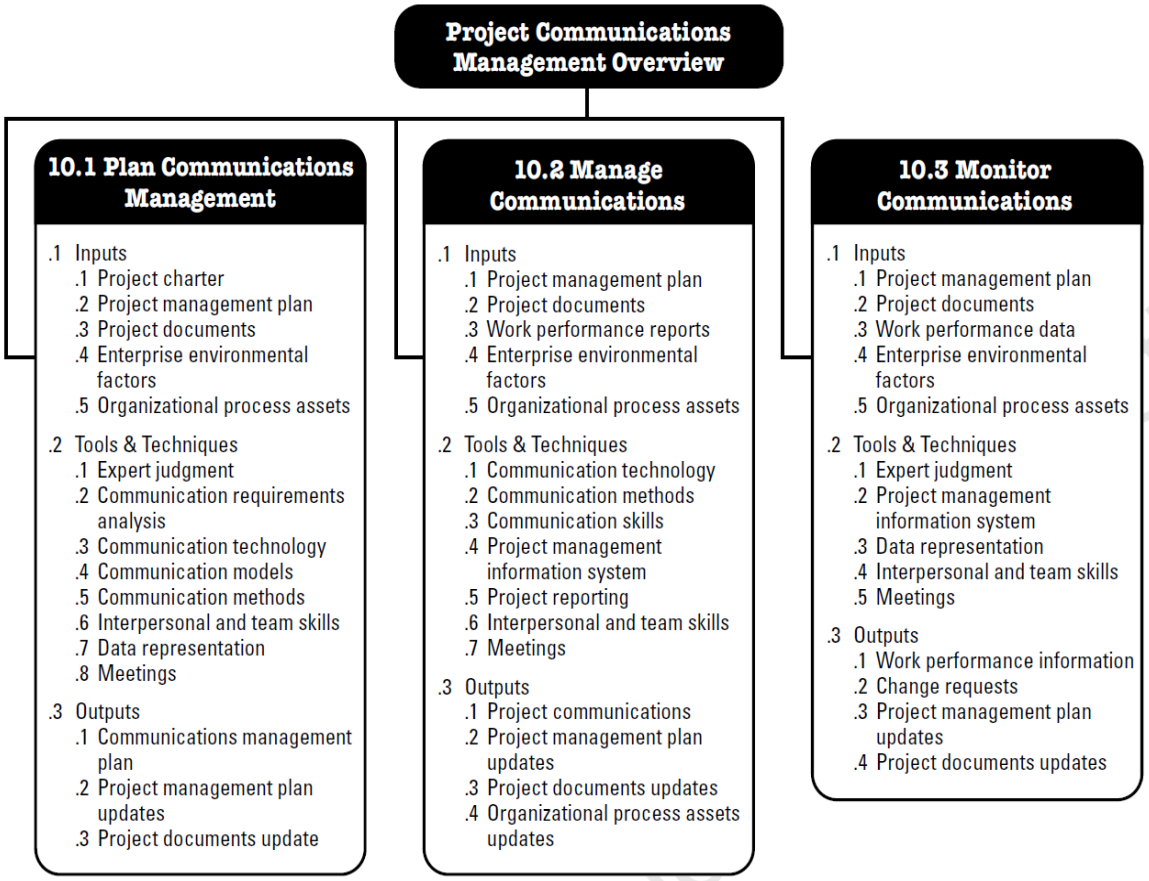

Figure 10 PMBOK® Guide Project Communications Management Overview
From *PMBOK Guide 6th Ed)* (p. 360) by PMI, 2017, Newtown Square, PA. Copyright 2017 by PMI Inc.

2.1.6.8 Project Risk Management

Projects are risky ventures because they are unique, one of a kind, complex undertakings. If unmanaged, project risk can cause the project to go off course and fail. Project risk occurs through sources of uncertainty and fall into two categories – individual project risk and overall project risk. Individual project risk is an uncertain event or condition, that if occurs, has a positive or negative impact on one or more project objectives; while overall project risk is the effect of uncertainty on the project as a whole, arising from all sources of uncertainty including individual risks (PMBOK, p.397). The processes involved in Project Risk Management are as follows:

1. Plan Risk Management – this process determines how risk management activities will be conducted. It should begin at the inception of the project and should be completed before the project commences (p.401).

2. Identifying Project Risk – this process identifies both individual and overall project risks. The participants in this process may be wide ranging and may include project manager, project team, subject matter specialists and customers (p. 411).
3. Perform Qualitative Risk Analysis – qualitative risk analysis is prioritizing individual project risks based on their probability of occurrence. It identifies the risk owner who will be responsible for the risk response and implementation (p. 419).
4. Perform Quantitative Risk Analysis – in this process the risks are ranked according to priority and are analyzed to determine their impact on the project budget or schedule (p.428).
5. Plan Risk responses – this process identifies, develops and selects the best strategies for responding to the identified risk. Risk responses fall into four categories – avoid risk, mitigate risk, accept risk and transfer risk.
6. Implement Risk Responses – this process implements the risk responses agreed upon in the plan risk response process (p.437).
7. Monitor Risk – this is the process monitors the risk response plans, tracks identified risks, identifies and analyses new risks and evaluates the effectiveness of the risk process (p. 453).

Figure 11 shows the Project Risk Management overview.

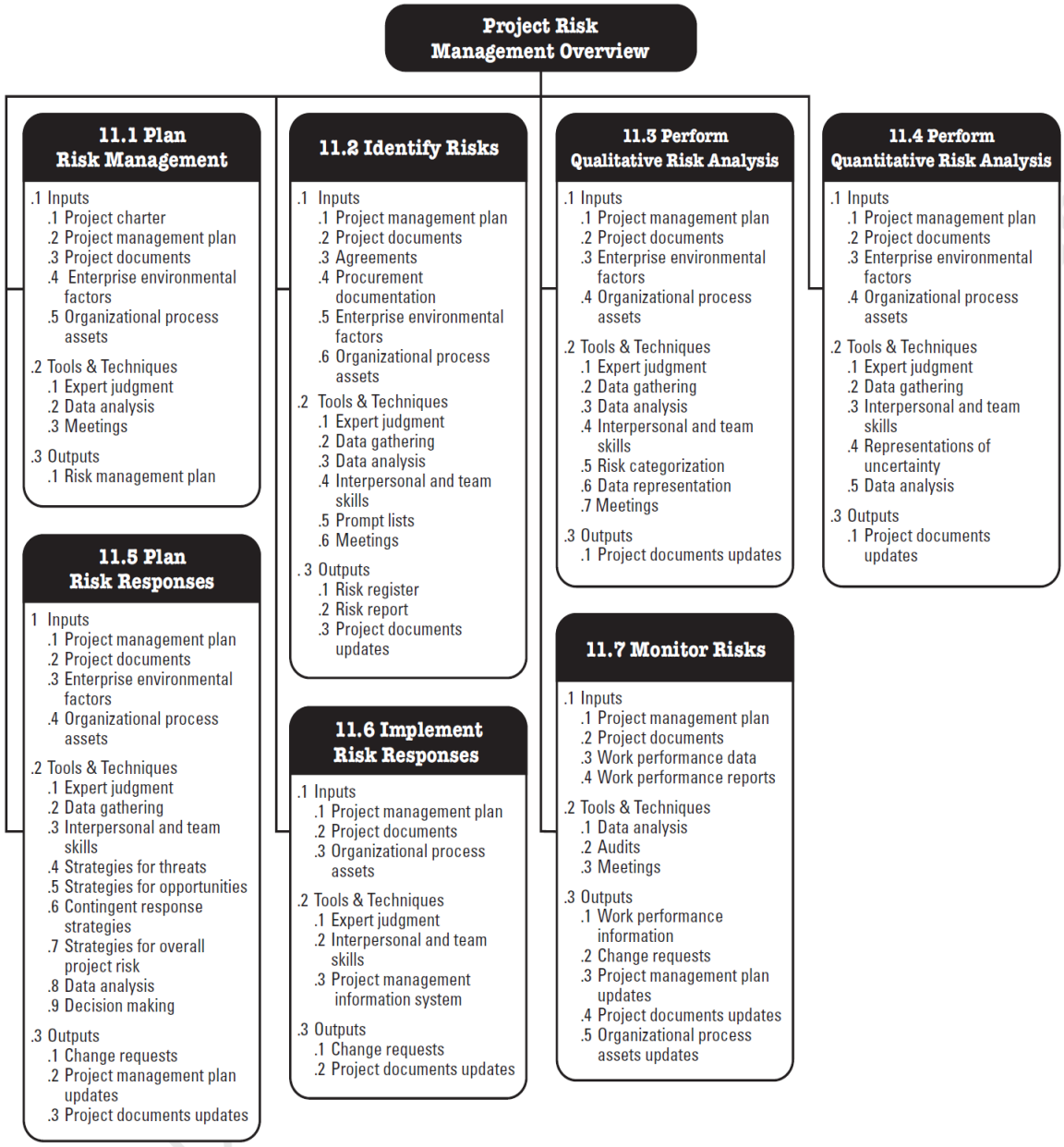

Figure 11 PMBOK® Guide Project Risk Management Overview
From *PMBOK Guide 6th Ed)* (p. 396) by PMI, 2017, Newtown Square, PA. Copyright 2017 by PMI Inc.

2.1.6.9 Project Procurement Management

Once project resources have been identified the next step is to source the products, services and supplies needed from outside the project team. The procurement management process involves procurement techniques such as bidding, negotiations and tendering. The project manager should have an understanding of the legal implications of purchasing contracts and has to manage relationships with the suppliers (PMBOK 2017, p. 459). The processes of project procurement management are as follows:

1. Plan Procurement Management – this process determines how and where to acquire goods and services needed for a successful project outside the project team.
2. Conduct Procurements – in this process the sellers are selected and contracts are awarded.
3. Control Procurements – this process is concerned with managing and maintaining the relationships with sellers, monitoring contract performance and making adjustments as necessary.

Figure 12 gives the Project Procurement Management overview.

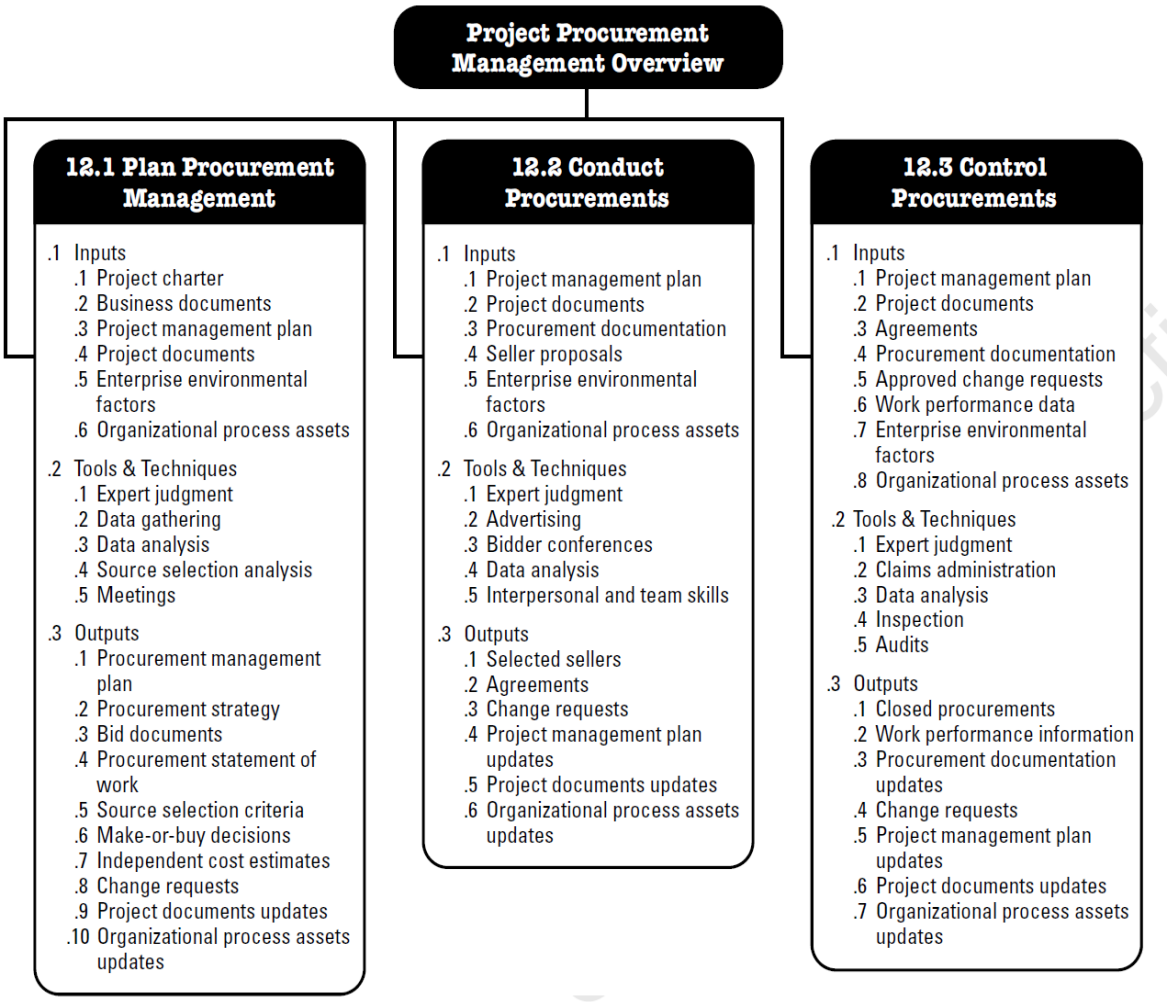

Figure 12 PMBOK® Guide Project Procurement Management Overview
From *PMBOK Guide 6th Ed)* (p. 460) by PMI, 2017, Newtown Square, PA. Copyright 2017 by PMI Inc.

2.1.6.10 Project Stakeholder Management

Essential to the successful completion of any project are the varying stakeholders, who have an interest in the outcome of the project, or even the way in which the project is executed. A stakeholder is any individual, group or organization that may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a project, program or portfolio (PMBOK 2017, p.723). Stakeholders include the executing organization, government and regulating bodies, customers, communities and, of course, the project team.

Also essential to the successful completion of any project is the way in which project stakeholders are managed. The final knowledge area in Project Management is Project Stakeholder Management. Project Stakeholder Management is the processes of identifying people, groups or organizations that may be impacted by the project; analyzing their expectations; and developing appropriate strategies for effectively engaging those stakeholders in project decisions and execution (PMBOK 2017, p. 503). The processes of Project Stakeholder Management are explained below.

1. Identify Stakeholders – in this process, the stakeholders are regularly identified and analyzed to determine their interest, involvement in and impact on project success. PMBOK indicates that stakeholders are regularly identified and analyzed. This is because as the project advances, stakeholders may change – initial stakeholder may withdraw while new ones are added.
2. Plan Stakeholder Engagement – this process develops the approaches to involve stakeholders based on needs, expectations and potential impact on project. That is, decisions are made on how best to deal with each project stakeholder.
3. Manage Stakeholder Engagement – this process implements the plans established in the Plan Stakeholder Engagement process. It includes communicating and working with the stakeholders to address and meet their needs as required.
4. Monitor Stakeholder Engagement – this process is the continued monitoring of stakeholder relationships and making adjustments to the plan and strategies as required.

Figure 13 is the Project Stakeholder Management overview.

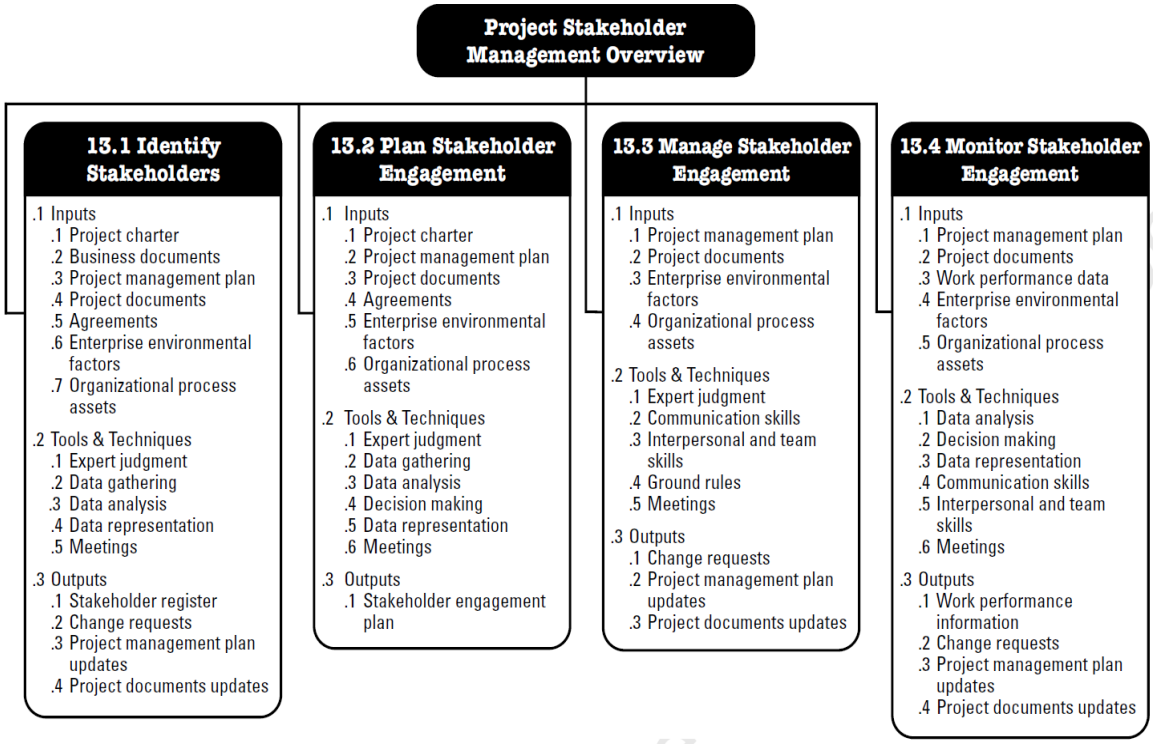

Figure 13 PMBOK® Guide Project Stakeholder Management Overview
From *PMBOK Guide 6th Ed)* (p. 504) by PMI, 2017, Newtown Square, PA. Copyright 2017 by PMI Inc.

Other applicable theory and concepts

2.1.7 Project Management Methodology

Organizations should have processes and procedures to guide the management of their projects. The collection of these processes and procedures signal the presence of a project management methodology within the organization, and the project management methodology is an input into the organization's overall strategy for delivering better performance and better results, while sustaining a competitive advantage (Implementing Organizational Project Management: A Practice Guide, p.1).

Project management methodology, also known as Organizational Project Management (OPM) methodology defines how people and the processes work to select and deliver portfolios, programs and projects (p.44). The methodology should match the organization's needs and the complexity of the projects executed by the organization.

Organizations may institute foundational project management methodology, which is instituting a project management methodology for the first time. It may also improve on an existing methodology. This graduation project is concerned only with foundational organizational project management methodology.

The PMI's Implementing Organizational Project Management: A Practice Guide (p. 45-47) identifies and describes the steps for developing a foundational project management methodology. The steps are here listed:

1. Establish a definition for project management – the organization must identify and define the parameters of what project management is and is not to it.
2. Establish a definition for project – Similarly, the organization must define what constitutes a project relevant to the organization versus what is routine operations. The definition should include scope, cost and duration.
3. Develop a system to catalog all projects – This step established the information needed to register a project and how the project should be registered.
4. Determine the project management processes appropriate for each project type – this may include existing processes and procedures.
5. Document the selected project management processes using a consistent structure and format –
6. Outline the process to tailor the project management methodology to suit each project – this will allow exclusion of processes that are not applicable to a specific project.
7. Establish reporting requirements for projects.

2.1.8 Organizational Project Management Maturity (OPMM)

Whitaker (2014), in his book *The Professional Project Manager,* explains it is important that organizations are conscious of and understand their level of maturity as it relates to project management. Understanding the OPMM is knowing the organization's staff requirement for project managers, including qualifications and continuous improvement. It also entails assessing the methodology, processes, templates, and procedures that the organization uses for the management of projects (p. 23). Whitaker offers a simple

questionnaire to help organizations make an initial determination of their level of maturity. See page 25 of *The Professional Project Manager* by Sean Whitaker. He also offers an in-depth assessment called the 3PM Maturity Self-Assessment that can be downloaded from his website www.crystal.consulting/free-resources/.

The level of OPMM required differs for each organization. Whitaker (2014) further explains that the level is actually dependent on the size, cost, duration and complexity of the projects performed by the organization (p.23). Therefore, elaborate project management processes and procedures may not be necessary for organizations that engage in smaller routine projects that are similar in nature. Nonetheless, small, routine projects or large, expensive, complex projects, having appropriate project management processes and procedures in place may increase organizations' chances of successfully executing projects.

Organizational Project Management Maturity Model (OPM3) (2013) proffers another definition of organizational project management maturity. It is the presence of project management best practices within the organization. According to OPM3, the best practice is obtained when the organization successfully fulfills Capabilities and Outcomes. That is, it delivers projects consistently, predictably and successfully (p. 28).

Capabilities are the collection of resources the organization uses to deliver its projects. These resources are people, processes and technology. Outcomes are tangible evidence that the organization is using its capabilities. Outcomes may include policy documents or procedure templates (p. 29). The entire list of best practices considered by OPM3 is listed on pages 111 to 179 of the book.

OPM3

In implementing the OPM3 framework an organization must apply the 3 elements of the framework – areas of expertise, cycle elements, and OPM3 process, which comprises inputs, tools and techniques, and outputs.

Areas of Expertise

There are three areas of expertise defined by OPM3. They are:

1. Governance, risk and compliance – this address corporate governance, risk management and corporate compliance to applicable law and regulations.
2. Delivery and benefits management – this encompasses six processes, which are applied to execute the OPM3 initiative successfully. The processes are employed to understand the organization, define the scope, conduct assessment, create recommendations, select initiatives, and implement improvements.
3. Organizational change – this area of expertise examines the change that accompanies instituting the OPM3 initiative. It employs three processes – assess change readiness, initiate change and manage change.

Chart 1 The OPM3 Processes.
Reproduced from the Organizational Project Management Maturity Model (OPM3): Knowledge Foundation (p41). PMI, 2013. Copyright 2017 by Project Management Institute, Inc

	Cycle Elements		
Area of Expertise	Acquire Knowledge	Perform Assessment	Manage Improvement
Governance, Risk and Compliance	Understand OPM	Establish Plan	Measure Results
Delivery and Benefits Management	Understand Organization	Define Scope, Conduct Assessment	Create Recommendations, Select Initiatives, Implement Improvements
Organizational Change	Assess Change Readiness	Initiate Change	Manage Change

Cycle Elements

OPM3 Cycle Elements are comprised of processes required to initiate the implementation the OPM3 initiative. The elements are:

1. Understand OPM – to implement OPM3, the organization must first understand what organizational project management is and how it may be relevant to the organization.
2. Understand Organization – the OPM3 professional must understand the strategy, people, processes and technology of the organization to successfully implement OPM3
3. Assess change readiness – how open is the organization to making the necessary changes to OPM3.

Perform Assessment

Having completed the OPM 3 Cycle Elements of understanding OPM, understanding the organization and assessing the readiness for change, the next step is to actually assess the organization to determine the best OPM initiative for the organization. The perform assessment has four processes. They are:

1. Establish a plan – this plan utilizes the goals, and other organizational information to develop an assessment plan. The assessment plan seeks how the assessment would improve business performance.
2. Define scope – this process sets the parameters for what will be included in the OPM3 initiative.
3. Conduct assessment – this is done through interviews, meetings, data gathering and analyzing and producing a final report.
4. Initiate change – the change readiness assessment results are used to ensure that the change is being implemented at a rate that is acceptable to the organization.

Manage Improvement

The manage improvement element selects the most suitable improvement based on the assessments performed and implementing it throughout the organization. There are five processes related to managing improvement.

1. Create recommendations – the areas that should be improved, why they should be improved and the cost to make the improvements are determined in this process.

2. Select initiatives – the initiatives for best practices for implementation to meet project objectives are selected.
3. Implement improvement initiative – the best practice improvements are then implemented (Organizational Project Management Maturity Model, 2013, p.98)
4. Measure results – based on feedback on the implementation process, the status and progress of implementing the best practices are monitored and measured.
5. Manage change - this means ensuring that all persons involved in and/or affected by the change are achieving the goals expected goals.

2.1.9 PRINCE2 Project Management Methodology

While PMBOK is the project management methodology of choice for this FGP, it worthy of note that PMBOK is not the only project management methodology available for use. An alternative project management method is the PRINCE2 method of managing projects. PRINCE2 is an acronym which stands for PRojects IN Controlled Environments, that was developed in 1989 by the Central Computer and Telecommunications Agency. It is used by the UK government and was updated in 1996 (Lucidchart Content Team,2018).

PRINCE2 defines project as “a temporary organization that is created for the purpose of delivering one or more business products according to an agreed business case” (OGC 2009, pg. 4). Similar to the PMBOK, PRINCE2 recognizes that projects have several distinguishing characteristics from normal business operations. These characteristics are:

1. Change agent – projects are used to implement or bring about change in an organization.
2. Temporary – projects have specific start and end dates
3. Cross functional – projects temporarily combine different skills and disciplines together to achieve its stated objectives.

4. Unique – even though project may be similar in nature, there is even one detail that makes each project different from others – location, customer, project team.
5. Uncertainty – due to the above-mentioned characteristics projects are risky endeavours that introduce threats and opportunities to an organization. (pg 4).

PRINCE2 is structured on four integrated elements of principles, themes, processes and project environment. These elements are described briefly below.

PRINCE2 Principles

PRINCE2 is based on seven guiding principles, which originate from lessons learned from projects. If all seven principles are not applied to a project, then the project is not being managed using PRINCE2 methodology. The guiding principles are:

1. Continued business justification – This means that there must be a justifiable reason to start the project; the reason should remain valid throughout the life of the project; and the justification must be documented and approved (pg.11).
2. Learn from experience – Project teams must learn from previous project experiences. Lessons learned must be documented and incorporated, where necessary on subsequent projects (pg. 12).
3. Defined roles and responsibilities – Projects must have an explicit project management team structure for the people involved in the project and a defined method of communication between all parties. This structure must also have defined roles and responsibilities that engages the three primary stakeholders of the project – the business, the user and the supplier (pg. 12).
4. Management by stages – Break down the project into stages that enables management to control the project (pg. 13)
5. Management by exception – This entails delegating authority, setting up controls and putting in place an assurance mechanism (pg. 13).
6. Focus on products – This aspect uses product descriptions to define the products purpose, composition, derivation, format, quality criteria and quality method (pg. 14).

7. Tailor project to suit project environment – This enables the project manager and management team to determine the way in which the PRINCE2 method will be applied to each project (pg. 14).

PRINCE2 Themes

Prince2 presents seven themes which are integrated to provide integrated project management. The themes must be tailored to meet the scale, complexity and nature of each project. The themes are presented in the table below.

Chart 2 The PRINCE2 Themes
From Managing Successful Projects with PRINCE2 (p. 17) by TSO, 2009, Belfast, Ireland. Copyright 2009 by OGC

Theme	Description	Answers
Business Case	The project starts with an idea which is considered to have potential value for the organization concerned. This theme addresses how the idea is developed into a viable investment proposition for the organization and how project management maintains the focus on the organization's objectives throughout the project.	Why?
Organization	The organization sponsoring the project needs to allocate the work to managers who will be responsible for it and steer it through to completion. Projects are cross-functional so the normal line function structures are not suitable. This theme describes the roles and responsibilities in the temporary PRINCE2 project management team required to manage the project effectively.	Who?
Quality	The initial idea will only be understood as a broad outline. This theme explains how the outline is developed so that all participants understand the quality attributes of the products to be delivered – and then how project management will ensure that these requirements are subsequently delivered.	What?
Plans	PRINCE2 projects proceed on the basis of a series of approved plans. This theme complements the Quality theme by describing the steps required to develop plans and the PRINCE2 techniques that should be applied. In PRINCE2, the plans are matched to the needs of the personnel at the various levels of the organization. They are the focus for communication and	How? How much?

	control throughout the project.	When?
Risk	Projects typically entail more risk than stable operational activity. This theme addresses how project management manages the uncertainties in its plans and in the wider project environment.	What if?
Change	This theme describes how project management assesses and acts upon issues which have a potential impact on any of the baseline aspects of the project (its plans and completed products). Issues may be unanticipated general problems, requests for change or instances of quality failure.	What's the impact?

PRINCE2 PROCESSES

PRINCE2 methodology is consists of seven processes. These processes are defined as "a structured set of activities designed to accomplish a specific objective" (pg. 113). The processes are described below:

1. Starting up a project process – in this process it is determined whether the project is worth undertaking (pg. 121).
2. Directing a project process – Key decisions and overall project control are and carried out by the Project Board, while they delegate the day to day activities of the project (pg. 135).
3. Initiating a project process – This process establishes what is required to deliver the product, before committing to spend on the project (pg.149).
4. Controlling a stage process – In this process, the work is assigned and monitored, issues are resolved, progress is reported to the Project Board and corrective actions are taken where and when necessary (pg. 167).
5. Managing product delivery process – The formal requirements for accepting, executing and delivering project work are developed outlined in this stage (pg. 185).
6. Managing a stage boundary – In this process, the Project Board is provided with information to review the success of the current project stage, approve the next

stage plan, review the updated project plan, confirm the continuation of the project is justified and acceptability of risks (pg. 193).

7. Closing a project process – This process recognizes that the objective set out in the original project initiation plan has been achieved, and the project product is accepted (pg. 205).

Tailoring PRINCE2 to the project environment

According to the text, PRINCE2 is scalable, regardless of the size, complexity, location of a project, or the culture in which a project is to be carried out. Scaling the methodology to the project is called tailoring. Tailoring is defined as "the appropriate use of PRINCE2 ensuring adequate use of planning, controlling, governance, and use of themes and processes" (pg. 215). Additionally, PRINCE2 may not only be tailored, it may be embedded. Embedding means that PRINCE2 is the methodology adopted across the organization. The table outlines both embedding and tailoring the PRINCE2 methodology.

Chart 3 Embedding and tailoring
From Managing Successful Projects with PRINCE2 (p. 215) by TSO, 2009, Belfast, Ireland. Copyright 2009 by OGC

Embedding	Tailoring
Done by the organization to adopt PRINCE2.	Done by the project management team to adapt the method to the context of a specific project.
Focus on: ■■ Process responsibilities ■■ Scaling rules/guidance (e.g. score card) ■■ Standards (templates, definitions) ■■ Training and development ■■ Integration with business processes ■■ Tools ■■ Process assurance.	Focus on: ■■ Adapting the themes (through the strategies and controls) ■■ Incorporating specific terms/language ■■ Revising the Product Descriptions for the management products ■■ Revising the role descriptions for the PRINCE2 project roles ■■ Adjusting the processes to match the above.
Guidance in *PRINCE2 Maturity Model*.	Guidance in this manual.

3 METHODOLOGICAL FRAMEWORK

In developing the methodological framework research methods, information sources, tools, assumptions, constraints and deliverables are employed. This chapter address the components that will be used to develop the chosen topic.

Merriam-Webster online defines methodology as “a body of rules, methods or postulates employed by a discipline: a particular procedure or set of procedures”. At the same time, the University of Witwatersrand, Johannesburg online library guide, defines research methodology as “the specific procedures or techniques used to identify, select, process and analyze information about a topic”. This chapter will examine the research methodologies that will be used to complete this Final Graduation Project.

Information sources

Information sources are the origins from which information and data used to develop a research project are gathered. Information can come from anywhere – books, websites, journals, conversations, public and private documents, personal experiences, interviews, videos, etc. It is important, however, to ensure the validity of the information used. This is done by evaluating the information source. According to Research 101 – Ithaca College Library online, sources should be evaluated using the ACCORD Method, which evaluates information sources as follows:

- Agenda – why was the information published? Advertising, religious, political?
- Credentials – who is the author of the information? What are the author’s qualifications?
- Citations – are other sources of work cited? What are the sources cited?
- Oversight – was the published work reviewed or edited?
- Relevance – is the information relevant to topic being researched?
- Date – how recent was the information published or last updated

Information sources are can be divided into two main categories – primary sources and secondary sources. The categories of information are described below.

3.1.1 Primary sources

According to Fraenkel and Wallen (2003), primary sources (of information) are publications in which researchers report the results of their studies. These are original sources or information where the author communicates his/her finding directly. Primary sources include interview transcripts, autobiographies, logs, original publications, video recordings, audio recordings and original documents.

The primary sources of information that will be used for this Final Graduation Project include books, interviews, minutes of meetings, policy and procedure documents and other publications.

3.1.2 Secondary sources

Bell (2010) describes secondary sources as interpretations of the events of the period under review based on primary sources. Secondary information sources are restatements or interpretations of the works or others. They are sometimes considered to be less objective than primary sources. The most common secondary sources include encyclopedias, dictionaries and research review (Wallen & Fraenkel, 2003).

The secondary sources of information that will be used for this Final Graduation Project include online dictionaries, articles and blogs.

Chart 4 Information sources (Source: K. Sterling, Author, 2019)

Objectives	Information sources	
	Primary	Secondary
1. To assess the current project management practices used in the Central Housing and Planning Authority in order to establish the	1. Interviews 2. Minutes of meetings 3. Policy and procedure documents 4. Organizational	

Objectives	Information sources	
	Primary	**Secondary**
baseline for the proposal of methodology for Project Management.	Memos	
2. To develop a methodology for the management of projects undertaken by CHAPA.	1. PMBOK 6th edition	1. Text/reference books 2. Articles 3. Blogs 4. Videos
3. To provide a framework within which projects undertaken by CHAPA can be successfully intiated, planned and executed.	1. Project Management books 2. PMBOK 6th edition 3. Interviews	1. Text/reference books 2. Articles 3. Blogs 4. Videos
4. To develop templates, forms and procedures to govern the initiation, planning, executing, monitoring and controlling, and closing of projects within the organization.	1. Books on Project Management 2.	1. Text/reference books 2. Articles 3. PMI Website 4.

Research methods

There are different posits on what constitutes research methods. Creswell (2009) suggests the term research design and defines research design as plans and procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis. In his book, *Research design: Qualitative, quantitative, and mixed methods approach*, he advances three types of research design – qualitative, quantitative and mixed methods. Contrastingly, Neuman (2003) posits two types of research methods – basic and applied. However, he describes the techniques for collecting data as being qualitative or quantitative. McBride (2010) also expounds on research being either basic or applied.

The research methods mentioned above are examined below.

Basic research. Basic research seeks to understand a fundamental knowledge of social behavior. It focuses on how the social world operates, what constitutes social norms, why social relations are a certain way and why society changes (Neuman, 2003). It is a scientific method of research that provides a foundation for knowledge. It serves primarily the scientific community.

Applied research. Applied research is conducted to address a particular concern or to solve a problem for an employer. This method is used primarily by decision makers, managers, committees and officials (Neuman, 2003).

Qualitative research. Qualitative research is interested in how humans arrange themselves in social settings (Berg, 2001). It seeks to explore and understand the meaning individuals and groups ascribe to a social or human problem (Creswell, 2009).

Quantitative research. Quantitative research is “a means of testing objective theories by examining the relationship among variables” (Creswell, 2009, p.4).

Mixed methods research. Mixed methods research utilizes both qualitative and quantitative research methods.

Upon further examination, it is evident that applied research corresponds to qualitative research, while basic research corresponds to quantitative research.

Throughout this Final Graduation Project, the qualitative and applied research methods will be used.

Chart 5 Research Methods (Source: K. Sterling, Author, 2019)

Objectives	Applied Research Method	Qualitative Research Method
1. To assess the current project management practices used in the Central Housing and Planning Authority in order to establish the baseline for the proposal of methodology for Project Management.	The applied research method will be used to understand the current processes and procedures for initiating, executing and closing projects at CHAPA.	The qualitative research method will be used to understand how staff member feel about the way in which projects were initiated, executed and closed by CHAPA.
2. To develop a methodology for the management of projects undertaken by CHAPA	The applied research method will be used to find best practices in project management that can be employed at CHAPA	The qualitative research method will be used to obtain staff's and stakeholder's input into project management policy and procedures
3. To provide a framework within which projects undertaken by CHAPA can be successfully intiated, planned and executed.	The applied method will be used to research information on formulating the framework for project methodology for	The qualitative research method will not be used for this objective.

Objectives	Applied Research Method	Qualitative Research Method
	CHAPA.	
4. To develop templates, forms and procedures to govern the initiation, planning, executing, monitoring and controlling, and closing of projects within the organization.	The applied research method will be used to research information of formulating templates, forms and procedures for use in managing projects at CHAPA.	The qualitative research method will be used to obtain staff and stakeholders feedback on the forms, templates and procedures being formulated for managing projects at CHAPA.

3.1.3 Tools

PMBOK defines tool as something tangible, such as a template or software program, used in performing an activity to produce a product or result (p. 725). A research tool, therefore is a process or technique used to gather information, data, evidence or any other thing needed to produce the final outcome of the research. Research tools should be tailored to the type of information to be collected. They may vary in interpretation, complexity, design and administration (Pandey 2015, p. 57).

Tools and techniques used in research include questionnaires, interviews, schedules, observation techniques and rating scales. Each tool is described below.

1. Questionnaire – a questionnaire is a list of questions related to the topic being examined. It is a prepared form distributed randomly to the sample population with the aim of getting a general idea of the views of the whole population.

2. Interviews -interviews are one on one exchanges between two persons, one of whom is the interviewer and the other the interviewee. The idea is to exchange ideas and to gather information.
3. Schedules – schedules are basically a prepared questionnaire used in an interview. The difference is that a schedule is a more structured and direct interview.
4. Observation techniques -this is the evaluation of behavior of persons in their natural situations. It is the most common evaluation technique and is used to evaluate performance, interests, attitudes and values towards life problems and situations (Pandey 2015, p. 63-64).
5. Rating scales – this is rating expressed opinions on a scale of values. This method systemizes the expression of opinion concerning a trait (Pandey 2015, p. 66).

For this Final Graduation Project, the main research tools will be interviews and schedules.

Chart 6 Tools used for FGP (Source: K. Sterling, Author, 2019

Objectives	**Tools**
1. To assess the current project management practices used in the Central Housing and Planning Authority in order to establish the baseline for the proposal of methodology for Project Management.	1. Interviews 2. Schedules
2. To develop a methodology for the management of projects undertaken by CHAPA	1. Interviews 2. Examination of documents

3. To provide a framework within which projects undertaken by CHAPA can be successfully intiated, planned and executed.	1. Interviews
4. To develop templates, forms and procedures to govern the initiation, planning, executing, monitoring and controlling, and closing of projects within the organization.	1. Interviews

3.1.4 Assumptions and constraints

An assumption is a factor in planning that is considered to be true, real or certain, without proof of demonstration (PMBOK 2017, p.699). It is considered to be true in the future based on information held today. Though considered to be true assumptions may not turn out be so. If assumptions prove to be false, they add to the risk of the project.

Constraints are limiting factors that will affect the execution of the project. In Project Management there are three major constraints, which a failure in any one can gravely impact the successful completion of the project. Those major constraints, usually called the triple constraints are scope, schedule and cost. A major variation in any of the triple constraints can also affect a fourth area – quality. Additionally, a major variation in any one of the triple constraints will also affect the other constraints.

The assumptions and constraints related to this Final Graduation Project are described below.

Chart 7 Assumptions and Constraints (Source: K. Sterling, Author, 2019)

Objectives	Assumptions	Constraints

1. To assess the current project management practices used in the Central Housing and Planning Authority in order to establish the baseline for the proposal of methodology for Project Management.	1. Relevant persons to be interviewed will willing participate 2. Relevant documents needed to assess current practices at CHAPA will be available.	1. Limitations on time to conduct research nay affect timely completion of project 2. Inability to reach persons involved in previous projects
2. To develop a methodology for the management of projects undertaken by CHAPA.	1. Information needed to develop the methodology will be easily obtainable.	1. Limitations on time to conduct research may affect timely completion of project.
3. To provide a framework within which projects undertaken by CHAPA can be successfully intiated, planned and executed.	1. Information needed to develop the methodology will be easily obtainable.	1. Limitations on time to conduct research may affect timely completion of project.
4. To develop templates, forms and procedures to govern the initiation, planning, executing, monitoring and controlling, and closing of projects within the organization.	1. Information needed to create forms and templates and develop procedures will be readily available 2. Stakeholders consulted will offer meaningful ideas	1. Limitations on time to conduct research may affect timely completion of project.

3.1.5 Deliverables

A deliverable is a unique and verifiable product, result or capability to perform a service that is required to be produced to complete a process, phase or project (PMBOK, 2017, p. 704). In other words, a deliverable is the tangible result of achieving each objective. The deliverables of this Final Graduation Project are outlined below.

Chart 8 FGP Deliverables (Source: K. Sterling, Author, 2019)

Objectives	Deliverables
1. To assess the current project management practices used in the Central Housing and Planning Authority in order to establish the baseline for the proposal of methodology for Project Management.	A report detailing the results of the assessment of the current project management practices at CHAPA
2. To develop a methodology for the management of projects undertaken by CHAPA	A design for the proposed methodology to govern projects at CHAPA
3. To provide a framework within which projects undertaken by CHAPA can be successfully intiated, planned and executed.	A design of the framework for projects undertaken by CHAPA
4. To develop templates, forms and procedures to govern the initiation, planning, executing, monitoring and controlling, and closing of projects within the organization	Templates and forms to be included in the final project report

4 RESULTS

This FGP was developed on Central Housing and Planning Authority of Antigua and Barbuda, instituted to provide housing for low and middle-income citizens. As part of its operations the execution of housing projects have the norm for the organization. However, the failure of many of these projects have occurred in one way or another. Failure has occurred due to three main reasons – schedule, cost and quality.

What has been evident, particularly with the last two major housing projects undertaken by the organization, is that costs ballooned excessively because of extended schedules and inferior workmanship. Even after the houses were sold, customers consistently complained about structural and finishing problems, causing CHAPA to spend considerable amounts on rectifying those issues.

The specific objectives of this FGP were:

1. To assess the current project management practices used in the Central Housing and Planning Authority in order to establish the baseline for the proposal of methodology for Project Management.
2. To develop a methodology for the management of projects undertaken by CHAPA.
3. To provide a framework within which projects undertaken by CHAPA can be successfully initiated, planned and executed.
4. To develop templates, forms and procedures to govern the initiation, planning, executing, monitoring and controlling, and closing of projects within the organization.

The activities carried out and the results of the activities for each objective are detailed.

4.1. Assessment of current Project Management practices

According to the OPM3, the first step to developing and implementing a project management methodology for any organization is to acquire knowledge. Knowledge of the organization is acquired by carrying out an assessment of the organization. The assessment seeks understanding of not only the functions, vision and products

of the organization, but also the project management practices that currently exists. Specific objective 1 is to assess the current project management practices to determine a baseline for the proposal of methodology for Project Management.

Several techniques were used to assess the current project management practices of CHAPA. These techniques were 1) 3PM Maturity assessment completed by the Accountant and the HEO; 2) interviews with former personnel who would have been directly involved in some aspect of project within the organization; 3) personal experience of project management within the organization.

3PM Maturity Assessment

To understand what currently exists in CHAPA, firstly, a 3PM Maturity Assessment of the organization was conducted. The 3PM assessment was developed by Sean Whitaker of Crystal Consulting, New Zealand and was retrieved from the website http://crystal.consulting/free-resources/. This assessment, through a rating scale of 0 to 5, assesses the maturity of the organization in relation to Project Management. It seeks to determine the strength of the organization's knowledge and use of Project Management best practices. The assessment was performed by the Housing Executive Officer (HEO) of CHAPA, and the Accountant (who is the writer of this Final Graduation Project).

The results of both assessments show that although the organization has been executing projects throughout its existence there is still much to learn and implement regarding professionally managing projects. The assessment calculates the individual scores and gives an overall score, with 0 being least mature and 5 being most mature. The assessment completed by the HEO has an overall score of 2.52, while the Accountant's assessment has an overall score of 1.68.

According to the HEO's assessment, CHAPA may be aware of several of the Project Management Knowledge areas and stand to benefit from employing them in the management of its projects. His assessment indicates three Knowledge Areas that are currently employed but can be improved on and used more efficiently and effectively. They are Procurement Management, Health, Safety and Environmental Management,

and Project Closure. The results of the HEO's 3PM Assessment summary is shown in Chart #2.

Chart 9 CHAPA HEO 3PM Maturity Assessment Summary.
Assessment template retrieved from http://crystal.consulting/free-resources/; completed by HEO

TOPIC	SCORE
Organizational Project Management	2.40
Portfolio Management	2.80
Program Management	2.40
Practitioner Competency and Capability Development	2.25
Project Management Office (PMO)	2.17
Integration Management	2.56
Scope Management	2.33
Time Management	2.00
Cost Management	2.71
Quality Management	2.20
Human Resource Management	2.25
Communications Management	2.00
Risk Management	2.80
Procurement Management	3.25
Stakeholder Management	2.75
Health, Safety & Environmental Management	3.00
Project Closure	3.00
OVERALL SCORE	**2.52**

On the other hand, the Accountant's assessment shows that the organization has an undeveloped Project Management approach. The only Knowledge Area that was assessed to currently be in use is Procurement Management. There are three areas that the Accountant assessed that the organization may be aware of but do not utilize. Those areas scored between 2 to 2.29. They are Cost Management, Human Resource Management, and Health, Safety and Environmental Management. All the other Knowledge Areas are seemingly unknown and unused by the organization. The results of the Accountant's 3PM Assessment summary is shown in Chart #3.

Chart 10 CHAPA Accountant 3PM Maturity Assessment Summary.
Assessment template retrieved from http://crystal.consulting/free-resources/; completed by CHAPA Accountant

CRYSTAL
CLARITY - STRENGTH - VALUE

TOPIC	SCORE
Organizational Project Management	1.60
Portfolio Management	1.70
Program Management	1.40
Practitioner Competency and Capability Development	1.50
Project Management Office (PMO)	1.71
Integration Management	1.67
Scope Management	1.50
Time Management	1.67
Cost Management	2.29
Quality Management	1.60
Human Resource Management	2.00
Communications Management	1.00
Risk Management	1.00
Procurement Management	3.00
Stakeholder Management	1.25
Health, Safety & Environmental Management	2.00
Project Closure	1.67
OVERALL SCORE	**1.68**

It is worthy to be noted that the HEO of CHAPA has no formal training in Project Management. On the other hand, the Accountant is the writer of this FGP and therefore possesses the theoretical background on professional Project Management. Both assessments indicate the need for policies and procedures on the management of projects within the organization to be formally established.

Interviews

In addition to assessing the project management maturity of CHAPA, it was necessary to obtain an understanding of how project management was conducted within the organization. To gain that understanding, the researcher interviewed several individuals who were integral in the execution of housing projects executed by the organization. The interviews were informal with the interviewer leading the questions. While the

researcher prepared a set of questions, the researcher led the interview and progressed based on the answers given.

The questions were designed around the project life cycle and the Project Management Knowledge Areas, and the intent was to obtain an understanding of how much the persons involved in the organization's building projects understood project management and how their understanding may have impacted the way in which project were managed in CHAPA. A sample questionnaire is placed in the annex. The questionnaire was used as a guide for the interview rather than as a definite set of questions.

Interview Results

The interviews were conducted with former and present members of CHAPA who were intimately involved with in the execution of building projects, including a former chairman of the Board of Directors. Similar to the 3PM Assessment, the interviews revealed that the discipline of Project Management is under-developed in CHAPA. Different persons perceived the Project Management process differently and therefore reported differently for certain aspects of PM. However, it was determined that there existed, and still exists, some measure of standard in relation to the monitoring of the project work.

Initiation

The interviews revealed that different persons understood the projects to be initiated differently. On one hand, the projects were initiated from a political directive, with the Minister responsible for Housing selecting a contractor to undertake a project to build houses in the country. It may be reasonably assumed that in these cases, the contractor would have presented a proposal to the Minister of Housing. The proposal would have included building methods, cost, building plans, project timelines, and the contractor's expectations of CHAPA. Once the directive was given, the Chairman of the Board of Directors, the HEO and an engineer would review the documents and determine the best way to manage the project.

Planning

Given that most projects were handed to CHAPA for execution, it may be reasonable to assume that most of the elements of planning those projects were incorporated into the project proposal. It was unclear from the interviews CHAPA's exact involvement in the planning process. Though pressed, the interviewees seemed unable to articulate clearly what the planning process looked like. However, it was made clear that the HEO and the Chairman of the Board of Directors played a major role in reviewing the project proposal for execution. An inhouse engineer or the building inspector would also review the proposal.

Once the proposal was accepted by CHAPA, a contract would be signed with the contractor. These hand-picked projects did not pass through the government's tendering process, nor requested waiver of tender because of specificity of the proposal.

Execution

With a signed contract, the contractor executes the project either in accordance with the terms of the contract, if included, or as he sees fit, if no terms are included in the contract.

Monitoring and Controlling

It became clear from the interviews that while the organization does not have a formally written policy for monitoring and controlling project, monitoring and controlling seems to be the most standardized of the project management processes used by CHAPA. The organization employed a Building Inspector, who among other duties, was required to visit building projects sites in order to inspect the work, ensuring it is being done according to the plan and timelines set out in the contract. Site visits were periodic but would take place when payment requests were made. The Building Inspector, who has construction experience, would inspect the workmanship of the contractor, insist on

changes or remedial work where and when necessary, and authorize requests for payment.

Additionally, the Building Inspector would filter requests from the contractor to the HEO. He was required to prepare written reports, which included photos, of the progress of the project.

The interviews also revealed that in addition to the Building Inspector, there were periods that the organization employed either a “project manager” or civil engineer to oversee projects. The Project Manager was employed for two specific projects that saw the development of housing communities of at least 70 houses each. The Civil Engineer was at one time sat as an advisor to the Board of Directors and would have been involved in the review of the project during the initiation phase. Currently, the Building Inspector performs the site visits and reporting.

Closing

There has been no evidence of a formal or informal closing process for projects undertaken by CHAPA. In several instances, projects were abandoned incomplete due to dispute and fall out between the organization and the contractor.

Personal Observation

As the Accountant at CHAPA, the writer of this FGP is fortunate to observe the history of project management practices within the organization. Upon joining the organization, there was one project ongoing and research revealed that the opinions expressed by the interviewees seemed to hold true, that the most projects were initiated through a political directive.

Formal project management practices were undeveloped and unused in the organization. While there may have been a position called Project Manager, there is no evidence that the holder of that position was formally trained to manage projects. And, in the absence of the position of Project Manager, the “management of projects” was undertaken by the Building Inspector and the HEO. Furthermore, it appears that the

organization equates project management to the monitoring and controlling process of the project life cycle.

It appears that the organization may not have confirmed scope, schedule, cost or quality for projects, separate from that submitted by the contractors. While in most cases these knowledge areas were embedded in the contractors' proposals, the organization accepted them wholesale without seeking independent valuation of proposals. This sometimes led to major disputes with contractors, especially those whose building practices and methods were different because they may not have understood the local building environment and practices.

Based on the results stated above, it is evident that a project management methodology is necessary for the execution of projects undertaken by CHAPA. Such methodology should be tailored to meet the idiosyncrasies of the organization. The results of the objective 1 provides the baseline for developing a project management methodology for CHAPA

4.2. Project Management Framework

A project management framework provides guidance on what is considered good project management practices across the project management profession (Whitaker 2014, p 32). One such framework is the Project Management Body of Knowledge, (PMBOK). PMBOK is not a rulebook but rather, a guidebook which provides tools and techniques for managing projects. PMBOK is not the only framework available for project management but it is the one considered for this FGP.

The core of PMBOK is the use of the project life cycle as the Project Management Processes and the management of projects using the ten Knowledge Areas. The Project Management Processes and the ten Knowledge Areas were discussed in detail in chapter 2.

Having selected PMBOK Guide as the framework of choice, the application of the framework to the organization is paramount. Based on the assessments done (3PM and interviews) it is evident that all aspects are not equally weighed in application.

Applying Project Management Processes

Initiation – CHAPA was established by an Act of Parliament which outlines the mandate of the organization. The Act can be considered the business case for all projects, since the reason for the Act is the reason for implementing projects. Furthermore, as projects are generally handed down as political directives, the directive would also be part of the initiation process.

Planning – While in most cases projects are initiated outside the organization, CHAPA is given full leverage over planning the projects. The organization should take full advantage of this process. This process may aid in the formulation of a contract that ensures the best outcome for the organization. The planning process will tailor each of the ten knowledge areas specifically for the project and the organization, and provide a blueprint for the execution, monitoring and controlling, and closing processes. As a result, all ten knowledge areas may not be utilized.

Execution - The execution of the project will be according to the contract signed with the contractor. In most cases, the contractor is responsible for executing the project. As such, CHAPA's involvement in this process may be limited.

Monitoring and controlling – This is the process over which the organization has the most control. The plans developed in the planning process can now be monitored for accuracy of execution. Developing procedures for comprehensive monitoring and controlling of the projects will add to the possibility of success for the projects.

Closing – It will be beneficial to the process of Project Management that the closing requirements are included in the contractor's contract, thus simplifying the closing process.

4.3. Methodology for Project Management

To develop the methodology for the management of projects within CHAPA, the 3PM Maturity the 3PM maturity assessment was completed. As described in section 4.2, the assessment concluded that CHAPA project management in the organization is undeveloped. How then can a project management methodology be designed and established within the organization?

1. Acknowledge the need for Project Management and Project Manager as an official position within the organization. The Project Manager function may be outsourced on a by project basis. However, it may be more fitting to have a Project Manager permanently on staff. The role may also be performed by someone already employed within the organization who has the expertise to fulfill it.

2. Determine the most suitable project management methodology for projects executed by CHAPA. The projects undertaken by the organization are usually construction projects and each subsequent stage is normally dependent upon the completion of the previous stage. Therefore, the Waterfall methodology is recommended as the most suitable methodology.

   Waterfall project management methodology is a sequential, linear process of project management in which each phase must be completed before the next can be started (Lucidchart.com, 2017). The tools, techniques and templates recommended by the PMBOK are applicable to the institution of the Waterfall methodology and should be used to develop the methodology for CHAPA. The methodology is presented in the form of a policy and procedures document for the organization.

3. Implement the chosen methodology.

Introduction

As an organization charged with the responsibility of providing affordable housing for low and middle-income earners of the country and with the development and sale of lands to the citizenry, CHAPA often engages in the execution of projects. A project is a specific endeavor that results in a unique product and is confined within a specific timeline, cost and scope. Given the definition of a project, each housing development is a project and shall be governed by these policies and procedures. These policies and procedures shall be applicable to any and all projects undertaken by the organization.

CHAPA shall adopt the Project Management Body of Knowledge (PMBOK) Guide to guide the management of all projects, and the Waterfall Methodology as the methodology used. However, the principles, requirements, inputs, tools and techniques and outcomes shall be tailored to the idiosyncrasies of the organization. This document shall be reviewed periodically to ensure continued applicability to the organization.

Project Management process

Waterfall Methodology simply means that the phases of the project are executed sequentially, and each phase must be completed before the next phase is started. Each project should go through the following phases - initiation, planning, execution, monitoring and controlling and closing. The requirements for each phase are detailed in this document. Additionally, the Ten Knowledge Areas of the PMBOK shall be applied as necessary. The ten Knowledge Areas are Project Integration Management, Project Scope Management, Project Schedule Management, Project Cost Management, Project Quality Management, Project Resource Management, Project Communications Management, Project Risk Management, Project Procurement Management, and Project Stakeholder Management.

The Project Manager shall be responsible for preparing the project plan, overseeing the execution of the project with the assistance of the Project Supervisor, maintaining the lessons learned register and finalizing the closure of the project. The Project Manager shall also receive and review project reports, be the communication liaison between the

organization and the project contractor. The Project Manager shall report to the Project Sponsor, who in the case of CHAPA, is the HEO.

Additionally, every project shall have a Project Supervisor. The Project Supervisor shall possess technical expertise in the area of the project and shall be responsible for providing technical advice and direction during the planning stages of the project, and technical oversight and monitoring during execution of the project. The Project Supervisor shall be the one responsible for reporting on the progress of the project, communicating with the project contractors on technical issues and signaling that the requirements for the completion of the project have been met. The Project Supervisor may be the Supervisor of the department related to the project or may be outsourced if the expertise is not resident in CHAPA,

Initiation

The following procedures must be followed whenever new initiatives are presented:

1. All prospective projects must be presented to the Finance Committee for first approval. A project charter shall be developed for each project using the Project Charter Template. Project proposals shall be used as input documents for the Project Charter where and when necessary.
2. All proposals shall be reviewed in detail by the Project Supervisor before being taken to the Finance Committee for approval and, the Project Supervisor shall be invited to the Finance Committee Meeting to give expert opinion on the project.
3. The Finance Committee will review the proposals to determine the feasibility and benefits of the project to CHAPA, and shall seek to determine the experience and qualifications of the contractors, the financial soundness of the contractors and their ability to successfully complete the project.
4. If the proposal is accepted by the Finance Committee, it is forwarded to the Board of Directors on the recommendation of the Finance Committee for ratification. The Board has the right to further interview the proposers of the project before giving approval.

5. For externally initiated projects, if the Board of Directors approves of the project, the proposal must then be forwarded to the Minister responsible for Housing to table in the Cabinet of Antigua and Barbuda for final approval. Once final approval is given CHAPA can now proceed with planning the project.

Planning

The planning process allows for the details of the project to be fleshed out. The Project Supervisor should be an active participant in the development of the project plans. The following project management plans shall be applicable for projects.

1. Project Scope Plan – The scope of the work to be completed shall be articulated in detail. The scope plan shall articulate the deliverables of the project, expected start and end dates, the expected cost and quality. A project scope statement shall be prepared for each project. In addition to the scope statement, a scope plan should be prepared. The scope plan may be a simple one to two-page document which elaborates the details of the scope statement. Additionally, the scope plan shall include and drawings, tables and other specifications necessary to carry out the work.

   In developing the scope plan the WBS and the Requirements Traceability Matrix (RTM) should be completed. The WBS is a breakdown of the projects down into the smaller tasks. Each deliverable is a heading, and the tasks related to each deliverable are sequentially itemized. The WBS may be shown as a table or hierarchical chart.

   Following the WBS, an RTM shall be prepared for each project. The RTM shows the link between each product requirement and the deliverables of the project. It itemizes each requirement and shows how they will be addressed by the project deliverables. Examples of the WBS and the RTM are attached.

2. Project Schedule Plan – The expected duration of the project shall be determined and a project schedule plan should be developed. The determination of the project schedule should be a collaborative effort between the organization and

the contractor. The plan should specify who has the authority to make changes to the schedule, reasons why the schedule may change, and the possible impact of schedule changes on cost, time and quality.

Where the organization is the contractor, the departments responsible for executing the project shall assist in developing the project timelines. The Schedule Management Template must be completed and added as part of the Project Plan.

3. Project Cost Plan – The project cost plan is an estimate of the expected cost of the project. The estimate is presented in a budget. In some instances, the contractor may present an estimate of the work to be completed within specific guidelines set by the organization. For example, the cost of construction to the organization may not exceed a stated amount. Estimates produced by contractors shall be reviewed the Project Supervisor for reasonableness.

   Where the organization is responsible for determining the project costs, the Project Manager shall be responsible for compiling the project cost. The supervisor of the departments involved in carrying out the project shall work with the Project Manager to compile the cost. Once the costs are determined, the project budget shall be prepared.

   Single purchases and contracts over XCD$100,000.00 shall be put to tender according to the Antigua and Barbuda Tenders Board Act. If and where necessary, a waiver of tender may be sought.

   Only the Project Sponsor shall have the authority to make changes to scope, cost and schedule. The Cost Management Template and the Cost Estimating Checklist must be completed and included as part of the Project Management Plan.

4. Project Communication Plan – Communication for projects shall flow through the Project Manager. Communication to project contractor shall include progress

reports on the execution of project by Project Supervisor. The Project Report Template shall be completed and submitted at the end of every stage to authorize payments. Any communication to and from the project contractor shall be logged in the communication log. The communication log shall indicate the date and type of the communication, the reason/issue for the communication, what action is to be taken according to the communication, status of the action. The Project Manager shall be responsible for maintaining the Project Communication Log.

5. Project Procurement Plan – Procurement is the acquisition of resources necessary for the project including contractors. All contracts and purchases over $100,000.00 shall go through the tendering process according to the Tenders Board Act. Proposals received and approved shall be forwarded to the Tenders Board of Antigua and Barbuda. Where a particular contractor is preferred, a waiver of Tender for that contractor shall be requested. Once approved, a contract shall be drawn up. The contract shall include specifications, cost, schedule, payment stages, reporting requirements, performance requirements and penalties. Contracts should be prepared by the company's lawyer.

   Contracts and purchases under $100,000.00 shall be handled by CHAPA. Small contracts shall be prepared for services between $5,000.00 and $100,000.00, according to the Petty Contracts policy of the organization. Other purchases shall be made by Purchase Orders according to the organization's purchasing policy.

6. Project Risk Plan – Every project has potentialities that may threaten the success of the project. These potentialities are called risk and managing them well will contribute to the success of the project. Every project shall have a risk register prepared. The Project Manager shall be responsible for preparing the risk register with input and consultation from the Supervisors of the organization. The risk register template shall be completed. The Project Manager shall also be responsible for monitoring the risks and ensuring the implementation of the risk response as prescribed in the risk register.

7. Project Stakeholder Plan – Our stakeholders are any persons, groups of persons or organizations who may be impacted, or perceive themselves to be impacted, by the project. Some stakeholders may make or break the project while others may have no impact on the success of the project at all. However, managing the expectations of the project stakeholders will contribute not just to the success of the project but to the smooth execution of the project. To manage the project stakeholders, stakeholders must be identified and ranked according to their interest in and their power to affect the project. The Stakeholder Communication Template shall be completed by consultation with the Supervisors, Project Sponsor, Project Manager and selected members of staff. Input may be sought from the Minister responsible for CHAPA and the Permanent Secretary of the Ministry of Housing, Lands and Urban Renewal. The Project Manager shall be responsible for the final completion of the template, and also the monitoring and update of the register

8. Project Resource Plan – The resource plan identifies the resources needed to successfully execute the project. Resources can be materials, equipment and human resources. Where CHAPA is the contractor, the supervisor of the department responsible for executing the project shall, in collaboration with the Project Manager, identify the resources needed. The supervisor shall estimate the quantity, cost and timing of the resources. The Accountant can provide the cost of staff resources needed. The Project Manager shall prepare project resource schedule based on the information provided by the supervisor and the Accountant.

Execution

Every project shall be executed according to the project plan! Details of the plan shall be included in the contractor's contract and shall guide the monitoring and controlling of the project. The Project Manager, the Project Sponsor and the relative department supervisor shall have copies of the project plan.

A copy of this Project Management Policy and Procedure document shall be distributed to every department of CHAPA for reference.

Monitoring and Controlling

The monitoring and controlling process of Project Management is imperative to the success of projects. In the monitoring and controlling process the project is assessed against the project plan to ensure that it is being executed accordingly. The monitoring and controlling process shall be carried out in the prescribed manner:

1. All projects shall be monitored by the Project Supervisor, who shall receive copies of all documents relevant to the project.
2. The Project Supervisor shall inspect the work in progress and shall require the contractor to amend any faults discovered during the execution phase. He shall also complete the fault report and follow up to ensure rectifications are made. The fault report shall be submitted to the Project Manager after every inspection.
3. The Project Supervisor is required to inspect the work completed to date in order to authorize the release of stage payments to the contractor. If the Project Supervisor is unsatisfied with the work done, he shall require the contractor to remedy the work before payment is authorized.
4. The Project Supervisor shall prepare a report on the completion of the project and shall present to the Project Manager to inform the formal acceptance and closure of the project.

Change Management

1. From time to time, changes to the original project plan may be required for the successful completion of the project. Whenever changes to the plan are necessary, the following procedures must be followed: All changes must have the approval of the Project Sponsor to be instituted.
2. The Project Supervisor will discuss with the contractor the necessary changes. The contractor should provide an estimate of the cost, time and materials needed to effect the change.

3. The Project Supervisor shall also prepare an estimate of the cost, time and materials needed to implement the changes to provide a comparative to the contractor's estimate.
4. The change request shall be submitted to the Project Manager and the HEO for review. Once approved by the HEO, a change order shall be prepared and appended to the original contract. The contractor should receive a copy of the change order.
5. The Project Supervisor shall be responsible for overseeing the implementation of the change order and reporting accordingly.

Lessons Learned

Every project presents opportunities for learning and improvement in the current and future projects. It is important that lessons learned from projects are documented so they can be considered and included in future project where necessary. Lessons learned during the execution of a project shall be recorded in the Lessons Learned Register.

The Project Manager shall be responsible for developing and maintaining the Lessons Learned Register. The Lessons Learned Register shall be reviewed during the planning stage of subsequent projects so that relevant issues can be included. The register shall also be consulted when monitoring and controlling the project in order that the wheel is not re-invented when dealing with issues that may arise.

Closing

Closing a project may occur when the project has been successfully completed and turned over by the project contractor or if the organization has halted the project for various reasons, including continuous non-performance by the contractor. The following steps should be followed when closing a project:

- Successful completion of project – When a contractor has delivered a project according to the contractual agreement and the organization is satisfied and has accepted the project, the project shall be closed according to the terms specified

in the contract. A certificate of completion (CoC) prepared by the Project Manager and signed by the Project Manager, Project Supervisor and Project Sponsor shall be issued to the contractor. Upon issuance of the CoC, all outstanding payments due to the contractor should be made. If CHAPA is unable to make the outstanding payments in full, arrangements shall be made settle the balance over time.

- Terminated projects – CHAPA has the right to terminate a project if necessary. The termination clause of the contract shall be invoked when any or all of the specified conditions for terminations have occurred. Only the Project Sponsor has the authority to terminate a project. The decision to terminate a project shall be communicated to the Project Manager who shall begin termination procedures. The termination procedures are:
    - Prepare and issue work stop order to Project Supervisor
    - Project Supervisor shall issue the stop order to contractor and secure project site according to order
    - Prepare and issue letter of termination to contractor.
    - Institute legal and/or remedial action where necessary.

Throughout the development and execution of a project, the Project Manager shall be responsible for maintaining the project file, both electronic and hard copy. The electronic copy shall be stored in a pre-selected drive on the company server. The hard copy shall be filed in the Project Manager's office. Upon completion of the project, an electronic copy shall be sent to the Project Sponsor for secondary storage, while the hard copy shall be labelled "Completed" and archived in the Strong Room.

4.4. Project Management Templates and Forms

Section 4.3 describes in detail the templates, forms and procedures that should be used I the Project Management process of CHAPA. In order to simplify the Project Management process, a catalogue of templates was obtained from the website http://crystal.consulting/free-resources/. These templates and forms were chosen because they are simple to understand, comprehensive and easy to use, and are tailorable to the needs of CHAPA. The entire catalogue was not included in the policy

and procedures developed by the FGP. However, if the need arises, additional templates are available for use.

Chart 4 below lists the templates and forms and the appendix reference.

Chart 11 Chart of Project Management templates for use in CHAPA (Source: K. Sterling, Author, 2019)

Template/Form	Appendix Reference
Project Charter	Appendix 5
Scope Statement	Appendix 6
Schedule Management Plan	Appendix 7
Cost Management Plan	Appendix 8
Cost Estimating Checklist	Appendix 9
Project Reporting Form	Appendix 10
Risk Register	Appendix 11
Stakeholder Communication Register	Appendix 12
Change Order Form	Appendix 13
Lessons Learned Register	Appendix 14
Certificate of Completion	Appendix 15
Communications Plan	Appendix 16
Procurement Management Plan	Appendix 17

5 CONCLUSIONS

1. The current Project Management practices at CHAPA were assessed by completing the 3PM assessment, conducting interviews with personnel, past and present, who were and are pivotal to projects in the organization, and through research of previous projects. Through these approaches, it was determined that the monitoring and controlling aspects of project management are seen as what Project Management is. The planning process was essentially discussions without formal documentation. Overall, the organization is unfamiliar with the principles and guidelines of professional Project Management as set out by PMBOK.
2. Re-inventing the wheel of developing a framework for Project Management at CHAPA is an unnecessary activity, as professional Project Management frameworks already exist and are readily available. The most comprehensive and applicable framework is PMI's PMBOK and the Project Life Cycle concept. This FGP concluded that integrating these concepts into the project management practices of CHAPA should contribute to the overall success rate of projects undertaken by the organization.
3. With the framework established, the methodology for Project Management in CHAPA was developed based on the responses from the interviewees and taking into account some of the difficulties observed in recent projects. In developing a suitable methodology, the FGP concluded that the need for an official Project Manager position should be established within the organization. Further, it was determined that a policy and procedures document is the best way to implement the methodology in the organization. The policy and procedures document follow the Project Life Cycle process and incorporates the Project Management knowledge areas. The documents should be reviewed periodically to ensure it continues to meet the Project Management needs of the organization and updated as necessary.
4. In developing the policy and procedures to govern project management in CHAPA, 15 forms and templates have been selected as imperative to the project management process. These forms are tailorable to each project and the

organization. The list of forms and templates offered are, however, not exhaustive.

5. A project expected to be undertaken by CHAPA was used to test the applicability of the methodology, and the templates and forms instituted by the methodology. The project's charter was developed, along with the WBS, Requirements Traceability Matrix and scope statement. The details of each of the applicable knowledge areas were then used to complete the knowledge area templates. The sample project utilized the schedule management plan, cost management plan, cost estimating, procurement management plan, risk register and communications management plan templates. This demonstrates the simplicity and user-friendliness of the instituted templates.

6 RECOMMENDATIONS

1. CHAPA, as an organization, needs a greater understanding of Project Management and its benefits to the organization. Project Management training can be offered to members of staff, especially those who work in project related department – namely Building Inspection and Maintenance, Surveying and Heavy Equipment. Management should also be trained to help make the processes seamless.
2. Workshops should be held with staff to introduce the project management methodology. The relevant staff will be able to review the policy document, ask questions and make suggestions for improvements.
3. All projects should follow the policies, and go through the procedures established, regardless of how small or brief the project may be. This will ensure that the best effort is expend on these projects.
4. The position of Project Manager should be established on the organizational chart and a suitable person should fill the position. In the event the position cannot be permanently filled, the Project Manager role may be outsourced to a qualified individual on a project by project basis.
5. The project management planning process in CHAPA need not be elaborate. Employing the templates listed in this document should simplify the planning process, while at the same time, provide all the information needed to ensure a proper project plan is in place.
6. The Project Management policy and procedures document should be periodically reviewed to ensure that it continues to be applicable to organization. Changes and adjustments should be made when needed.

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8 APPENDICES

Appendix 1: FGP Charter

PROJECT CHARTER Formalizes the project start and confers the project manager with the authority to assign company resources to the project activities. Benefits: it provides a clear start and well defined project boundaries.	
Date	**Project Name:**
18 May 2019	Proposal for Project Methodology for use at the Central Housing and Planning Authority
Knowledge Areas / Processes	**Applicacion Area (Sector / Activity)**
Knowledge areas: Project Integration Management, Project Scope Management, Project Schedule Management, Project Cost Management, Project Quality Management, Project Resource Management, Project Communications Management , Project Risk Management, Project Procurement Management, Project Stakeholders Management **Process groups: Initiating, Planning, Executing, Monitoring and Controlling, and Closing**	Quasi-government/Construction /Project Management
Start date	**Finish date**
18 May, 2019	20 December, 2019

Project Objectives (general and specific)

General objective: To develop a project management methodology for use on projects being executed by Central Housing and Planning Authority (CHAPA) – a statutory organization.

Specific objectives:

1. To assess the current project management practices used in the Central Housing and Planning Authority in order to establish the baseline for the proposal of methodology for Project Management.
2. To provide a framework within which projects undertaken by CHAPA can be successfully initiated, planned and executed.
3. To develop a methodology for the management of projects undertaken by CHAPA.
4. To develop templates and forms for Project Management in CHAPA.
5. To demonstrate the applicablity of the templates developed by using a CHAPA project

Project purpose or justification (merit and expected results)

Project failure occurs as a result of improperly planned and managed projects and project failure seems to be a recurring experience of projects undertaken by CHAPA. The last two housing projects undertaken by CHAPA encountered numerous setbacks which resulted in one being abandoned by the contractors and leaving the organization having to invest additional money to complete; while the other should have been completed within 3 years but 10 years later, discussions are now being held on how to close the project. In both instances CHAPA it appears that comprehensive project plans were not developed for either project.

This project is designed to develop a standardized framework which will govern projects undertaken by CHAPA, from initiation to closing, thereby increasing the probability of project success.

Description of Product or Service to be generated by the Project – Project final deliverables

Project management methodological framework that will govern projects undertaken by CHAPA from concept to closing.

Assumptions

Resources necessary for the successful completion of project will be readily available.

Constraints

Project must be completed in 3 months.

Preliminary risks

If time is not managed adequately quality of project deliverables will be negatively affected.
If required information is not readily available the presentation of deliverables may be delayed.

Budget

Not yet determined.

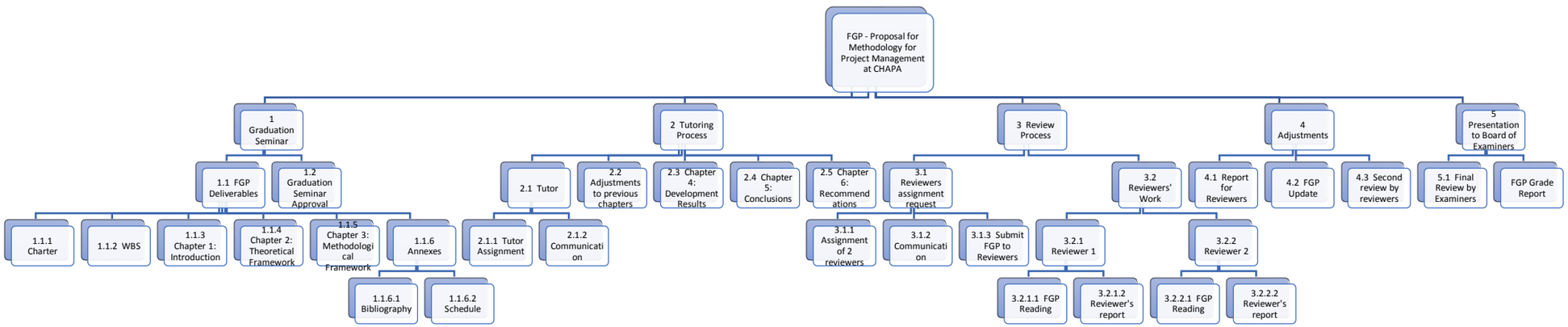
Milestones and dates

Milestone	Start date	End date
Project Charter	13 May, 2019	19 May, 2019
WBS	13 May, 2019	19 May, 2019
Introduction Chapter	20 May, 2019	26 May, 2019
FGP Schedule	20 May, 2019	26 May, 2019
Theoretical Framework Chapter	27 May, 2019	2 June, 2019
Methodological Framework Chapter	3 June, 2019	9 June, 2019
Executive Summary, Bibliography	10 June, 2019	16 June, 2019
Signed Charter	10 June, 2019	16 June, 2019
Tutor assignment and communication	29 July, 2019	31 July, 2019
Adjustments to previous chapters	1 August, 2019	7 August, 2019
Development (Results) Chapter	8 August, 2019	11 October, 2019
Conclusions Chapter	14 October, 2019	18 October, 2019
Recommendations Chapter	14 October, 2019	14 October, 2019
Reviewer's work	28 October, 2019	15 November, 2019
Adjustments	18 October, 2019	13 December, 2019
Presentation to Board of Examiners	16 December , 2019	20 December, 2019

Relevant historical information
Central Housing and Planning Authority is a statutory organization n Antigua and Barbuda established by the Slum and Clearance Act of 1948. The purpose of the organization is to upgrade th living standards of the working class citizen of Antigua and Barbuda by providing affordable housing. The organization is required to raise its own capital to fund its housing projects and does this mainly throught the sale of crown land which it acquires at heavily discounted cost. The funds raised from the sale of lands is then used to fund housing projects.
Stakeholders
Direct stakeholders: Housing Executive Officer Accountant Board of Directors Indirect stakeholders: Staff of CHAPA Minister of Housing, Lands and Urban Renewal (MHLUR) Permanent Secretary (MHLUR)

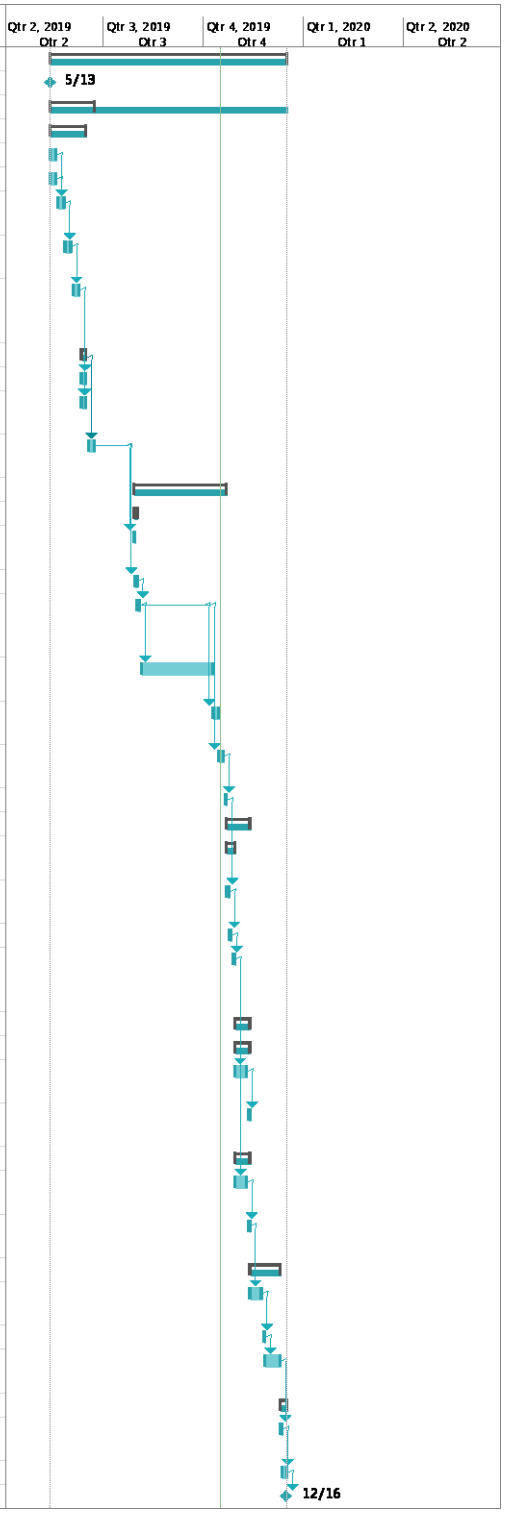
Project Manager: **Kizzy V.R Sterling**	**Signature:** 
Authorized by:	Signature:

Appendix 2: FGP WBS



Appendix 3: FGP Schedule

ID	Task Mode	Task Name	Duration	Start	Finish
1		**Final Graduation Project**	**156 days**	**Mon 5/13/19**	**Mon 12/16/19**
2		FGP Start	0 days	Mon 5/13/19	Mon 5/13/19
3		**1, Graduation Seminar**	**30 days**	**Mon 5/13/19**	**Fri 6/21/19**
4		**1.1, FGP Deliverables**	**25 days**	**Mon 5/13/19**	**Fri 6/14/19**
5		1.1.1, Charter	5 days	Mon 5/13/19	Fri 5/17/19
6		1.1.2, WBS	5 days	Mon 5/13/19	Fri 5/17/19
7		1.1.3, Chapter 1: Introduction	5 days	Mon 5/20/19	Fri 5/24/19
8		1.1.4, Chapter 2: Theoretical Framework	5 days	Mon 5/27/19	Fri 5/31/19
9		1.1.5, Chapter 3: Methodological Framework	5 days	Mon 6/3/19	Fri 6/7/19
10		**1.1.6, Annexes**	**5 days**	**Mon 6/10/19**	**Fri 6/14/19**
11		1.1.6.1, Bibliography	5 days	Mon 6/10/19	Fri 6/14/19
12		1.1.6.2, Executive Summary	5 days	Mon 6/10/19	Fri 6/14/19
13		1.2, Graduation Seminar Approval	5 days	Mon 6/17/19	Fri 6/21/19
14		**2, Tutoring Process**	**61 days**	**Mon 7/29/19**	**Mon 10/21/19**
15		**2.1, Tutor**	**3 days**	**Mon 7/29/19**	**Wed 7/31/19**
16		2.1.1, Tutor Assignment	1 day	Mon 7/29/19	Mon 7/29/19
17		2.1.2, Communication	2 days	Tue 7/30/19	Wed 7/31/19
18		2.2, Adjustments to previous chapters (if needed)	2 days	Thu 8/1/19	Fri 8/2/19
19		2.3, Chapter 4: Development Results	47 days	Mon 8/5/19	Tue 10/8/19
20		2.4, Chapter 5: Conclusion	4 days	Wed 10/9/19	Mon 10/14/19
21		2.5, Chapter 6: Recommendation	4 days	Tue 10/15/19	Fri 10/18/19
22		Tutor Approval	1 day	Mon 10/21/19	Mon 10/21/19
23		**3, Reading by Reviewers**	**15 days**	**Tue 10/22/19**	**Mon 11/11/19**
24		**3.1, Reviewers' Assignment Request**	**5 days**	**Tue 10/22/19**	**Mon 10/28/19**
25		3.1.1, Assignment of two reviewers	2 days	Tue 10/22/19	Wed 10/23/19
26		3.1.2, Communication	2 days	Thu 10/24/19	Fri 10/25/19
27		3.1.3, FGP submission to reviewers	1 day	Mon 10/28/19	Mon 10/28/19
28		**3.2, Reviewers' Work**	**10 days**	**Tue 10/29/19**	**Mon 11/11/19**
29		**3.2.1, Reviewer**	**10 days**	**Tue 10/29/19**	**Mon 11/11/19**
30		3.2.1.1, FGP Reading	9 days	Tue 10/29/19	Fri 11/8/19
31		3.2.1.2, Reader 1 report	1 day	Mon 11/11/19	Mon 11/11/19
32		**3.2.2, Reviewer**	**10 days**	**Tue 10/29/19**	**Mon 11/11/19**
33		3.2.2.1, FGP Reading	9 days	Tue 10/29/19	Fri 11/8/19
34		3.2.2.2, Reader 2 report	1 day	Mon 11/11/19	Mon 11/11/19
35		**4, Adjustments**	**20 days**	**Tue 11/12/19**	**Mon 12/9/19**
36		4.1, Report for reviewers	9 days	Tue 11/12/19	Fri 11/22/19
37		4.2, FGP Update	1 day	Mon 11/25/19	Mon 11/25/19
38		4.3, Second review by reviewers	10 days	Tue 11/26/19	Mon 12/9/19
39		**5, Presentation to Board**	**5 days**	**Tue 12/10/19**	**Mon 12/16/19**
40		5.1, Final Review by Board	2 days	Tue 12/10/19	Wed 12/11/19
41		5.2, FGP grade report	3 days	Thu 12/12/19	Mon 12/16/19
42		FGP End	0 days	Mon 12/16/19	Mon 12/16/19



Appendix 4: Interview Questions

Questions

1. How were housing projects within CHAPA initiated?
    a. Was/is there a formal process?

2. Once projects were decided, what did the planning process look like?
    a. What did the planning entail?
    b. And who was involved in the planning process?

3. Most of the projects were contracted.
    a. Was tendering a part of the awarding the contract?
    b. Who had oversight of the contractor?
    c. Was there a formal reporting mechanism?
    d. Was there a formal change request process?

4. What did the monitoring process look like?
    a. Were there checklists involved
    b. Were there formal reporting requirements and if so, what were they?
    c. What happened if the contractor was not producing according to contract?

5. Who determined how the project would be managed?
    a. By what means would the projects have been managed?

6. How was the budget for each project determined? Was a budget predetermined or was the budget based on the contractor's proposal?

7. Was the communication process well defined and formalized for each project?

8. Was stakeholder management considered when projects were being developed?
    a. Were stakeholders identified and contacted?
    b. Was there a formal stakeholder communication requirement?

9. Was there a formal procurement process?
    a. What did it entail?
    b.
10. Were the risks of the project identified and assessed?
    a. Was there a risk register?

Appendix 5: Project Charter Template

Project Name:	Insert name of the project
Project Manager:	Insert name of the project manager and contact details
Project Sponsor:	Insert name of the project sponsor and contact details
Date:	Insert date
Version:	Insert the version i.e. Draft, Final
Statement of work	
Describe the currently known work to be done as part of the project. Include both project work and a description of the product, service or result to be delivered. Attached any relevant documents, contracts, agreements or plans.	
Does this project align with the organisation's strategic goals?	
Describe how this project will align with organizational strategic goals.	
What is the financial justification for the project?	
Describe the financial justification for the project i.e. what is the payback period, cost benefit ratio, return on investment, expected profit, net present value.	
What is the non-financial justification for the project?	
Describe any non-financial criteria being used to justify the project i.e. compliance with regulations or standards, environmental objectives, charitable purposes or gaining market share.	
What is the budget required?	
Describe the known budget required for the project or the next phase of the project. Explain how it was estimated.	
What is the preliminary schedule?	
Describe the know time the project or phases of the project will take. Explain how this was estimated.	
Are there any known risks?	
Describe any known projects risks, their consequences, planned responses and who is responsible for monitoring them.	

Are there any known constraints?
Describe any known time, cost or quality constraints affecting the project that may impact further project planning.
Describe the particular project management methodology that will be used
Does the organization have a defined project management methodology? If so, name and briefly describe it here
What level of delegated authority does the project manager have?
What levels of delegated authority to make decision about resources, change requests, budget and time does the project manager have?
Signatures: insert as appropriate when charter is finalised and approved
Project Sponsor:
Project Manager:

Appendix 6: Project Scope Statement

Project Name:	
Prepared by:	
Date:	
Project Justification:	The business need that the project was undertaken to address. The project justification provides the basis for evaluating future tradeoffs.
Product Description:	A brief summary of the product description
Project Deliverables:	A list of the summary-level sub products whose full and satisfactory delivery marks completion of the project.
Deliverable A	
Deliverable B	
Deliverable C	
Known Exclusions	
Project Objectives:	The quantifiable criteria that must be met for the project to be considered successful. Project objectives must include at least cost, schedule, and quality measures.
Cost Objectives (quantify)	
Schedule Objectives (start and stop dates)	
Quality Measures (criteria that will determine acceptability)	
Other Objectives	

Appendix 7: Schedule Management Plan Template

Project Name:		
Prepared by:		
Date:		
Person(s) authorized to request schedule changes (see Schedule Change		
Name:	Title:	Location:
Name:	Title:	Location:
Name:	Title:	Location:
Person(s) to whom Schedule Change Request forms must be submitted for		
Name:	Title:	Location:
Name:	Title:	Location:
Name:	Title:	Location:
Acceptable reasons for changes to Project Schedule (e.g., delays due to material or personnel availability; weather; need to resolve related issue before proceeding; acceleration permitted due to early completion of a phase or process, etc.):		
Describe how you will calculate and report on the projected impact of any schedule changes (time, cost, quality, etc.):		
Describe any other aspects of how changes to the project schedule will be managed:		

Appendix 8: Cost Management Plan Template

Project Name:
Prepared by:
Date:
Person(s) authorized to request cost changes (see Cost Change Request):
Person(s) to whom Cost Change Request forms must be submitted for
Acceptable reasons for changes in Project Cost:
Describe how you will calculate and report on the projected impact of any cost changes:
Describe any other aspects of how changes to the Project Cost will be managed:

Appendix 9: Cost Estimating Checklist

Project Name:
Prepared by:
Date:
Be certain that all possible needed resources are taken into account, including
Project Management (figure at 10% of total)
Labour
Materials
Supplies
Fees for consultants and other outside professional services
Miscellaneous (shipping, copying, couriers, etc.)
Contingency planning
Be as specific as possible, using as many means as you can to quantify the resources the project will require.
Express cost estimates in units of currency.
Indicate other metrics, such as staff hours/days, as appropriate.
Be sure you consider every activity involved in the project, when computing potential costs.
Allow for realistic quantities and frequencies of cost items, such as number of days for equipment rentals, number of workers needed for each stage of the project, and so forth.

Appendix 10: Project Report Template

Project Name:		
Prepared by:		
Date:		
Status of Project Relative to Project Objectives:		
Scope (On scope? If off scope, how serious?)		
Schedule (On schedule? Ahead or behind by how much, etc.)		
Cost (On budget? Under or over by how much, etc.)		
Quality		
Progress Report: (what is completed, what is in process, key changes made, when and why, etc. Should include photos)		
Payment Approved Yes_____ No_____ Reason_____		
Issue:	Who Will Address:	
Project Report Submitted to:		
Name:	Title:	Date:
Name:	Title:	Date:
Name:	Title:	Date:

Appendix 11: Risk Register

Risk Identification		Qualitative Rating				Risk Response		
Risk	Risk Category	Probability	Impact	Risk Score	Risk Ranking	Risk Response	Trigger	Risk Owner
				0	1			
				0	2			
				0	3			
				0	4			
				0	5			
				0	6			
				0	7			
				0	8			
				0	9			
				0	10			

Key Terms

Risk: The risk stated in a complete sentence which states the cause of the risk, the risk, and the effect that the risk causes to the project.

Risk Category: Categorization of risks by area of project affected, source of risk or other useful category.

Probability: The likelihood that a risk or opportunity will occur (on a scale from 0 to 10 with 10 being the highest).

Impact: The impact of the risk on the project if the risk occurs (scale from 0 to 10 with 10 being the highest).

Risk Score: Determined by multiplying probability and impact (scale from 0 to 100).

Risk Ranking: A priority list which is determined by the relative ranking of the risks (by their scores) within the project with the number one being the highest risk score.

Risk Response: The action which is to be taken if this risk occurs.

Trigger: Something which indicates that a risk is about to occur or has already occurred.

Risk Owner: The person who the project manager assigns to watch for triggers, and manage the risk response if the risk occurs.

Appendix 12: Stakeholder Communications Register

Stakeholder	Contact details	Interest	Power (1-5)	Interest (1-5)	P x I	What?	When?	How?	Who
List the individual or groups of stakeholders	List their contact details	Describe their interest in the project	Describe the power the stakeholder has in terms of their ability to affect the project either negatively or positively on a scale of 1 -5: 1: no discernible power, 2: some power to affect the project 3: Moderate power to affect the project 4: Significant power to affect the project 5: The power to affect the entire project	Describe the level of interest the stakeholder has in the project on a scale of 1 -5: 1: No discernible interest in the project, 2: some interest in the project 3: Moderate interest in the project 4: significant interest in the project 5: Is interested in all aspects of the project all the time.	Multiply power and influence scores together to get a ranked list of stakeholders – pay particular attention to all stakeholders scoring 12 or higher.	Describe what sort of information they need	Describe the frequency with which they will be supplied with information	Describe the means by which the information will be delivered	Describe who is responsible?

Appendix 13: Change Order Form

Project Name:					
Prepared by:					
Date:					
Person(s) Requesting Change:					
Change Number:					
Type of Change Requested:					
	Project Scope		Project Budget		Project Schedule
	Project Procurement/Contract Change		Other (specify)		
Detailed Description of Change:					
Reason for Change Requested:					
Effect on Project Cost:					
□ Projected Cost Overrun of approximately %					
□ Estimated Cost Reduction of approximately %					
Effect on Schedule:					
□ Planned Project Completion Date:					
□ New Project Completion Date:					
Additional Remarks:					
Approval	Project Manager			Date	
Approval	(Other)			Date	

Appendix 14: Lessons Learned Register

Project Name:				
Prepared by:				
Date:				
Category	Issue Name	Problem/Success	Impact	Recommendation

Appendix 15: Certificate of Completion

Project Name:	
Prepared by:	
Date:	
Name of Client or Sponsor:	
Statement of Formal Acceptance:	
The undersigned formally accept, on behalf of CHAPA, as complete the above-identified project, and do hereby state that this project, project phase, or major deliverable meets or exceeds agreed-upon performance standards for scope, quality, schedule, and cost, and state that we have seen documentation that all relevant legal and regulatory requirements have been met or exceeded.	
Additional Remarks:	
Accepted by (name of client, sponsor, or other official)	Date
Accepted by (name of client, sponsor, or other official)	Date
Accepted by (name of client, sponsor, or other official)	Date
Signed form distributed to:	
Stakeholder name	Date
Stakeholder name	Date
Stakeholder name	Date

Appendix 16: Communications Plan

Project Name:
Prepared by:
Date/Version:

The communications plan is more than just the communications register. It also provides guidance on how all communications will be carried out, the general tone of communications and key messages. There can be a degree of overlap between you communications register and your stakeholder register.

Provide an outline of your communications management strategy and key messages

Appendix 17: Procurement Management Plan

Project Name:		
Prepared by:		
Date:		
Identify types of contracts being used		
Independent estimates required?	Yes	No
If Yes, who will prepare?		
By when?		
Actions that Project Management Team can take independent of Procurement Department		
Source of standardized procurement documents, if needed		
How will multiple providers be managed?		
How will you coordinate Procurement with the following aspects of the project?		
Scheduling		
Performance Reporting		
Human Resources		
Other		

Appendix 18: Sample Project

In this appendix a project that is proposed to be carried out by CHAPA is used to demonstrate the applicability of the Project Management methodology and templates developed. The project is the construction of a concrete road network in a recently sold residential development.

The Project Sponsor is the HEO, while the writer of this FGP is the Project Manager.

Project Charter Template

Project Name:	Piccadilly Road Work
Project Manager:	Kizzy Sterling
Project Sponsor:	Mark Richards
Date:	30 September 2019
Version:	Draft 1
Statement of work	
Describe the currently known work to be done as part of the project. Include both project work and a description of the product, service or result to be delivered. Attached any relevant documents, contracts, agreements or plans. The work to be completed include: 1. Survey & marking of roadway 2. Grading road 3. Layering of base and first surface 4. Building and installing drains and curbs 5. Final surface of road The final product is the road network in the Piccadilly Development	
Does this project align with the organisation's strategic goals? Yes	
Describe how this project will align with organizational strategic goals. In providing residential lands for sale also includes installing infrastructure in those developments	
What is the financial justification for the project?	
Describe the financial justification for the project i.e. what is the payback period, cost benefit ratio, return on investment, expected profit, net present value.	

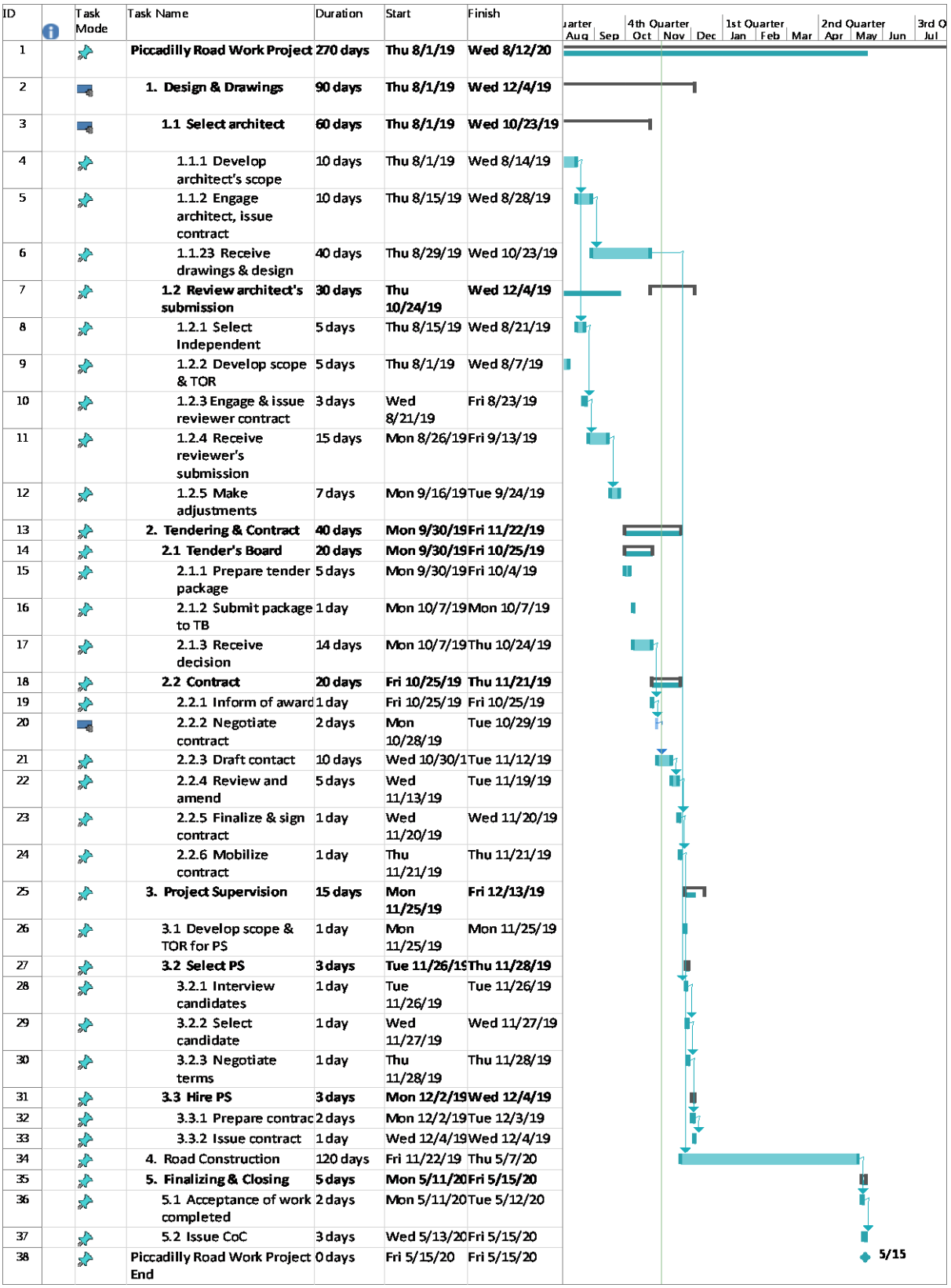
Selling price of land included infrastructure cost
What is the non-financial justification for the project?
Describe any non-financial criteria being used to justify the project i.e. compliance with regulations or standards, environmental objectives, charitable purposes or gaining market share. Government Policy
What is the budget required?
Describe the known budget required for the project or the next phase of the project. Explain how it was estimated. *TBD*
What is the preliminary schedule?
Describe the know time the project or phases of the project will take. Explain how this was estimated. *TBD*
Are there any known risks?
Describe any known projects risks, their consequences, planned responses and who is responsible for monitoring them. *TBD*
Are there any known constraints?
Describe any known time, cost or quality constraints affecting the project that may impact further project planning.
Describe the particular project management methodology that will be used
Does the organization have a defined project management methodology? If so, name and briefly describe it here *The Project Management Policy and Procedure established by the organization*
What level of delegated authority does the project manager have?
What levels of delegated authority to make decision about resources, change requests, budget and time does the project manager have?
Signatures:
Project Sponsor:
Project Manager:

Scope Statement

Project Name: Piccadilly Road Works	
Prepared by: Kizzy Sterling	
Project Sponsor: Mark Richards – HEO	
Date: 30 September, 2019	
Project Justification:	CHAPA is required to install infrastructure in every development it undertakes for housing. Piccadilly was sold at a higher price with the intention of CHAPA installing concrete roads and drains throughout the development.
Product Description:	Construction of concrete roads throughout the development
Project Deliverables:	▪ Complete drawings of civil works ▪ Contract with selected contractor ▪ Construction of concrete roads and drains
Deliverable A	Complete civil works design & drawings
Deliverable B	Award and Sign contract with selected contractor
Deliverable C	Hire Project Supervisor
Deliverable D	Complete road and drains construction
Deliverable E	Finalize and complete contract
Known Exclusions	Installation and connection of utility services to each parcel
Project Objectives:	The quantifiable criteria that must be met for the project to be considered successful. Project objectives must include at least cost, schedule, and quality measures.
Cost Objectives (quantify)	$1,748,120.00
Schedule Objectives (start and stop dates)	Start date: 1 August 2019 End date: 12 August 2020
Quality Measures (criteria that will determine acceptability)	TBD
Other Objectives	TBD

Schedule Management Plan Template

Project Name: Piccadilly Road Works		
Prepared by: Kizzy Sterling		
Date: 30 September, 2019		
Person(s) authorized to request schedule changes (see Schedule Change		
Name:	Title: Project Supervisor	Location:
Name:	Title: Contractor	Location:
Person(s) to whom Schedule Change Request forms must be submitted for		
Name:	Title: Project Manager	Location: CHAPA HQ
Name:	Title: HEO/Sponsor	Location: CHAPA HQ
Acceptable reasons for changes to Project Schedule (e.g., delays due to material or personnel availability; weather; need to resolve related issue before proceeding; acceleration permitted due to early completion of a phase or process, etc.): 1. Inclement weather 2. Materials shortage 3. Issues needing rectification that were not the fault of the contractor		
Describe how you will calculate and report on the projected impact of any schedule changes (time, cost, quality, etc.): There should be no impact in cost or quality due to delays unless additional work is required and a change request for that additional request is prepared and approved. Once contract price is signed to, any cost incurred due to delays will be borne by the contractor.		
Describe any other aspects of how changes to the project schedule will be managed: TBD as need arises		
See project schedule attached for actual timelines		



ID	Task Mode	Task Name	Duration	Start	Finish
1		**Piccadilly Road Work Project**	**270 days**	**Thu 8/1/19**	**Wed 8/12/20**
2		**1. Design & Drawings**	**90 days**	**Thu 8/1/19**	**Wed 12/4/19**
3		**1.1 Select architect**	**60 days**	**Thu 8/1/19**	**Wed 10/23/19**
4		1.1.1 Develop architect's scope	10 days	Thu 8/1/19	Wed 8/14/19
5		1.1.2 Engage architect, issue contract	10 days	Thu 8/15/19	Wed 8/28/19
6		1.1.23 Receive drawings & design	40 days	Thu 8/29/19	Wed 10/23/19
7		**1.2 Review architect's submission**	**30 days**	**Thu 10/24/19**	**Wed 12/4/19**
8		1.2.1 Select Independent	5 days	Thu 8/15/19	Wed 8/21/19
9		1.2.2 Develop scope & TOR	5 days	Thu 8/1/19	Wed 8/7/19
10		1.2.3 Engage & issue reviewer contract	3 days	Wed 8/21/19	Fri 8/23/19
11		1.2.4 Receive reviewer's submission	15 days	Mon 8/26/19	Fri 9/13/19
12		1.2.5 Make adjustments	7 days	Mon 9/16/19	Tue 9/24/19
13		**2. Tendering & Contract**	**40 days**	**Mon 9/30/19**	**Fri 11/22/19**
14		**2.1 Tender's Board**	**20 days**	**Mon 9/30/19**	**Fri 10/25/19**
15		2.1.1 Prepare tender package	5 days	Mon 9/30/19	Fri 10/4/19
16		2.1.2 Submit package to TB	1 day	Mon 10/7/19	Mon 10/7/19
17		2.1.3 Receive decision	14 days	Mon 10/7/19	Thu 10/24/19
18		**2.2 Contract**	**20 days**	**Fri 10/25/19**	**Thu 11/21/19**
19		2.2.1 Inform of award	1 day	Fri 10/25/19	Fri 10/25/19
20		2.2.2 Negotiate contract	2 days	Mon 10/28/19	Tue 10/29/19
21		2.2.3 Draft contact	10 days	Wed 10/30/1	Tue 11/12/19
22		2.2.4 Review and amend	5 days	Wed 11/13/19	Tue 11/19/19
23		2.2.5 Finalize & sign contract	1 day	Wed 11/20/19	Wed 11/20/19
24		2.2.6 Mobilize contract	1 day	Thu 11/21/19	Thu 11/21/19
25		**3. Project Supervision**	**15 days**	**Mon 11/25/19**	**Fri 12/13/19**
26		3.1 Develop scope & TOR for PS	1 day	Mon 11/25/19	Mon 11/25/19
27		**3.2 Select PS**	**3 days**	**Tue 11/26/19**	**Thu 11/28/19**
28		3.2.1 Interview candidates	1 day	Tue 11/26/19	Tue 11/26/19
29		3.2.2 Select candidate	1 day	Wed 11/27/19	Wed 11/27/19
30		3.2.3 Negotiate terms	1 day	Thu 11/28/19	Thu 11/28/19
31		**3.3 Hire PS**	**3 days**	**Mon 12/2/19**	**Wed 12/4/19**
32		3.3.1 Prepare contrac	2 days	Mon 12/2/19	Tue 12/3/19
33		3.3.2 Issue contract	1 day	Wed 12/4/19	Wed 12/4/19
34		4. Road Construction	120 days	Fri 11/22/19	Thu 5/7/20
35		**5. Finalizing & Closing**	**5 days**	**Mon 5/11/20**	**Fri 5/15/20**
36		5.1 Acceptance of work completed	2 days	Mon 5/11/20	Tue 5/12/20
37		5.2 Issue CoC	3 days	Wed 5/13/20	Fri 5/15/20
38		Piccadilly Road Work Project End	0 days	Fri 5/15/20	Fri 5/15/20

Cost Estimating Checklist

Project Name: Piccadilly Road Works
Prepared by: Kizzy Sterling
Date: 30 September, 2019
Be certain that all possible needed resources are taken into account, including but not
Total Contract Price XCD$1,748,120.00
Labor TBD
Materials TBD
Equipment TBD
Project Supervisor Fee TBD
Contingency planning
Be as specific as possible, using as many means as you can to quantify the resources the project will require. All possible costs required by this project should be estimated by the contractor and included in his bid.
Express cost estimates in units of currency. Eastern Caribbean Dollars XCD
Indicate other metrics, such as staff hours/days, as appropriate. See actual budget attached

Piccadilly Road Work						
Estimated Project Cost						
WBS Code	**Task**	**Resources Required**		**Cost (UM)**	**Activity Cost**	**Total Cost**
1	**Design & Drawings**					**955.00**
1.1	**Select civil architect to produce drawings**				**315.00**	
1.1.1	Develop architect's scope and terms of reference	8	hrs PM's time	30.00	240.00	
1.1.2	Engage architect and issue architect's contract	1	hr HEO time	50.00	50.00	
1.1.3	Receive drawings & design	0.5	hr HEO time	50.00	25.00	
1.2	**Review architect's submission**				**640.00**	
1.2.1	Select independent reviewer	4	HEO time	50.00	200.00	
1.2.2	Develop reviewer's scope and terms of reference	8	hrs PM's time	30.00	240.00	
1.2.3	Engage reviewer and issue reviewer's contract	2	hrs HEO time	50.00	100.00	
1.2.4	Receive reviewer's submission	2	hrs HEO time	50.00	100.00	
1.2.5	Make adjustments where necessary					
2	**Tendering & Contract**					**798.50**
2.1	**Submission to Tenders Board**				**495.00**	
2.1.1	Prepare Tenders package	16	hrs PM's time	30.00	480.00	
2.1.2	Submit package to Tenders Board	0.5	hr PM's time	30.00	15.00	

Piccadilly Road Work						
Estimated Project Cost						
WBS Code	**Task**	**Resources Required**		**Cost (UM)**	**Activity Cost**	**Total Cost**
2.1.3	Await Tenders Board decision	0				
2.1.4	Receive Tenders Board decision	0				
2.2	**Contract**				**303.50**	
2.2.1	Inform selected contractor of award	0.3	hrs PM's time	30.00	7.50	
2.2.2	Meet and negotiate terms of contract	2	hrs HEO time	50.00	100.00	
2.2.3	Send terms to lawyer to draft contract				-	
2.2.4	Review draft contract with contractor and amend where necessary	2	hrs HEO time	50.00	100.00	
2.2.5	Finalize and sign contract	1	hr HEO time	50.00	50.00	
2.2.6	Mobilize contract	1	hr Accountant time	46.00	46.00	
3	**Project Supervisor (PS)**					**940.00**
3.1	**Develop scope & terms of reference for PS**	**8**	**hrs PM's time**	**30.00**	**240.00**	
3.2	**Select PS**				**550.00**	
3.2.1	Interview potential candidates	8	hrs HEO time	50.00	400.00	
3.2.2	Select most suitable candidate	1	hr HEO time	50.00	50.00	

Piccadilly Road Work						
Estimated Project Cost						
WBS Code	**Task**	**Resources Required**		**Cost (UM)**	**Activity Cost**	**Total Cost**
3.2.3	Negotiate terms of employment with selected candidate	2	hrs HEO time	50.00	100.00	
3.3	**Hire PS**				**150.00**	
3.3.1	Prepare petty contract for PS	4	hrs PM's time	30.00	120.00	
3.3.2	Issue contract with TOR & scope	1	hr PM's time	30.00	30.00	
4	**Road Construction**					**1,745,234.00**
	To be developed according to terms of contract					
5	**Finalizing & Closing**					**192.00**
	5.1 Acceptance of work completed	2	hrs HEO time	50.00	100.00	
	5.2 Issue certificate of completion	2	hrs Accountant time	46.00	92.00	
	Estimated Project Cost					**1,748,119.50**

Cost Management Plan Template

Project Name: Piccadilly Road Works
Prepared by: Kizzy Sterling
Date: 30 September, 2019
Person(s) authorized to request cost changes (see Cost Change
Contractor, Project Manager
Person(s) to whom Cost Change Request forms must be submitted for
Project Manager, Project Sponsor
Acceptable reasons for changes in Project Cost: 1. Unforeseen exclusion in original contract –(2. Adjustments requested by CHAPA
Describe how you will calculate and report on the projected impact of any cost changes: Contractor will provide estimate on work to be completed Project supervisor will verify work to be done and provide estimate to compare against contractor's submission
Describe any other aspects of how changes to the Project Cost will be managed: TBD

Procurement Management Plan Checklist

Project Name: Piccadilly Road Works		
Prepared by: Kizzy Sterling		
Date: 30 September, 2019		
Identify types of contracts being used Contract for provision of labour and materials (with exclusions & inclusions)		
Independent estimates required?	Yes ✓✓	No
If Yes, who will prepare? Project Supervisor		
By when? TBD		
Actions that Project Management Team can take independent of Procurement Department None		
Source of standardized procurement documents, if needed Accounts Department for Purchase Orders Company Lawyer for contract		
How will multiple providers be managed? All providers should be on the recommendation of the Project Supervisor. Purchases shall be made in accordance with the organization's purchasing policy.		
How will you coordinate Procurement with the following aspects of the project?		
Scheduling On recommendation of PS		
Performance Reporting PS shall report on the performance of the provider using the project reporting template		
Human Resources N/A		
Other TBD as necessary		

Risk Register

Risk Identification		Qualitative Rating				Risk Response		
Risk	Risk Category	Probability	Impact	Risk Score	Risk Ranking	Risk Response	Trigger	Risk Owner
Weather delays	Natural causes	7	5	35	3	Acceleration of project	Weather forecasts	Contractor
Material Shortage		7	7	49	2			Contractor
Equipment breakdown	Machinery	8	9	72	1	Find substitute machine	Halted machine	Per contract
				0	4			
				0	5			
				0	6			
				0	7			
				0	8			
				0	9			

Key Terms

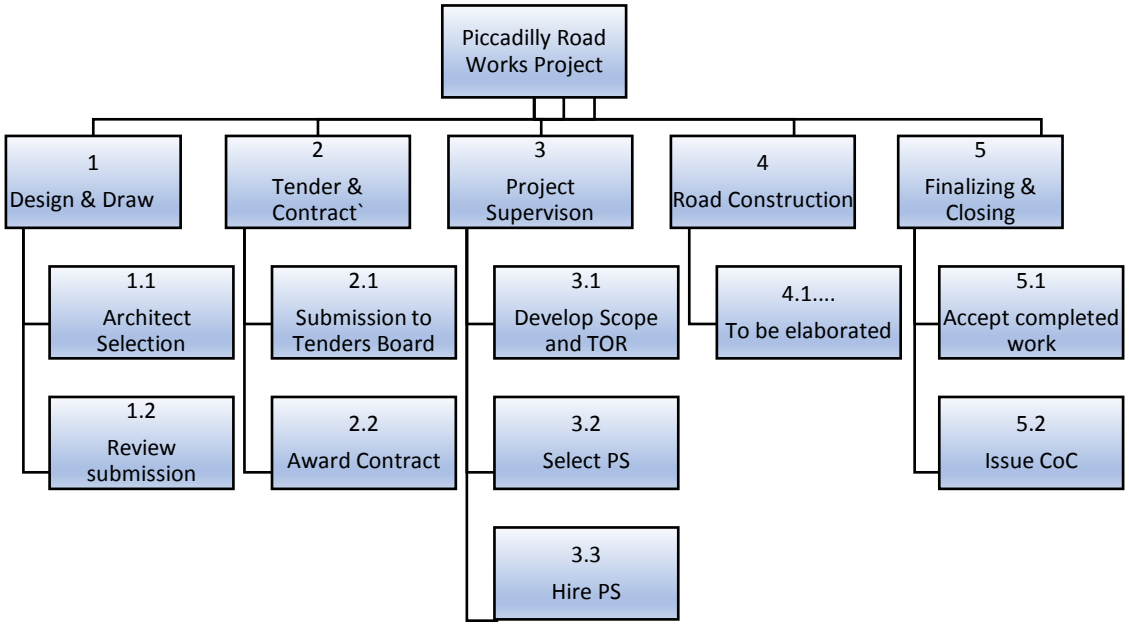
Risk: The risk stated in a complete sentence which states the cause of the risk, the risk, and the effect that the risk causes to the project.
Risk Category: Categorization of risks by area of project affected, source of risk or other useful category.
Probability: The likelihood that a risk or opportunity will occur (on a scale from 0 to 10 with 10 being the highest).
Impact: The impact of the risk on the project if the risk occurs (scale from 0 to 10 with 10 being the highest).
Risk Score: Determined by multiplying probability and impact (scale from 0 to 100).
Risk Ranking: A priority list which is determined by the relative ranking of the risks (by their scores) within the project with the number one being the highest risk score.
Risk Response: The action which is to be taken if this risk occurs.
Trigger: Something which indicates that a risk is about to occur or has already occurred.
Risk Owner: The person who the project manager assigns to watch for triggers, and manage the risk response if the risk occurs.

Stakeholder Communications Register

Stakeholder	Contact details	Interest	Power (1-5)	Interest (1-5)	P x I	What?	When?	How?	Who
List the individual or groups of stakeholders	List their contact details	Describe their interest in the project	Describe the power the stakeholder has in terms of their ability to affect the project either negatively or positively on a scale of 1 -5:	Describe the level of interest the stakeholder has in the project on a scale of 1 -5:	Multiply power and influence scores together to get a ranked list.	Describe what sort of information they need	Describe the frequency with which they will be supplied with information	Describe the means by which the information will be delivered	Describe who is responsible?
Minister of Housing		Interested to ensure gov't housing policy is executed	5	5	25	Who is awarded contract. Contract Sum	Monthly	Telephone updates Heads of depts mtg	HEO
Land owners		Need infrastructure in place to commence house construction	2	5	10	Start date Completion date Duration of project	When requested	Verbally,	HEO, Project Manager, Project Supervisor
CHAPA		Executing agency	5	5	25	All info on project	Daily, weekly, stage	Meetings, conversation, progress report	Project team, HEO

Power x Interest scores:
1-6: These stakeholders can usually be ignored but keep an eye on them in case the situation changes.
7 -12: Communicate regularly with these stakeholders to ensure they get the information they require
13 – 18: Take careful notice of these stakeholders and their needs.
19 – 25: These stakeholders need to be closely monitored and kept satisfied to ensure they provide support for the project, or at least don't oppose the project

WBS Chart



WBS Table

Piccadilly Development Road Construction
WBS Table
Prepared by: Kizzy Steling

1 Design & Drawings
1.1 Select civil architect to produce drawings
1.1.1 Develop architect's scope and terms of reference
1.1.2 Engage architect and issue architect's contract
1.1.3 Receive drawings & design
1.2 Review architects submission
1.2.1 Select independent reviewer
1.2.2 Develop reviewer's scope and terms of reference

Piccadilly Development Road Construction
WBS Table
Prepared by: Kizzy Steling
1.2.3 Engage reviewer and issue reviewer's contract
1.2.4 Receive reviewer's submission
1.2.5 Make adjustments where necessary
2 Tendering & Contract
2.1 Submission to Tenders Board
2.1.1 Prepare Tenders package
2.1.2 Submit package to Tenders Board
2.1.3 Await Tenders Board decision
2.1.4 Receive Tenders Board decision
2.2 Contract
2.2.1 Inform selected contractor of award
2.2.2 Meet and negotiate terms of contract
2.2.3 Send terms to lawyer to draft contract
2.2.4 Review draft contract with contractor and amend where necessary
2.2.5 Finalize and sign contract
2.2.6 Mobilize contract
3 Project Supervisor (PS)
3.1 Develop scope & terms of reference for PS
3.2 Select PS
3.2.1 Interview potential candidates
3.2.2 Select most suitable candidate
3.2.3 Negotiate terms of employment with selected candidate
3.3 Hire PS
3.3.1 Prepare petty contract for PS
3.3.2 Issue contract with TOR & scope
4 Road Construction
To be developed according to terms of contract
5 Finalizing & Closing
5.1 Acceptance of work completed
5.2 Issue certificate of completion

Project Name: Piccadilly Road Work							
Prepared by: Kizzy Sterling							
Date: 30 September 2019							
				Validation			
ID	**Requirement**	**WBS Element**		**Inspection**	**Doc Review**	**Testing**	**Measurement**
1	Piccadilly Roads	5		x			
1.1	Completed drawings	1.1.3			x		
1.2	Civil contractor	2			x		
1.2.1	Tendering	2.1.2			x		
1.2.2	Award contract	2.25			x		
1.2.3	Mobilize contract	2.2.6			x		
1.3	Road Construction	4		x		x	x

Appendix 19: Revision Dictum

THE UNIVERSITY OF THE WEST INDIES

Brently O'Brian Samuel Edghill

having completed the Course of Study approved by the University and having satisfied the Examiners has this day been admitted by the Senate to the Degree of

BACHELOR OF ARTS

LITERATURES IN ENGLISH (MAJOR)

with

Second Class Honours (Upper Division)

1 July 2005

VICE-CHANCELLOR

UNIVERSITY REGISTRAR

This Document is not valid unless it bears the University's seal

THE UNIVERSITY OF THE WEST INDIES

Brently O'Brian Samuel Edghill

having completed the Course of Study approved by the University and having satisfied the Examiners, has this day been awarded by the Senate the

POSTGRADUATE DIPLOMA
IN
EDUCATION (SECONDARY)
(THE TEACHING OF ENGLISH)

August 31, 2015
DATE

VICE-CHANCELLOR

UNIVERSITY REGISTRAR

This Document is not valid unless it bears the University's seal

BRENTLY EDGHILL

20th October, 2019

University of International Cooperation
San Jose
Costa Rica

Attention: Roger Valverde

Dear Mr.Valverde,

Philological approval letter of Final Graduation Project written by Ms. Kizzy Sterling

I, Mr. Brently Edghill, hereby declare that the Final Graduation Project entitled

"Proposal for Project Methodology for use at the Central Planning Housing and Planning Authority"

has been reviewed and corrected thoroughly and meets requirements corresponding to a master's level dissertation.

Sincerely,

Brently Edghill, B.Sc

PAYNTERS ESTATE, ST. GEORGE', ANTIGUA
TEL: 1-268-728-4463
brentlyedghill@hotmail.com