UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL
(UCI)

STRATEGY TO DEVELOP THE PROJECT MANAGEMENT PLAN FOR THE IMPLEMENTATION OF A COMMUNITY CYBER CENTRE FOR DYNAMIC LIFE FOUNDATION (DLF)

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FINAL GRADUATION PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
MASTER'S IN PROJECT MANAGEMENT (MPM) DEGREE

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

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DEDICATION

I would like to dedicate this project and the process of completing my Master's in Project Management at UCI to my family. Without the unwavering support of both my immediate and Kingdom Community, I would not have been able to push beyond fatigue and thoughts of throwing in the towel to complete what was an opportunity orchestrated by God.

Thank you!

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I would like to take the time to express my sincerest gratitude to several persons who contributed to the process of completing my Final Graduate Project.

To my tutors and the administrative staff of the Master's in Project Management for the year 2016 at UCI, throughout the programme you have passed on the knowledge and given me the experience required to step fully into the world of project management. I have been equipped with the necessary tools to do well and for that I say thank you.

A special thank you to Mr. Johan Aleman Rojas, for guiding me through the tutorship process. I appreciate your advice and guidance; it was a beacon of light as I completed my final project.

Thanks to Mr. Dwight Pennycooke for taking the time to read through my project and providing tips on how I should improve the final product. Thanks to his wife, Keisha as well.

To the Dynamic Life Foundation and their Board Members, thank you for being the subject matter of my project. May the organization continue to grow from strength to strength in providing programmes to empower our young people not only in Jamaica, but across the globe.

A big thank you to my family and friends for monitoring me throughout the process; I never felt alone as I had sleepless nights trying to keep on top of things and balancing school work with fulltime work, family and other responsibilities. Thanks for supporting not only me but also my husband and son.

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ABBREVIATIONS AND ACRONYMS

AC	Actual Cost
BAC	Budget at Completion
CPI	Cost Performance Index
CV	Cost Variance
DLF	Dynamic Life Foundation
EAC	Estimated Actual Cost at Completion
ETC	Estimate to Completion
EV	Earned Value
FGP	Final Graduation Project
ICT	Information and Communication Technology
KLAC	Kingdom Life Advancement Centre
MGCC	Molynes Gardens Cyber Centre
PMBOK Guide	A Guide to the Project Management Body of Knowledge
PMI	Project Management Institute
PMP	Project Management Plan
PV	Planned Value
RBS	Risk Breakdown Structure
SDC	Social Development Commission
SPI	Schedule Performance Index
SV	Schedule Variance
TCPI	To Complete Performance Index
USF	Universal Service Fund
WBS	Work Breakdown Structure

EXECUTIVE SUMMARY (ABSTRACT)

Dynamic Life Foundation (DLF) is a not-for-profit organization that works to effectively empower Jamaicans by instituting inspiring and innovative programmes and projects, which will produce inner transformation and increased productivity, thereby contributing to a better society. They are a small entity with seven (7) years of experience, managing projects in the areas of youth advocacy and family development.

DLF has interest in the implementation of a Community Cyber Centre; however, this arena will be a new undertaking for the organization. Also, the project stemmed from another project coordinated by the Social Development Commission (SDC), which was completed but proved unsustainable. Considering these factors, DLF thought it prudent to develop the Project Management Plan, outlining the details on the proper management of the implementation, to get the requisite authorization from the SDC to proceed with executing the plan.

Therefore, the main benefit of creating the Project Management Plan is to ensure sustainability of the initiative by providing a comprehensive management framework covering the scope from execution to closure.

The general objective of the Final Graduation Project (FGP) was to formulate a strategy to assist DLF with the proper development of a Project Management Plan for implementation of a Community Cyber Center. The specific objectives were to outline strategies for creating: a Scope Management Plan outlining how the project scope will be defined, validated and controlled; a Schedule Management Plan documenting the scheduling methodology with the corresponding scheduling tools and techniques; a Cost Management Plan that states how the project costs will be planned, structured and controlled; a Quality Management Plan that describes how the quality requirements set for the project will be met; and a Risk Management Plan to outline how risk management activities will be structured and performed.

The methodological framework used in the development of the strategies for Project Management Plan involved the use of interviews and email correspondence as primary sources, while the PMBOK Guide, 5th Edition and Internet were used as secondary sources. Analytical and qualitative research methods were employed to arrive at concrete conclusions about the needs of the project. All tools and techniques used in the process were based on the project mangement standards found in the PMBOK Guide, 5th Edition.

In conclusion, due to the complexity and size of the project, strategies for the following subsidiary plans were developed: Scope Management Plan, Schedule Management Plan, Cost Management Plan, Quality Management Plan and Risk Management Plan. These plans should be completed successively but updated as more accurate information becomes available. Strategies for the subsidiary plans were developed using the structured approach described in the PMBOK Guide.

This method allowed the process to be easier and allowed more details to be included in the overall document.

It was recommended that the PMP should be developed iteratively throughout the project life cycle to ensure that the plan is complete and accurate information is captured as the project progresses. Also, to ensure that the project complies with the requisite standards, it was suggested that the Project Manager employ Project Management standards throughout the duration of the project. Even though the project scope and size are small, the Project Manager should employ at least one more resource to assist with the compilation of the different subsidiary plans and the overall plan.

1 INTRODUCTION

1.1. Background

September 2013 marked the time when the Molynes Gardens Cyber Centre (MGCC) was officially opened with a ceremony that invited the then Minister of Science, Technology, Energy and Mining, Mr. Julian Robinson as a guest speaker. The project was coordinated by the Social Development Commission (SDC) and selected members of the Molynes Gardens Citizen's Association and Kingdom Life Advancement Centre (KLAC), a local church situated in the community. This endeavour was fully funded by the Universal Service Fund (USF).

Once the centre was completed, the Molynes Gardens Community, with the help of the SDC, was tasked with the job of overseeing the daily operations and coming up with avenues to earn income to maintain its operations. The planning team, who also formed the management team, tried their best to come up with creative ideas to keep the cyber centre up and running. However, the interests of key stakeholders started to dwindle and eventually the operations ceased.

The MGCC, through partnership with KLAC, was opened on the church's premises and still to this day house all desks, chairs and ICT equipment that were bought for the purposes of operating the Cyber Café. It is for this reason that KLAC, through their foundation, Dynamic Life Foundation (DLF) would like to conceptualize a more sustainable operational strategy under which the centre would be re-established and its operations governed.

Dynamic Life Foundation is a not-for-profit organization that works to effectively empower Jamaicans by instituting inspiring and innovative programmes and projects, which will produce inner transformation and increased productivity, thereby contributing to a better society. DLF is an initiative of Kingdom Life Advancement Centre, a faith-based organization head-quartered in Kingston,

Jamaica. KLAC is a member of the Kingdom Community Network, which is a sector of Congress WBN.

1.2. Statement of the problem

DLF has a proven track record of properly managing projects for the last seven (7) years, however, the implementation of the Community Cyber Centre is a new undertaking for the foundation and there is more scrutiny since the original project was short-lived. Considering this, the organization has found it necessary to develop the Project Management Plan, as this formal documentation will provide the necessary details on the proper management of the implementation of the Cyber Centre. Once this document is completed, DLF can then secure the authorization from the SDC to proceed with the next phase, which would be the execution of the plan.

1.3. Purpose

Benjamin Franklin is acclaimed for saying “If you fail to plan, you are planning to fail” and Sir Winston Churchill is accredited with the phrase, “Those who fail to learn from the past are doomed to repeat it”. The purpose of this FGP is to develop a Project Management Plan to assist the DLF with the implementation of a Community Cyber Centre. This document is necessary to acquire permission from the SDC and other key stakeholders in order to proceed with the initiative.

The benefit to be gained from the project is that the end product ensures sustainability of the initiative by providing a comprehensive management framework covering the scope from execution to closure. Once the Foundation gets the go-ahead, the implementation process will be easier as all the necessary details were already considered.

1.4. General objective

To formulate a plan to assist DLF with the proper development of a Project Management Plan for the implementation of a Community Cyber Center

1.5. Specific objectives

1. To outline a strategy to create a Scope Management Plan that captures how the project scope will be defined, validated and controlled.
2. To outline a strategy to create a Schedule Management Plan, which documents the scheduling methodology with the corresponding scheduling tools and techniques.
3. To outline a strategy to create a Cost Management Plan that states how the project costs will be planned, structured and controlled.
4. To outline a strategy to create a Quality Management Plan that describes how the quality requirements set for the project will be met.
5. To outline a strategy to create a Risk Management Plan that captures how risk management activities will be structured and performed.

2 THEORETICAL FRAMEWORK

2.1 Company/Enterprise Framework

Company/Enterprise background.

The DLF is a small organization that was first registered in 2010. The foundation is managed by five (5) individuals, which include the Chairman, Secretary and three (3) other Board Members. For the last seven (7) years, DLF has managed seven (7) projects in the arena of youth advocacy and family development. These projects include activities specially developed for two (2) Primary Schools, Children's Homes and a Centre for pregnant teenage girls. Below is a summary of the projects they have completed and are currently working on:

- *Women's Centre (Girls Recalibrated)* – a mentorship and character development programme for girls, 11 to 15 years old, who have dropped out of the regular school system due to pregnancy. This project has now ended and ran for a period of about five (5) years.
- *Jessie's Kids* – in collaboration with the Guidance Counseling Department of Jessie Ripoll Primary School, the project delivered a one (1) year customized character development curriculum facilitated every fortnight to an average of 35 boys and 35 girls in grades 4 to 6 who were identified as having self-esteem and/or behavioural problems. This ran from October 2011 to June 2012.
- *Y.U.T.E. Legacy – JA50* – in partnership with the Project Management Office (PMO) of the Youth Upliftment Through Employment (Y.U.T.E.) Programme, the DLF designed, developed and implemented a series of character development workshops and a concert dubbed "Legacy" for approximately 181 male and female at-risk youth, aged 17 to 23, who were enrolled in the Programme. The project was implemented over the period July 19th to September 17, 2012.
- *Manning Childcare Facility – St. Elizabeth* – DLF has been working with the only government-run boys' home in Jamaica since September 2015,

focusing on the character development of the boys within the children's home.

- *Maxfield Park Children's Home – Kingston* – this project focuses on the character development of the children within Maxfield Park Children's Home. DLF has been working with the children since August 2014.
- *Belmont Park Primary School – St. Catherine* – working alongside the Guidance Counselor, DLF facilitates character development in boys from grades 3 to 6, who have been identified as having self-esteem and/or behavioural problems. This initiative started in 2016 and the club is now in its second cycle.
- *Designer Girl™ & Good Boys Rule Magazines* – this is a proposed quarterly, one-of-a-kind Girls' Magazine, with an insert dedicated to boys.

Mission and vision statements.

Vision.

Currently, DLF does not have a vision statement; however, they have four (4) core considerations by which they guided. These core values are as follows:

1. *Creativity* – Providing authentic and customized solutions to the issues that present themselves. They believe in using any medium to deliver content once it is appropriate for the project and aids the process of improving human condition with the empowerment of character development.
2. *Initiative* – DLF is long-term and vision-oriented; therefore, they take a proactive stance by hosting think-tanks and discussions that peer into the future. The information garnered from these meetings help them to then map out the best solution for their stakeholders.
3. *Collaboration* – DLF is open to partnerships that assist with their goal of providing solutions to the problems impacting youth and family development.

4. *Incorruptibility* – DLF through their actions aim at creating an environment which fosters the highest levels of principle-based accuracy, transparency, accountability and business ethics.

Mission.

Effectively empower young people across various sectors of society, through inspiring and innovative programmes and projects, which will produce transformation, increase productivity and thereby contribute to a better society.

From DLF's core components and mission statement, it is clearly understood that the organization is fully committed to the growth and development of young people by designing activities that are principle-based and will therefore produce long-lasting change within the youths of Jamaica. This FGP, once implemented, will allow the DLF to further enrich their programme offerings to stakeholders with the use of information technology.

Organizational structure.

The DLF is managed by a handful of persons as the Foundation is comprised of five (5) members of the board; the chairman, secretary and three (3) other members. These individuals at the end of the day sign off on all activities that are carried out by the Foundation. This organizational structure is considered a flat structure and is also known as a horizontal organization or de-layering. This is depicted by Figure 1 below:

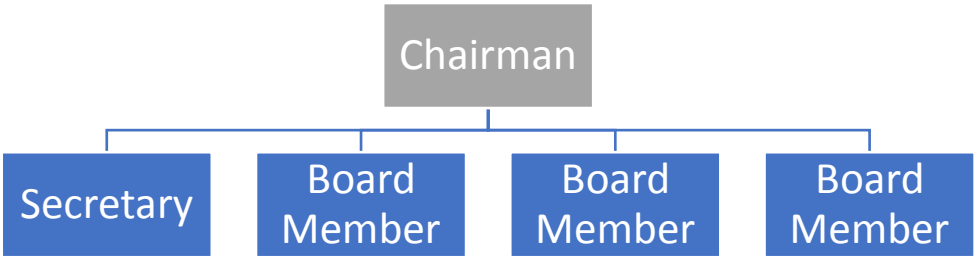


Figure 1. Organizational Structure (Source: T. Williams, Personal Communication, 14 July 2017)

Products offered.

The DLF currently has the following four (4) main programmes:

- *JustBoys Global*™ – the aim is to develop boys who will operate with integrity and exhibit strong leadership among their peers. This cadre of ethically-directed young men will contribute to a better society where proper regard for human life will be fostered.
- *PureGirl House Internation*™ – The fourfold mandate speaks to transitioning girls to accurate womanhood, providing a structure of support for girls as they journey through the stages of adolescence, developing and mobilizing girls from all walks of life to positively impact their society, and developing a range of empowerment programmes for girls and persons who work with girls.
- *Marriage Enrichment Programme* – this programme was developed to:
    - Provide multiple fora for building stronger and better marriages;
    - Empower married couples to train and build other married couples;
    - Conduct parenting seminars and workshops to further entrench the tenets of wholesome family life; and

- Equip unmarried individuals to undertake the quality building of successful marriages.

- *Civic Empowerment* – designed to promote principles and values-based citizenry; provide programmes to help Jamaicans see themselves as nation builders; provide training opportunities in areas of personal development; and provide leadership programmes to develop Jamaicans as transformational leaders of their families and communities.

2.2 Project Management Concepts

Project.

The Project Management Institute (PMI, 2013) uses two words to describe a project: temporary and unique. A project is temporary because it has definite start and end dates and therefore defined scope and resources. Projects are also considered unique as the operations are not routine and should produce a specific product, service or result.

This FGP by PMI's definition is categorized as a project since the final product which is the Project Management Plan is unique for DLF and will have to be completed by December 2017.

Project management.

Pratt (2016) states that project management "is the discipline of using established principles, procedures and policies to manage a project from concept through completion". She goes on further to mention that project management "oversees the planning, organizing and implementing of a project." This is in full support of the PMI's (2013) definition which outlines project management as "the application of knowledge, skills, tools and techniques to project activities to meet the project requirements."

Project life cycle.

A project life cycle is the series of phases that a project passes through from its initiation to its closure (PMI, 2013, p38). The number and names of these phases will depend on the industry and organization; however, project phases are generally defined in terms of major deliverables, resources and skills involved, implementing a control point and/or involvement of a third party. All projects can be characterized by the following life cycle structure:

- Starting the project;
- Organizing and preparing;
- Carrying out the project work; and
- Closing the project.

Figure 2 below displays how cost and staffing levels change through each generic project life cycle phase.

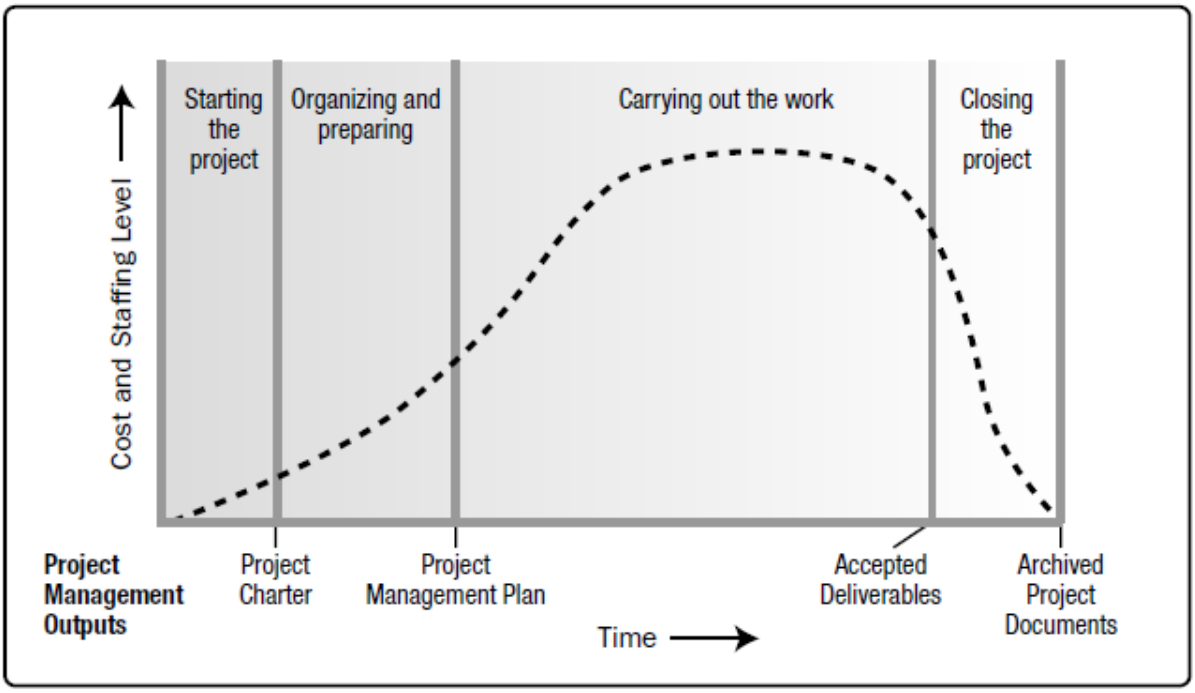


Figure 2. Typical Cost and Staffing Levels Across a Generic Project Life Cycle Structure (Source: PMI, 2013)

For this FGP, only the first two phases will be completed. The actual execution of implementing the Community Cyber Centre and closing activities will be completed through another project.

Project management processes.

The Collins English Dictionary defines a process as a series of actions which are carried out to achieve a specific result. This definition is further elaborated by the PMI (2013), which defines a process as "a set of interrelated actions and activities performed to create a pre-specified product, service, or result."

The PMBOK Guide (2013) categories the project management processes into five (5) groups:

- Initiating – processes which define a new project or a project phase of an existing project by obtaining authorization to begin.
- Planning – these processes establish the scope, refine the objectives and define the course of action to achieve objectives.
- Executing – the processes performed to complete the work defined to meet project specifications.
- Monitoring and Controlling – these processes track, review and regulate the progress and performance of the project.
- Closing – these processes finalizes all activities across all process groups to formally close the project or phase.

The basic project management processes and how they relate to each other are depicted in Figure 3 below:

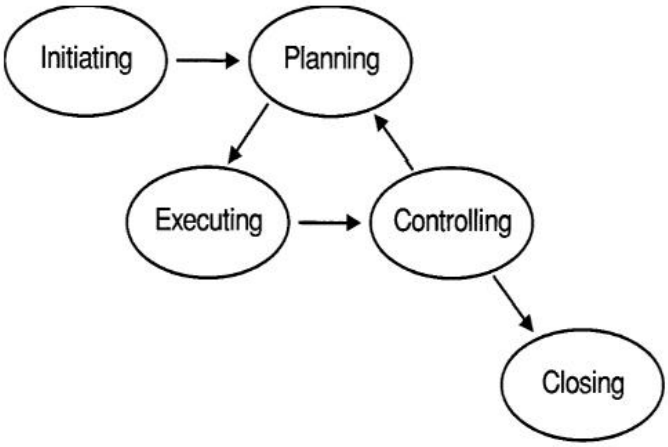


Figure 3. Basic Project Management Processes (Source: Duncan, W. R. Project Management Journal, September 1993)

Project management knowledge areas.

Project Management Processes are further grouped into ten knowledge areas. These areas represent a complete set of concepts, terms and activities that make up a professional field (PMI, 2013, p. 60). As stated by PMI (2013), the ten (10) knowledge areas are as follows:

- Project Integration Management - includes the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups.
- Project Scope Management - includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully.
- Project Time Management – includes the processes required to manage the timely completion of the project.
- Project Cost Management – includes the processes involved in planning, estimating, budgeting, financing, funding, managing and controlling costs so that the project can be completed within the approved budget.

- Project Quality Management – includes the processes and activities of the performing organization that determine quality policies, objectives and responsibilities so that the project will satisfy the needs for which it was undertaken.
- Project Human Resource Management – includes the processes that organize, manage and lead the project team.
- Project Communications Management – includes the processes that are required to ensure timely and appropriate planning, collection, creation, distribution, storage, retrieval, management, control, monitoring and the ultimate disposition of project information.
- Project Risk Management – include the processes of conducting risk management planning, identification, analysis, response planning and controlling risk on a project.
- Project Procurement Management – includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team.
- Project Stakeholder Management – included the processes required to identify the people, groups or organizations that could impact or be impacted by the project, to analyze stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution.

Chart 1 below shows how the project management processes are grouped into the ten (10) knowledge areas.

Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	**Planning Process Group**	**Executing Process Group**	**Monitoring and Controlling Process Group**	**Closing Process Group**
4. Project Integration Management	4.1 Develop Project Charter	4.2 Develop Project Management Plan	4.3 Direct and Manage Project Work	4.4 Monitor and Control Project Work 4.5 Perform Integrated Change Control	4.6 Close Project or Phase
5. Project Scope Management		5.1 Plan Scope Management 5.2 Collect Requirements 5.3 Define Scope 5.4 Create WBS		5.5 Validate Scope 5.6 Control Scope	
6. Project Time Management		6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Resources 6.5 Estimate Activity Durations 6.6 Develop Schedule		6.7 Control Schedule	
7. Project Cost Management		7.1 Plan Cost Management 7.2 Estimate Costs 7.3 Determine Budget		7.4 Control Costs	
8. Project Quality Management		8.1 Plan Quality Management	8.2 Perform Quality Assurance	8.3 Control Quality	
9. Project Human Resource Management		9.1 Plan Human Resource Management	9.2 Acquire Project Team 9.3 Develop Project Team 9.4 Manage Project Team		
10. Project Communications Management		10.1 Plan Communications Management	10.2 Manage Communications	10.3 Control Communications	
11. Project Risk Management		11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk Analysis 11.5 Plan Risk Responses		11.6 Control Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Control Procurements	12.4 Close Procurements
13. Project Stakeholder Management	13.1 Identify Stakeholders	13.2 Plan Stakeholder Management	13.3 Manage Stakeholder Engagement	13.4 Control Stakeholder Engagement	

Chart 1. Project Management Process Group and Knowledge Area Mapping (Source: PMI, A Guide to the Project Management Body of Knowledge (PMBOK Guide) – 5th Edition, 2013)

3 METHODOLOGICAL FRAMEWORK

3.1 Information Sources

Merriam-Webster defines information as knowledge that you get about someone or something; facts or details about a subject. The same dictionary also defines source as someone or something that provides what is wanted or needed; a person, book, etc. that gives information. Therefore, it can be surmised that information sources are the different mediums (person, thing or place) that provide facts or details about a specific topic.

Primary sources.

A primary source is defined by the Ithaca College Library (n.d.) as the “direct or first-hand evidence about an event, object, person, or work of art.” These sources include legal documents, eyewitness accounts, audio and video recordings, speeches, interviews, photographs and emails.

For this project, the main primary sources will come from interviews with members of the board and email correspondence.

Secondary sources.

The Ithaca College Library (n.d.) states that secondary sources “describes, discuss, interpret, comment upon, analyze, evaluate, summarize and process primary resources.” Secondary sources include book or movie reviews, dissertations, newspaper articles and scholarly journals that analyze another’s research.

The secondary sources used in this project will be the PMBOK Guide and the Internet.

Chart 2. Information Sources (Source: Compiled by the Author)

Objectives	Information sources	
	Primary	Secondary
1. To outline a strategy to create a Scope Management Plan that captures how the project scope will be defined, validated and controlled	Interviews with members of the board and email correspondence	PMBOK Guide and the internet
2. To outline a strategy to create a Schedule Management Plan, which documents the scheduling methodology with the corresponding scheduling tools and techniques	Interviews with members of the board and email correspondence	PMBOK Guide and the internet
3. To outline a strategy to create a Cost Management Plan that states how the project costs will be planned, structured and controlled	Interviews with members of the board and email correspondence	PMBOK Guide and the internet
4. To outline a strategy to create a Quality Management Plan that describes how the quality requirements set for the project will be met	Interviews with members of the board and email correspondence	PMBOK Guide and the internet
5. To outline a strategy to create a Risk Management Plan that captures how risk management activities will be structured and performed	Interviews with members of the board and email correspondence	PMBOK Guide and the internet

3.2 Research Methods

The Oxford Living Dictionary defines research as the "systematic investigation into and study of materials and resources in order to establish facts and reach new conclusions."

Analytical research method.

Kothari (2004) states that analytical research is where the researcher has to use facts or information already available and analyze these to make a critical evaluation of the material.

Qualitative research method.

Wyse (2011) describes qualitative research as:

- Primarily an exploratory research.
- It is used to gain an understanding of underlying reasons, opinions and motivations.
- It provides insights into the problem or helps to develop ideas or hypothesis for potential quantitative research."

For this FGP the primary research methods used will be analytical and qualitative research methods.

Chart 3. Research Methods (Source: Compiled by the author)

Objectives	Research methods	
	Analytical	Qualitative
1. To outline a strategy to create a Scope Management Plan that captures how the project scope will be defined, validated and controlled	Analysis of the information gathered from the Project Charter, Stakeholder Register, Requirements Traceability Matrix, and Project Scope Statement.	The Project Manager will conduct interviews the DLF Committee Members and Industry Consultants. This information will be then documented
2. To outline a strategy to create a Schedule Management Plan, which documents the scheduling methodology with the corresponding scheduling tools and techniques	Analysis of the information gathered from the Scope Baseline, Project Scope Statement, Activity List, Activity Resource Requirements, Project Network Schedule Diagram,	The Project Manager will host meetings with Industry Consultants to gather expert judgement to assist with developing a comprehensive plan for the Schedule Management Plan.

Objectives	Research methods	
	Analytical	Qualitative
	Activity Duration Estimates and Project Schedule.	
3. To outline a strategy to create a Cost Management Plan that states how the project costs will be planned, structured and controlled	Analysis of the information gathered from the Scope Baseline, Project Schedule, Activity Cost Estimate, and Project Funding Requirements.	The Project Manager will host meetings with Industry Consultants to gather expert judgement to assist with developing a comprehensive plan for the Cost Management Plan.
4. To outline a strategy to create a Quality Management Plan that describes how the quality requirements set for the project will be met	Analysis of the information gathered from the Scope Baseline, Schedule Baseline, Cost Baseline, Stakeholder Register, Requirements Documentation, Quality Metrics, Process Improvement Plan and Quality Checklist	The Project Manager will host meetings with Industry Consultants to gather expert judgement to assist with developing a comprehensive plan for the Quality Management Plan.
5. To outline a strategy to create a Risk Management Plan that captures how risk management activities will be structured and performed	Analysis of the information gathered from the Cost Management Plan, Schedule Management Plan, Quality Management Plan, Scope Baseline, Activity Cost Estimates, Activity Duration Estimates, Risk Register and Project Documents.	The Project Manager will host meetings with Industry Consultants to gather expert judgement to assist with developing a comprehensive plan for the Risk Management Plan. Also, meetings with the DLF Committee Members will be conducted to identify project risks.

3.3 Tools

PMI (2013) define a tool as something tangible, such as a template or software program, used in performing an activity to produce a product or result.

The tools used in the FGP are summarized in Chart 4 below.

Chart 4. Tools (Source: Compiled by the Author)

Objectives	Tools
1. To outline a strategy to create a Scope Management Plan that captures how the project scope will be defined, validated and controlled	Plan Scope Management: • Expert Judgment • Meetings Collect Requirements: • Interviews • Brainstorming • Benchmarking Define Scope: • Expert Judgment • Facilitated Workshops Create WBS: • Expert Judgment • Decomposition Validate Scope: • Group Decision Making Techniques Control Scope: • Variance Analysis
2. To outline a strategy to create a Schedule Management Plan, which documents the scheduling methodology with the corresponding scheduling tools and techniques	Plan Schedule Management: • Expert Judgment • Analytical Techniques Define Activities: • Expert Judgment • Decomposition Sequence Activities: • Precedence Diagramming Method • Dependency Determination • Leads and Lags Estimate Activity Resources • Expert Judgment • Bottom-up Estimating Estimate Activity Durations • Expert Judgment • Three-Point Estimating Develop Schedule • Critical Path Method

Objectives	Tools
	• Critical Chain Method • Schedule Compression Control Schedule • Performance Review • Schedule Compression
3. To outline a strategy to create a Cost Management Plan that states how the project costs will be planned, structured and controlled	Plan Cost Management • Expert Judgment • Analytical Techniques Estimate Costs • Expert Judgment • Bottom-up Estimating Determine Budget • Cost aggregation • Reserve Analysis Control Costs • Earned Value Management (EVM) • Forecasting
4. To outline a strategy to create a Quality Management Plan that describes how the quality requirements set for the project will be met	Plan Quality Management • Brainstorming • Benchmarking Perform Quality Assurance • Quality Audits • Process Analysis Control Quality • Inspection • Approved Change Request Review
5. To outline a strategy to create a Risk Management Plan that captures how risk management activities will be structured and performed	Plan Risk Management: • Analytical techniques • Expert judgment Identify Risks • Information gathering techniques • Risk Breakdown Structure (RBS) Perform Qualitative Risk Analysis • Risk probability and impact assessment • Probability and impact matrix Perform Quantitative Risk Analysis: • Quantitative risk analysis and modeling techniques Plan Risk Responses: • Contingent Response Strategies Control Risks • Risk Reassessment • Risk Audits • Variance and Trend Analysis • Reserve Analysis • Meetings

3.4 Assumptions and Constraints

An assumption is defined as a factor in the planning process that is considered to be true, real, or certain, without proof of demonstration while a constraint is a limiting factor that affects the execution of a project, program, portfolio, or process (PMI, PMBOK Guide, 2013).

Chart 5. Assumptions and constraints (Source: Compiled by the Author)

Objectives	Assumptions	Constraints
1. To outline a strategy to create a Scope Management Plan that captures how the project scope will be defined, validated and controlled	The stakeholders will provide all the information required	The Project Management Plan should be completed by December 2017
2. To outline a strategy to create a Schedule Management Plan, which documents the scheduling methodology with the corresponding scheduling tools and techniques	The stakeholders will provide all the information required	The Project Management Plan should be completed by December 2017
3. To outline a strategy to create a Cost Management Plan that states how the project costs will be planned, structured and controlled	The stakeholders will provide all the information required	The Project Management Plan should be completed by December 2017
4. To outline a strategy to create a Quality Management Plan that describes how the quality requirements set for the project will be met	The stakeholders will provide all the information required	The Project Management Plan should be completed by December 2017
5. To outline a strategy to create a Risk Management Plan that captures how risk management activities will be structured and performed	The stakeholders will provide all the information required	The Project Management Plan should be completed by December 2017

3.5 Deliverables

A deliverable is defined as any unique and verifiable product, result, or capability to perform a service that is required to be produced to complete a process, phase, or project (PMI, PMBOK Guide, 2013).

Chart 6. Deliverables (Source: Compiled by the Author)

Objectives	Deliverables
1. To outline a strategy to create a Scope Management Plan that captures how the project scope will be defined, validated and controlled	Strategy to develop the Scope Management Plan
2. To outline a strategy to create a Schedule Management Plan, which documents the scheduling methodology with the corresponding scheduling tools and techniques	Strategy to develop the Schedule Management Plan
3. To outline a strategy to create a Cost Management Plan that states how the project costs will be planned, structured and controlled	Strategy to develop the Cost Management Plan
4. To outline a strategy to create a Quality Management Plan that describes how the quality requirements set for the project will be met	Strategy to develop the Quality Management Plan
5. To outline a strategy to create a Risk Management Plan that captures how risk management activities will be structured and performed	Strategy to develop the Risk Management Plan

4 RESULTS

4.1 Strategy to Develop the Scope Management Plan

Introduction.

As defined by the PMBOK Guide, 5th Edition, Project Scope Management includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully. For this project, the following processes were executed, which resulted in the delivery of the Scope Management Plan:

- Collect Requirements;
- Define Scope;
- Create Work Breakdown Structure (WBS);
- Validate Scope; and
- Control Scope.

The purpose of the Scope Management Plan is to outline how the project scope will be defined, validated and controlled for the project and therefore ensure that it is successfully completed as planned. The plan documents the requirements collected, scope definition, project work breakdown structure, validation of scope and scope change control.

Collect requirements.

Collect requirements is the process of determining, documenting and managing stakeholder needs and requirements to meet project objectives. This process provides the basis for defining and managing the project scope (PMBOK Guide, 5th Edition, p. 110). The inputs for the collect requirements process were the Project Charter and Stakeholder Register. Requirements were then defined by conducting interviews and facilitating brainstorming sessions with the Dynamic Life Foundation (DLF) Committee Members and industry consultants. Benchmarking was also done to compare planned practices with industry best practices to identify areas of improvement and provide a basis for measuring performance. From this information, the project team developed the Requirements Traceability Matrix (refer to Chart 7 below).

Chart 7. Requirements Traceability Matrix (Source: Compiled by the Author)

Requirement Information					Relationship Traceability	
ID	Requirement	Priority	Category	Source	Relates to Objective	WBS Deliverable
1	Develop a Scope Management Plan outlining how the project will be defined, validated and controlled	1	Business Requirement	Chairman, DLF	Specific Objective #1 from Charter	1.1
2	Develop a Schedule Management Plan documenting the scheduling methodology with the corresponding scheduling tool and techniques	1	Business Requirement	Chairman, DLF	Specific Objective #2 from Charter	1.2
3	Develop a Cost Management Plan stating how the project costs will be planned, structured and controlled	1	Business Requirement	Chairman, DLF	Specific Objective #3 from Charter	1.3
4	Develop a Quality Management Plan that describes how the quality requirements set for the project will be met	1	Business Requirement	Chairman, DLF	Specific Objective #4 from Charter	1.4
5	Develop a Risk Management Plan to outline how risk management activities will be structured and performed	1	Business Requirement	Chairman, DLF	Specific Objective #5 from Charter	1.5

Define scope.

Define Scope is the process of developing a detailed description of the project and product. The key benefit of this process is that it describes the product, service or result boundaries by defining which of the requirements collected will be included in and executed from the project scope (PMBOK Guide, 5th Edition, p. 120). For this process, the information gathered from the Project Charter and Requirements Traceability Matrix was used as inputs. Feedback from consultants with the required expertise of implementing cyber centres within communities across the island provided recommendations on the scope of the project, which assisted in properly defining the needs of the project. This process resulted in the development of the Project Scope Statement (See Figures 5 and 6 below).

PROJECT NAME	Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)		
AUTHOR	S. Spencer	DATE	Sep-17

SCOPE OF WORK

The purpose of this project is to develop a Project Management Plan to assist the Dynamic Life Foundation (DLF) with the implementation of a Community Cyber Centre. This document is necessary to acquire permission from the relevant authorities in order to proceed with the initiative.

The benefit to be gained from the project is that the end product ensures sustainability of the initiative by providing a comprehensive management framework covering the scope from execution to closure. Once the Foundation gets the go-ahead, the implementation process will be easier as all the necessary details were already considered.

PROJECT DELIVERABLES

General objective:
To develop a comprehensive Project Management Plan to assist DLF with the proper implementation of a Community Cyber Centre.

Specific objectives:
1. To create a Scope Management Plan outlining how the project scope will be defined, validated and controlled.
2. To create a Schedule Management Plan documenting the scheduling methodology with the corresponding scheduling tool and techniques.
3. To create a Cost Management Plan that states how the project costs will be planned, structured and controlled.
4. To create a Quality Management Plan that describes how the quality requirements set for the project will be met.
5. To create a Risk Management Plan to outline how risk management activities will be strucutred and performed.

EXCLUSIONS

The following subsidiary plans shall not be included in the Project Management Plan as they are not deemed necessary due to the scope of the project:
• Human Resource Management Plan
• Communications Management Plan
• Procurement Management Plan
• Stakeholder Management Plan

ASSUMPTIONS

The following assumptions are made:
• The project plan will be completed within the three (3) months allotted.
• The turnaround time for approval of all deliverable will be no longer than three (3) days.
• The only resourse needed is the Project Manager.

Figure 4. Project Scope Statement, Page 1 (Source: Compiled by Author)

MILESTONES	
DELIVERY DATE	TASK
22-Sep-17	Scope Management Plan Completed and Approved
13-Oct-17	Schedule Management Plan Completed and Approved
24-Oct-17	Cost Management Plan Completed and Approved
31-Oct-17	Quality Management Plan Completed and Approved
7-Nov-17	Risk Management Plan Completed and Approved

STAKEHOLDERS		
ID	NAME & TITLE	ROLE / RESPONSIBILITIES
STK001	Mr. Regmond. Fernandez, Chairman	Project Sponsor, approves all deliverables submitted
STK002	Ms. Tawjna Williams, Secretary	Main contact for information and scheduling meetings with DLF Board Members

ESTIMATED COST		
EXPENSE	DESCRIPTION	COST
SERVICES	Submission of the completed Scope Management Plan	$ 339,840.00
SERVICES	Submission of the completed Schedule Management Plan	$ 181,440.00
SERVICES	Submission of the completed Cost Management Plan	$ 105,600.00
SERVICES	Submission of the completed Quality Management Plan	$ 79,200.00
SERVICES	Submission of the completed Risk Management Plan	$ 26,400.00
	TOTAL	$ 732,480.00

PAYMENT TERMS & CONDITIONS
• Invoices should be submitted for payment once a deliverable is approved by the Project Sponsor. • All Invoices should be delivered to the DLF Headquarters for payment. • Payments on invoices will be made at most three (3) weeks after submission.

APPROVAL & COMMENTS		
PROJECT MANAGER	Simone Spencer	
SIGNATURE		
DATE		
PROJECT SPONSOR	Regmond Fernandez	
SIGNATURE		
DATE		
PROJECT STAKEHOLDERS	Tawjna Williams	
SIGNATURE		
DATE		

Figure 5. Project Scope Statement, Page 2 (Source: Compiled by Author)

Create work breakdown structure (WBS).

Create WBS is the process of subdividing project deliverables and project work into smaller, more manageable components. The key benefit of this process is that it provides a structured vision of what has to be delivered (PMBOK Guide, 5th Edition, p. 125). The input for this process was the Project Scope Statement which was then divided and subdivided into smaller, more manageable work packages. This process resulted in the creation of the WBS and WBS Dictionary (refer to Charts 8 and 9 below).

Chart 8. Work Breakdown Structure (Source: Compiled by the Author)

Level 0	Level 1	Level 2
1.0 Project Management Plan for the Implementation of a Community Cyber Centre for DLF	1.1 Scope Management Plan	1.1.1 Requirements Traceability Matrix 1.1.2 Project Scope Statement 1.1.3 Work Breakdown Structure 1.1.4 WBS Dictionary
	1.2 Schedule Management Plan	1.2.1 Activity List 1.2.2 Project Schedule Network Diagram 1.2.3 Activity Resource Requirements 1.2.4 Activity Duration Estimates 1.2.5 Schedule Baseline
	1.3 Cost Management Plan	1.3.1 Activity Cost Estimates 1.3.2 Cost Baseline 1.3.3 Project Funding Requirements 1.3.4 Cost Forecasts
	1.4 Quality Management Plan	1.4.1 Quality Checklists 1.4.2 Quality Metrics 1.4.2 Process Improvement Plan
	1.5 Risk Management Plan	1.5.1 Risk Register

In order to more clearly define the work necessary for project completion the WBS Dictionary is used. The WBS Dictionary includes an entry for each WBS element. The WBS Dictionary includes a detailed description of work for each element and the deliverables, resource needs for the element and any additional comments. The project team will use the WBS Dictionary as a statement of work for each WBS element.

Chart 9. WBS Dictionary (Source: Compiled by the Author)

WBS Level	WBS Code	WBS Element Name	Description of Work	Deliverables(s)	Committed Resources	Comments
1	**1.1**	**Scope Management Plan**	**Documenting how the project scope will be defined, validated and controlled**	**Completed Scope Management Plan**	**Project Manager**	
2	1.1.1	Requirements Traceability Matrix	Documenting the links of the project requirements from their origin to the deliverables that satisfy them	Completed Matrix	Project Manager	
	1.1.2	Project Scope Statement	Documenting the description of the project scope, major deliverables, assumptions, and constraints	Defined Scope	Project Manager	
	1.1.3	Work Breakdown Structure	Documenting the decomposition of the total scope of work to be carried out by the project team to accomplish the project objectives and create the required deliverables	Completed WBS	Project Manager	
	1.1.4	WBS Dictionary	Documenting detailed deliverable, activity and scheduling information about each component in the WBS	Completed WBS Dictionary	Project Manager	
1	**1.2**	**Schedule Management Plan**	**Documenting the scheduling methodology with the corresponding scheduling tool and technique**	**Completed Schedule Management Plan**	**Project Manager**	

WBS Level	WBS Code	WBS Element Name	Description of Work	Deliverables(s)	Committed Resources	Comments
2	1.2.1	Activity List	Documenting a comprehensive list that includes all schedule activities required on the project	Completed Activity List	Project Manager	
	1.2.2	Project Schedule Network Diagrams	Documenting dependencies among the project activities	Completed Network Diagram	Project Manager	
	1.2.3	Activity Resource Requirements	Documenting the types and quantities of resources required for each activity in a work package	Complete Activity Resource Requirements Document	Project Manager	
	1.2.4	Activity Duration Estimates	Documenting quantitative assessments of the likely number of time periods that are required to complete an activity	Completed Activity Duration Estimates	Project Manager	
	1.2.5	Project Schedule	Presenting linked activities with planned dates, durations, milestones and resources	Completed Project Schedule	Project Manager	
1	**1.3**	**Cost Management Plan**	**Documenting how the project costs will be planned, structured and controlled**	**Completed Cost Management Plan**	**Project Manager**	
2	1.3.1	Activity Cost Estimates	Documenting quantitative assessments of the probable costs required to complete project work	Completed Activity Cost Estimates	Project Manager	
	1.3.2	Cost Baseline	Documenting approved budgets for the different schedule activities	Completed Cost Baseline	Project Manager	
	1.3.3	Project Funding Requirements	Documenting funding requirements	Completed Project Funding Requirements	Project Manager	
	1.3.4	Cost Forecasts	Documenting Estimate at Completion (EAC) Value	Completed Cost Forecasts	Project Manager	

WBS Level	WBS Code	WBS Element Name	Description of Work	Deliverables(s)	Committed Resources	Comments
1	**1.4**	**Quality Management Plan**	**Documenting how the quality requirements set for the project will be met**	**Completed Quality Management Plan**	**Project Manager**	
2	1.4.1	Quality Checklists	Creating a checklist that is used to verify that the set of required steps have been performed	Completed Quality Checklist	Project Manager	
	1.4.2	Quality Metrics	Describing the project and how the control quality process will measure it	Completed Quality Metrics	Project Manager	
	1.4.3	Process Improvement Plan	Documenting the steps for analyzing project management to identify activities that enhance their value	Completed Process Improvement Plan	Project Manager	
1	1.5	**Risk Management Plan**	**Documenting how risk management activities will be structured and performed**	**Completed Risk Management Plan**	**Project Manager**	
2	1.5.1	Risk Register	Documenting the results of the risk analysis and risk response planning	Completed Risk Register	Project Manager	

Validate scope.

Validate Scope is the process of formalizing acceptance of the completed project deliverables. The key benefit of this process is that it brings objectivity to the acceptance process and increases the chance of final product, service, or result acceptance by validating each deliverable (PMBOK Guide, 5th Edition, p. 133). As the project progresses, the inputs for this process will be the Requirements Documentation, Requirements Traceability Matrix, Verified Deliverables and Work Performance Data. These inputs will be used by the Project Manager to verify that the scope meets the requirements defined and through group decision-making techniques resulted in the following outputs:

- Accepted Deliverables;
- Change Requests (if deliverables were not accepted);
- Work Performance Information; and
- Project Documentation Updates.

Accepting deliverables.

The Project Manager and Sponsor will meet for formal acceptance of the deliverable. During this meeting, the Project Manager will present the deliverable to the Project Sponsor for formal acceptance. The Project Sponsor will accept the deliverable by signing a project deliverable acceptance document (see Figure 7 below). This will ensure that project work remains within the scope of the project on a consistent basis throughout the life of the project.

PROJECT DELIVERABLE ACCEPTANCE FORM

Project Name:

Deliverable Name:

Project Manager:

Project Sponsor:

I (We), the undersigned, acknowledge and accept delivery of the work completed for this deliverable on behalf of our organization. My (Our) signature(s) attest(s) to my (our) agreement that this deliverable has been completed. No further work should be done on this deliverable. If the deliverable is not acceptable, reasons are stated and corrective actions are described.

Name	Title	Signature	Date

1. Was this deliverable completed to your satisfaction: Yes ☐ No ☐

2. Please provide the main reasons for your satisfaction or dissatisfaction with this deliverable.

_____

_____

_____

_____

3. If the deliverable is not acceptable, describe in detail what additional work must be done to complete it.

_____

_____

_____

_____

Contact's signature for resubmission of deliverable if found unacceptable: _____

Figure 6. Sample Project Deliverable Acceptance Form (Source: "Figure 7-5. Sample Deliverable", n.d.) Retrieved from: http://slideplayer.com/slide/5875272/19/images/21/ Figure+7-5. +Sample+ Deliverable+Acceptance+Form.jpg)

Control scope.

Control Scope is the process of monitoring the status of the project and product scope and managing changes to the scope baseline. The key benefit of this process is that it allows the scope baseline to be maintained throughout the project (PMBOK Guide, 5th Edition, p.136). Similar to the Validate Scope process, the full process will take place during the life of the project and therefore, the inputs will be the Requirements Documentation, Requirement Traceability Matrix and Work Performance Data. Through variance analysis, the Project Manager will be able to the following outputs:

- Work Performance Information;
- Change Requests (as needed);
- Project Management Plan updates; and
- Project Documents updates;

The Project Manager and the project team will work together to control the scope of the project. The project team will leverage the WBS Dictionary by using it as a statement of work for each WBS element. The project team will ensure that they perform only the work described in the WBS dictionary and generate the defined deliverables for each WBS element. The Project Manager will oversee the project team and the progression of the project to ensure that this scope control process is followed and progress is reported through Project Scope measurements tools.

Managing change.

Proposed scope changes may be initiated by the Project Manager or any member of the project team. All change requests will be submitted to provide estimate and impact to schedule and costs (if any) to the Project Manager who will then evaluate the requested scope change. Upon acceptance of the scope change request, the Project Manager will submit the scope change request to the Change Control Board and Project Sponsor for acceptance. Upon approval of scope changes by the Change Control Board and Project Sponsor, the Project Manager will update all project documents and communicate the scope change to all stakeholders. Based on feedback and input from the Project Manager and Team Members, the Project Sponsor is responsible for the acceptance of the final project deliverables and project scope. See Change Request Form at Figure 8 below.

CHANGE REQUEST FORM

Project:	**Date:**
Change Requester:	**Change No:**

Change Category (Check all that apply):

☐ Schedule ☐ Cost ☐ Scope ☐ Requirements/Deliverables

☐ Testing/Quality ☐ Resources

Does this Change Affect (Check all that apply):

☐ Corrective Action ☐ Preventative Action ☐ Defect Repair ☐ Updates

☐ Other

Describe the Change Being Requested:

Describe the Reason for the Change:

Describe all Alternatives Considered:

Describe any Technical Changes Required to Implement this Change:

Describe Risks to be Considered for this Change:

Estimate Resources and Costs Needed to Implement this Change:

Describe the Implications to Quality:

Disposition:

☐ Approve ☐ Reject ☐ Defer

Justification of Approval, Rejection or Deferral:

Change Board Approval:

Name	Signature	Date

Figure 7. Sample Change Request Form (Source: Project Management Docs, (n.d.) Retrieved from: http://www.projectmanagementdocs.com/project-documents/change-request.html#axzz4w4vsWyb4)

Roles and responsibilities.

The table below outlines the roles and responsibilities for the scope management of this project.

Chart 10. Scope Management Roles and Responsibilities (Source: Compiled by the Author)

Role	Description
Sponsor	• Approve or deny scope change requests as appropriate. • Evaluate need for scope change requests. • Accept project deliverables.
Change Control Board	• Approve or deny scope change requests as appropriate. • Evaluate need for scope change requests.
Project Manager	• Measures and verify project scope. • Facilitate scope change requests. • Facilitate impact assessments of scope change requests. • Organize and facilitate scheduled change control meetings. • Communicate outcomes of scope change requests. • Update project documents upon approval of all scope changed. • Facilitate team level change review process.
Team Member	• Participate in defining change resolutions. • Evaluate the need for scope changes and communicate them to the project manager, as necessary.

4.2 Strategy to Develop the Schedule Management Plan

Introduction.

As defined by the PMBOK Guide, 5th Edition, Project Schedule Management includes the processes required to manage the timely completion of a project. For this project, the following processes were executed, which resulted in the delivery of the Schedule Management Plan:

- Define Activities;
- Sequence Activities;
- Estimate Activity Resources;
- Estimate Activity Durations;
- Develop Schedule; and
- Control Schedule.

The project schedule is the roadmap for how the project will be executed. Schedules are an important part of any project as they provide the project team, sponsor, and stakeholders a picture of the project's status at any given time. The purpose of the Schedule Management Plan is to define the approach the project team will use in creating the project schedule. This plan also includes the defined activities, sequence activities, estimated activity resources, estimated activity durations, schedule development and schedule control.

Define activities.

Define Activities is the process of identifying and documenting the specific actions to be performed to reproduce the project deliverables. The key benefit of this process is to break down work packages into activities that provide a basis for estimating, scheduling, executing, monitoring and controlling the project work (PMBOK Guide, 5th Edition, p. 149). The Scope Baseline developed from the Project Scope Management process was used as the input for the define activities process. The work packages from the WBS were then decomposed and along with expert judgment, the Activity List for the project was developed (see Chart 11 below).

Chart 11. Activity List (Source: Compiled by the Author)

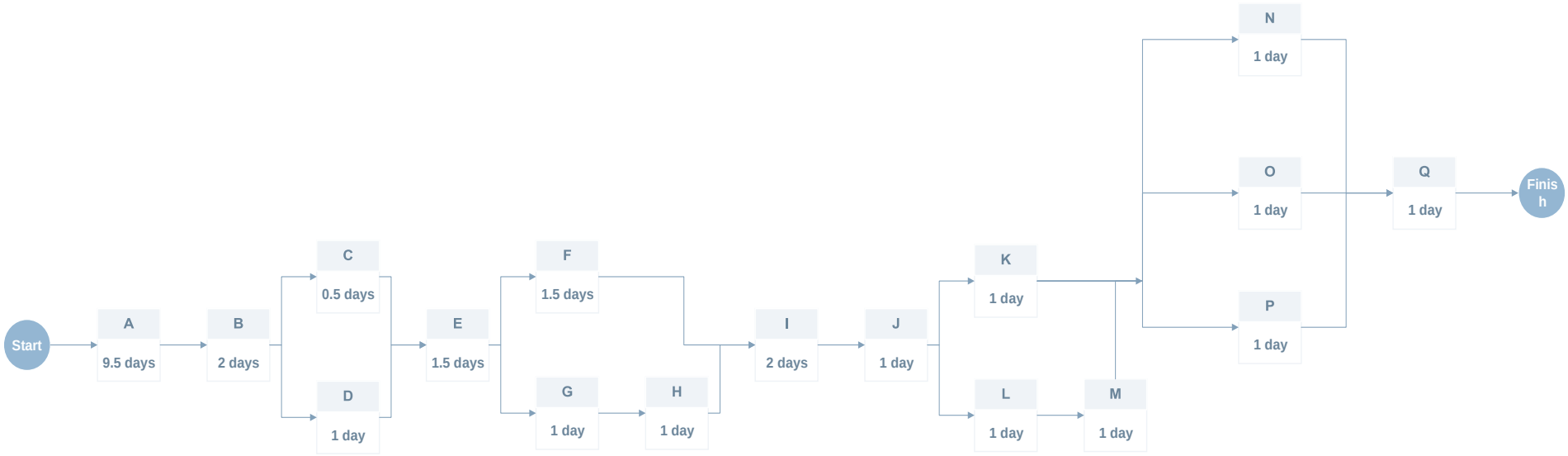
Activity List			
Project: Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)			
WBS Code	**Activity Name**	**Description of Work**	**Responsibility**
1.1.1	**Requirements Traceability Matrix**		
1.1.1.1	Collect Requirements	Conducting interviews and facilitating brainstorming sessions with stakeholders to identify requirements to meet objectives	Project Manager
1.1.1.2	Document Requirement	Documenting stakeholder needs and requirements to meet project objectives	Project Manager
1.1.2	**Project Scope Statement**		
1.1.2.1	Define Scope	Developing a detailed description of the project	Project Manager
1.1.2.2	Document Scope Statement	Documenting which of the requirements collected will be included or excluded from the project scope	Project Manager
1.1.3	**Work Breakdown Structure**		
1.1.3.1	Create WBS	Subdividing project deliverables and project work into smaller, more manageable components	Project Manager
1.1.4	**WBS Dictionary**		
1.1.4.1	Create WBS Dictionary	Documenting detailed deliverable, activity and scheduling information about each component in the WBS	Project Manager
1.2.1	**Activity List**		
1.2.1.1	Identify Activities	Determining the specific actions to be performed to produce the project deliverables	Project Manager
1.2.1.2	Document Activities	Documenting the specific actions to be performed to produce the project deliverables	Project Manager
1.2.2	**Project Schedule Network Diagram**		
1.2.2.1	Identify Activity Relationships	Determining the relationships among the project activities	Project Manager
1.2.2.2	Document Activity Relationship	Documenting the relationships among the project activities	Project Manager
1.2.3	**Activity Resource Requirements**		
1.2.3.1	Estimate Activity Resources	Estimating the type of quantities of human resources required to perform each activity	Project Manager
1.2.4	**Activity Duration Estimates**		
1.2.4.1	Estimate Activity Durations	Estimating the number of work periods needed to complete individual activities with estimated resources	Project Manager
1.2.5	**Project Schedule**		
1.2.5.1	Determine Baseline Schedule	Analyzing activity sequences, durations, resource requirements and schedule constraints to create schedule model	Project Manager
1.2.5.2	Create Project Schedule	Documenting project schedule	Project Manager
1.3.1	**Activity Cost Estimates**		

Activity List			
Project: Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)			
WBS Code	**Activity Name**	**Description of Work**	**Responsibility**
1.3.1.1	Estimate Costs	Developing an approximation of the monetary resources needed to complete project activities	Project Manager
1.3.2	**Cost Baseline**		
1.3.2.1	Determine Budget	Aggregating the estimated costs of individual activities to establish an authorized cost baseline	Project Manager
1.3.3	**Project Funding Requirements**		
1.3.3.1	Identify Funding Requirements	Determining total funds required and source(s) of funding	Project Manager
1.3.4	**Cost Forecasts**		
1.3.4.1	Calculate EAC Value	Documenting the EAC Value	Project Manager
1.4.1	**Quality Checklists**		
1.4.1.1	Identify Quality Requirements	Determining quality requirements and/or standards for the project and its deliverables	Project Manager
1.4.1.2	Create Quality Checklist	Documenting how the project will demonstrate compliance with relevant quality requirements and/or standards	Project Manager
1.4.2	**Quality Metrics**		
1.4.2.1	Documenting Quality Metrics	Documenting how the control quality process will be measured	Project Manager
1.4.3	**Process Improvement Plan**		
1.4.3.1	Documenting Process Improvement Plan	Documenting the steps for analyzing project management to identify activities that enhance their value	Project Manager
1.5.1	**Risk Register**		
1.5.1.1	Identify Risks	Determining which risks may affect the project	Project Manager
1.5.1.2	Document Risks	Documenting the characteristics of the risks identified	Project Manager

Sequence activities.

Sequence Activities is the process of identifying and documenting relationships among the project activities. The key benefit of this process is that it defined the logical sequence of work to obtain the greatest efficiency given all project constraints (PMBOK Guide, 5th Edition, p. 153). The inputs to this process were the Activity List and Project Scope Statement. A Project Schedule Network Diagram was then generated using the following techniques:

- Precedence Diagramming Method (PDM);
- Dependency Determination; and
- Leads and Lags.



Activity Titles			
A	Requirements Traceability Matrix	J	Activity Cost Estimate
B	Project Scope Statement	K	Cost Baseline
C	WBS	L	Project Funding Requirements
D	WBS Dictionary	M	Cost Forecasts
E	Activity List	N	Quality Checklist
F	Project Schedule Network Diagram	O	Quality Metrics
G	Activity Resource Requirements	P	Process Improvement Plan
H	Activity Duration Estimates	Q	Risk Register
I	Project Schedule		

Figure 8. Project Schedule Network Diagram (Source: Compiled by the Author)

Estimate activity resources.

Estimate Activity Resources is the process of estimating the type and quantities of material, human resources, equipment or supplies required to perform each activity. The key benefit of this process is that it identifies the type, quantity and characteristics of resources required to complete the activity which allows more accurate cost and duration estimates (PMBOK Guide, 5th Edition, p. 160). Based on the Activity List generated for the project, the only resource identified was the Project Manager; this was represented in the Activity Resource Requirements (see Chart 12 below).

Chart 12. Activity Resource Requirements (Source: Compiled by the Author)

Activity Resource Requirements				
Project: Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)				
WBS Code	**Activity Name**	**Type of Resource**	**Qty**	**Comments**
1.1.1	Requirements Traceability Matrix	People	1	Project Management skills needed
1.1.2	Project Scope Statement	People	1	Project Management skills needed
1.1.3	Work Breakdown Structure	People	1	Project Management skills needed
1.1.4	WBS Dictionary	People	1	Project Management skills needed
1.2.1	Activity List	People	1	Project Management skills needed
1.2.2	Project Schedule Network Diagram	People	1	Project Management skills needed
1.2.3	Activity Resource Requirements	People	1	Project Management skills needed
1.2.4	Activity Duration Estimates	People	1	Project Management skills needed
1.2.5	Project Schedule	People	1	Project Management skills needed
1.3.1	Activity Cost Estimates	People	1	Project Management skills needed
1.3.2	Cost Baseline	People	1	Project Management skills needed
1.3.3	Project Funding Requirements	People	1	Project Management skills needed
1.3.4	Cost Forecasts	People	1	Project Management skills needed
1.4.1	Quality Checklists	People	1	Project Management skills needed
1.4.2	Quality Metrics	People	1	Project Management skills needed
1.4.3	Process Improvement Plan	People	1	Project Management skills needed
1.5.1	Risk Register	People	1	Project Management skills needed

Estimate activity durations.

Estimate Activity Durations is the process of estimating the number of work periods needed to complete individual activities with estimated resources. The key benefit of this process is that it provides the amount of time each activity will take to complete, which is a major input into the Develop Schedule process (PMBOK Guide, 5th Edition, p. 165). For the project, the Activity List, Activity Resource Requirements and Project Scope Statements were used to generate the Activity Duration Estimates. This was done using expert judgment and the Three-point Estimating technique.

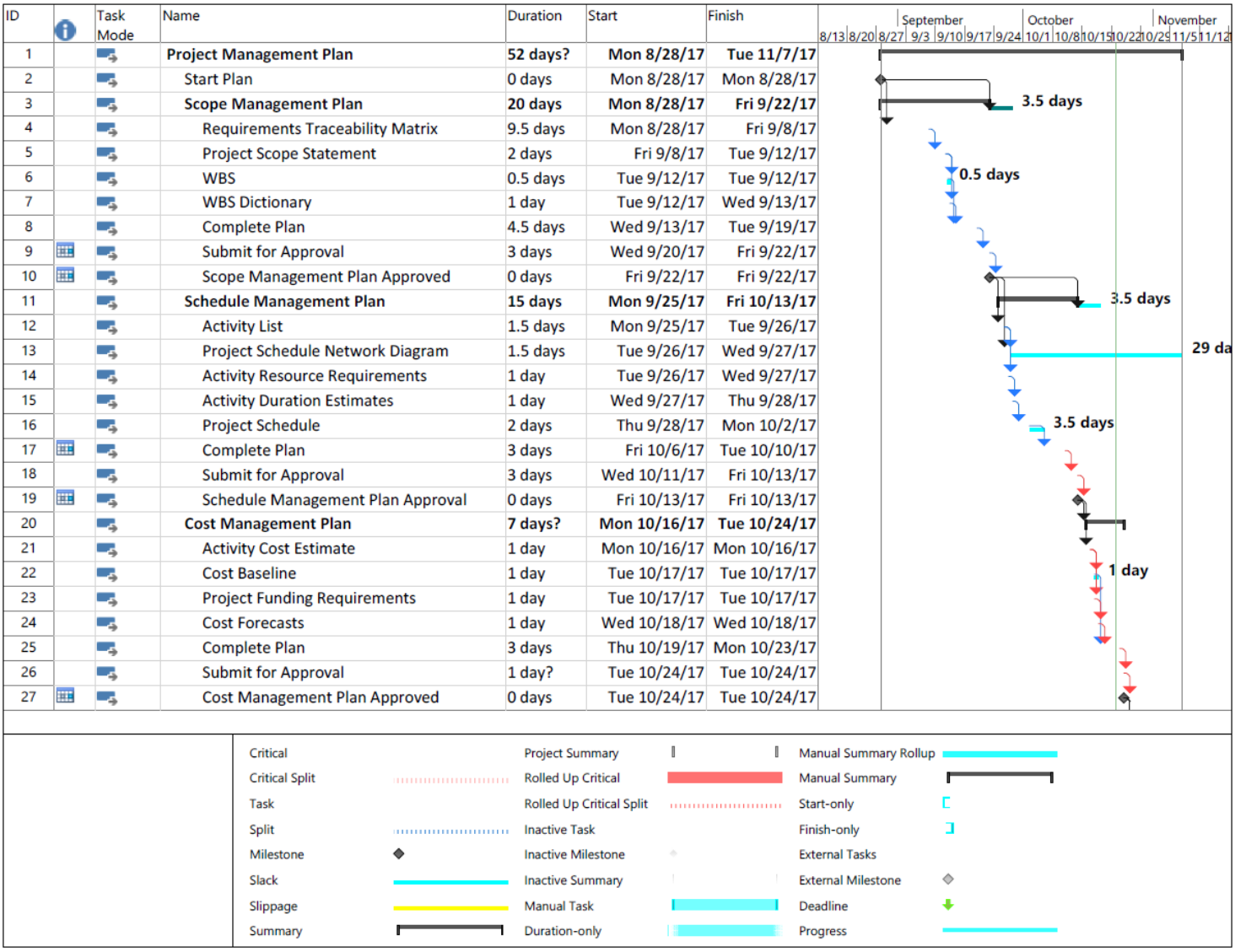
Chart 13. Activity Duration Estimates (Source: Compiled by the Author)

Activity Duration Estimates					
Project: Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)					
WBS Code	**Activity Name**	**T_o**	**T_m**	**T_p**	**T_e (PERT)**
1.1.1	Requirements Traceability Matrix	5.0	10.0	12.0	9.5
1.1.2	Project Scope Statement	1.0	2.0	3.0	2.0
1.1.3	Work Breakdown Structure	0.25	0.5	1.0	0.5
1.1.4	WBS Dictionary	0.75	1.0	1.25	1.0
1.2.1	Activity List	1.0	1.5	2.0	1.5
1.2.2	Project Schedule Network Diagram	1.0	1.5	2.0	1.5
1.2.3	Activity Resource Requirements	0.5	1.0	1.5	1.0
1.2.4	Activity Duration Estimates	0.5	1.0	1.5	1.0
1.2.5	Project Schedule	1.5	2.0	2.5	2.0
1.3.1	Activity Cost Estimates	0.5	1.0	1.5	1.0
1.3.2	Cost Baseline	0.5	1.0	1.5	1.0
1.3.3	Project Funding Requirements	0.5	1.0	1.5	1.0
1.3.4	Cost Forecasts	0.5	1.0	1.5	1.0
1.4.1	Quality Checklists	0.5	1.0	1.5	1.0
1.4.2	Quality Metrics	0.5	1.0	1.5	1.0
1.4.3	Process Improvement Plan	0.5	1.0	1.5	1.0
1.5.1	Risk Register	0.5	1.0	1.5	1.0

Note: All activity durations were measured in days, with 8 hours of work allotted per day.

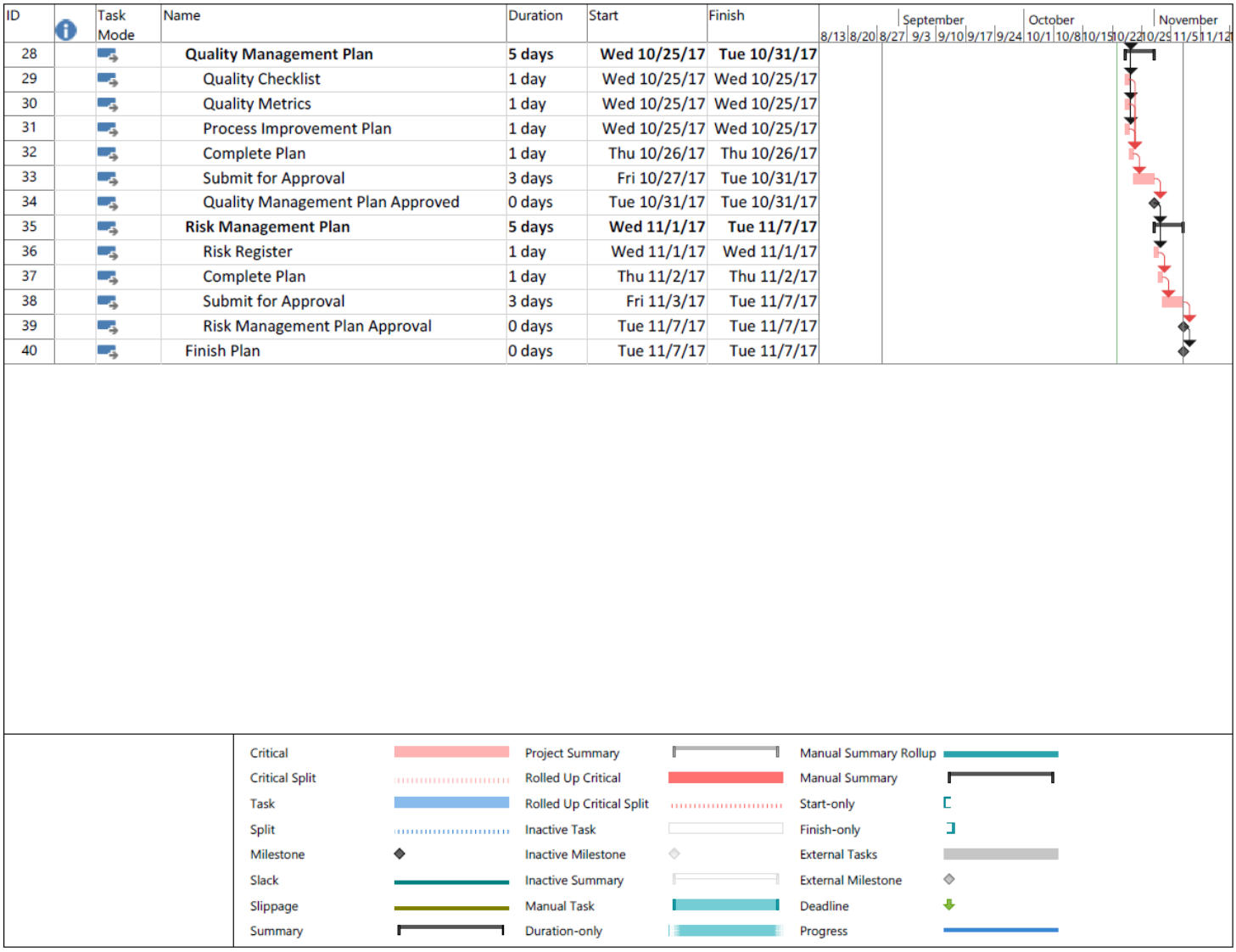
Develop schedule.

Develop Schedule is the process of analyzing activity sequences, durations, resource requirements, and schedule constraints to create the project schedule model. The key benefit of this process is that by entering schedule activities, durations, resources, resource availabilities, and logical relationships into the scheduling tool, it generates a schedule model with planned dates for completing project activities (PMBOK Guide, 5th Edition, p. 172). The inputs for this process were the Activity List, Project Network Schedule Diagram, Activity Resource Requirements, Activity Duration Estimates and Project Scope Statement. The Critical Path Method, Critical Chain Method and Schedule Compressions were the techniques used to generate the Project Schedule (see Figures 10 and 11 below).



ID	Task Mode	Name	Duration	Start	Finish
1		**Project Management Plan**	**52 days?**	**Mon 8/28/17**	**Tue 11/7/17**
2		Start Plan	0 days	Mon 8/28/17	Mon 8/28/17
3		**Scope Management Plan**	**20 days**	**Mon 8/28/17**	**Fri 9/22/17**
4		Requirements Traceability Matrix	9.5 days	Mon 8/28/17	Fri 9/8/17
5		Project Scope Statement	2 days	Fri 9/8/17	Tue 9/12/17
6		WBS	0.5 days	Tue 9/12/17	Tue 9/12/17
7		WBS Dictionary	1 day	Tue 9/12/17	Wed 9/13/17
8		Complete Plan	4.5 days	Wed 9/13/17	Tue 9/19/17
9		Submit for Approval	3 days	Wed 9/20/17	Fri 9/22/17
10		Scope Management Plan Approved	0 days	Fri 9/22/17	Fri 9/22/17
11		**Schedule Management Plan**	**15 days**	**Mon 9/25/17**	**Fri 10/13/17**
12		Activity List	1.5 days	Mon 9/25/17	Tue 9/26/17
13		Project Schedule Network Diagram	1.5 days	Tue 9/26/17	Wed 9/27/17
14		Activity Resource Requirements	1 day	Tue 9/26/17	Wed 9/27/17
15		Activity Duration Estimates	1 day	Wed 9/27/17	Thu 9/28/17
16		Project Schedule	2 days	Thu 9/28/17	Mon 10/2/17
17		Complete Plan	3 days	Fri 10/6/17	Tue 10/10/17
18		Submit for Approval	3 days	Wed 10/11/17	Fri 10/13/17
19		Schedule Management Plan Approval	0 days	Fri 10/13/17	Fri 10/13/17
20		**Cost Management Plan**	**7 days?**	**Mon 10/16/17**	**Tue 10/24/17**
21		Activity Cost Estimate	1 day	Mon 10/16/17	Mon 10/16/17
22		Cost Baseline	1 day	Tue 10/17/17	Tue 10/17/17
23		Project Funding Requirements	1 day	Tue 10/17/17	Tue 10/17/17
24		Cost Forecasts	1 day	Wed 10/18/17	Wed 10/18/17
25		Complete Plan	3 days	Thu 10/19/17	Mon 10/23/17
26		Submit for Approval	1 day?	Tue 10/24/17	Tue 10/24/17
27		Cost Management Plan Approved	0 days	Tue 10/24/17	Tue 10/24/17

Figure 9. Project Schedule, Page 1 (Source: Compiled by Author)



ID	Task Mode	Name	Duration	Start	Finish
28		**Quality Management Plan**	**5 days**	**Wed 10/25/17**	**Tue 10/31/17**
29		Quality Checklist	1 day	Wed 10/25/17	Wed 10/25/17
30		Quality Metrics	1 day	Wed 10/25/17	Wed 10/25/17
31		Process Improvement Plan	1 day	Wed 10/25/17	Wed 10/25/17
32		Complete Plan	1 day	Thu 10/26/17	Thu 10/26/17
33		Submit for Approval	3 days	Fri 10/27/17	Tue 10/31/17
34		Quality Management Plan Approved	0 days	Tue 10/31/17	Tue 10/31/17
35		**Risk Management Plan**	**5 days**	**Wed 11/1/17**	**Tue 11/7/17**
36		Risk Register	1 day	Wed 11/1/17	Wed 11/1/17
37		Complete Plan	1 day	Thu 11/2/17	Thu 11/2/17
38		Submit for Approval	3 days	Fri 11/3/17	Tue 11/7/17
39		Risk Management Plan Approval	0 days	Tue 11/7/17	Tue 11/7/17
40		Finish Plan	0 days	Tue 11/7/17	Tue 11/7/17

Figure 10. Project Schedule, Page 2 (Source: Compiled by Author)

Roles and responsibilities for schedule development are as follows:

- The Project Manager will be responsible for facilitating work package definition, sequencing, and estimating duration and resources. The Project Manager will also facilitate the creation of the project schedule using the standard scheduling tool and validate the schedule with stakeholders and the Project Sponsor. The Project Manager will obtain schedule approval from the Project Sponsor.
- The Project Sponsor will participate in reviews of the proposed schedule and approve the final schedule before it is baselined.
- The Project Stakeholders will participate in reviews of the proposed schedule and assist in its validation.

Control schedule.

Control Schedule is the process of monitoring the status of project activities to update project progress and manage changes to the schedule baseline to achieve the plan. The key benefit of this process is that it provides the means to recognize deviation from the plan and take corrective and preventive actions and thus minimize risk (PMBOK Guide, 5th Edition, p. 185). As the project progresses, the input for this process will be the Project Schedule and through Performance Review and Schedule Compression, the following outputs will be generated:

- Work Performance Information;
- Change Requests (as needed); and
- Project Documents Updates.

The project schedule will be reviewed and updated on at least a bi-weekly basis with actual start, actual finish, and completion percentages that are provided by task owners. The Project Manager is responsible for holding bi-weekly schedule updates/reviews; determining impacts of schedule variances; submitting schedule change requests; and reporting schedule status. The Project Sponsor will maintain awareness of the project schedule status and review/approve any schedule change requests submitted by the Project Manager.

Schedule changes and thresholds.

If any member of the project team determines that a change to the schedule is necessary, the Senior Project Director and team will meet to review and evaluate the change. The Senior Project Director and project team must determine which tasks will be impacted, variance as a result of the potential change, and any alternatives or variance resolution activities they may employ to see how they would affect the scope, schedule, and resources. If after this evaluation is complete the Senior Project Director determines that any change will exceed the established boundary conditions, then a schedule change request must be submitted.

Submittal of a Schedule Change Request to the Project Sponsor for approval is required if either of the two following conditions is true:

- The proposed change is estimated to reduce the duration of an individual work package by 10% or more, or increase the duration of an individual work package by 10% or more.
- The change is estimated to reduce the duration of the overall baseline schedule by 10% or more, or increase the duration of the overall baseline schedule by 10% or more.

Any change requests that do not meet these thresholds may be submitted to the Senior Project Director for approval.

Once the change request has been reviewed and approved, the Project Manager is responsible for adjusting the schedule and communicating all changes and impacts to the Project Sponsor, and stakeholders.

4.3 Strategy to Develop the Cost Management Plan

Introduction.

Project Cost Management, as defined by the PMBOK Guide, 5th Edition, includes the processes involved in planning, estimating, budgeting, financing and funding, managing and controlling costs so that the project can be completed within the approved budget. For this project, the processes executed were Estimate Cost, Determine Budget and Control Costs. This resulted in the development of the Cost Management Plan.

The purpose of the Cost Management Plan is to define the methodology by which costs associated with the project will be managed throughout the project life cycle. To ensure the successful completion of the project within the allotted budget, this plan sets the format and standards by which the project costs are measured, reported and controlled. To complete this project successfully, all key project members and stakeholders must adhere to and work within this Cost Management Plan and the overall project plan it supports.

The Cost Management Plan will:

- Outline the approximate costs required to complete project activities;
- Determine an authorized cost baseline;
- Outline the purpose and amount of funds needed at any specific time of the project; and
- Outline how costs will be monitored and how updates will take place.

Estimate cost.

Estimate Costs is the process of developing an approximation of the monetary resources needed to complete project activities. The key benefit of this process is that it determines the amount of cost required to complete project work (PMBOK Guide, 5th Edition, pg. 200). The inputs for this process were the Scope Baseline and Project Schedule, which through Expert Judgment and Bottom-up Estimating techniques resulted in the Activity Cost Estimates (See Chart 14 below).

The bottom-up estimating technique was used for preparing the detailed cost estimates for each component because of the size and straightforwardness of the project activities. The cost estimates were prepared using the best information available at the time of estimation. During the course of the project as more information becomes available, the cost estimates will be adjusted.

Chart 14. Activity Cost Estimates (Source: Compiled by the Author)

Activity Cost Estimates										
Project: Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)										
WBS No.	**Resource**	**Direct Costs**	**Indirect Costs**	**Reserve**	**Estimate**	**Method**	**Assumptions/ Constraints**	**Additional Information**	**Range**	**Confidence Level**
1.1.1	Project Manager for 9.5 days	76 hours @ $3,000 = $228,000	$0	$22,800	$250,800	Bottom-up Estimating	• All requirements will be gathered in time to complete the requirements traceability matrix. • At least one day is needed to document all requirements	N/A	$225,000-$253,800	7
1.1.2	Project Manager for 2.0 days	16 hrs @ $3,000 = $48,000	$0	$1,440	$49,440	Bottom-up Estimating	• Proper capture of the scope of the project is dependent on the completeness of the requirements gathering process	N/A	$45,000-$52,440	7
1.1.3	Project Manager for 0.5 days	4 hrs @ $3,000 = $12,000	$0	$1,200	$13,200	Bottom-up Estimating	• All project deliverables and work packages were identified	N/A	$9,000-$16,200	8
1.1.4	Project Manager for 1 day	8 hrs @ $3,000 = $24,000	$0	$2,400	$26,400	Bottom-up Estimating	• All project deliverables and work packages were identified.	N/A	$21,000-$29,400	8
1.2.1	Project Manager for 1.5 days	12 hrs @ $3,000 = $36,000	$0	$3,600	$39,600	Bottom-up Estimating	• All activities are identified	N/A	$33,000-$42,600	7
1.2.2	Project Manager for 1.5 days	12 hrs @ $3,000 = $36,000	$0	$3,600	$39,600	Bottom-up Estimating	• All activity dependencies have been identified	N/A	$33,000-$42,600	7
1.2.3	Project	8 hrs @	$0	$2,400	$26,400	Bottom-up	• All resources have been	N/A	$21,000-	8

Activity Cost Estimates										
Project: Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)										
WBS No.	**Resource**	**Direct Costs**	**Indirect Costs**	**Reserve**	**Estimate**	**Method**	**Assumptions/ Constraints**	**Additional Information**	**Range**	**Confidence Level**
	Manager for 1 day	$3,000 = $24,000				Estimating	identified for the different activities		$29,400	
1.2.4	Project Manager for 1 day	8 hrs @ $3,000 = $24,000	$0	$2,400	$26,400	Bottom-up Estimating	• The duration for all activities have been determined	N/A	$21,000-$29,400	7
1.2.5	Project Manager for 2 days	16 hrs @ $3,000 = $48,000	$0	$1,440	$49,440	Bottom-up Estimating		N/A	$45,000-$52,440	8
1.3.1	Project Manager for 1 day	8 hrs @ $3,000 = $24,000	$0	$2,400	$26,400	Bottom-up Estimating	• Activities should be estimated based on information gathered at that point. • Estimates will be updated as more information is received.	N/A	$21,000-$29,400	9
1.3.2	Project Manager for 1 day	8 hrs @ $3,000 = $24,000	$0	$2,400	$26,400	Bottom-up Estimating	• The accuracy of the cost baseline is dependent on the estimates determined from the estimate costs process	N/A	$21,000-$29,400	9
1.3.3	Project Manager for 1 day	8 hrs @ $3,000 = $24,000	$0	$2,400	$26,400	Bottom-up Estimating	• Funding requirements will be based on the information gathered at that point in time • Updates will be done, if necessary, as the project progresses	N/A	$21,000-$29,400	9

Activity Cost Estimates										
Project: Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)										
WBS No.	**Resource**	**Direct Costs**	**Indirect Costs**	**Reserve**	**Estimate**	**Method**	**Assumptions/ Constraints**	**Additional Information**	**Range**	**Confidence Level**
1.3.4	Project Manager for 1 day	8 hrs @ $3,000 = $24,000	$0	$2,400	$26,400	Bottom-up Estimating	• Forecasting will be done as the project progresses	N/A	$21,000-$29,400	9
1.4.1	Project Manager for 1 day	8 hrs @ $3,000 = $24,000	$0	$2,400	$26,400	Bottom-up Estimating		N/A	$21,000-$29,400	9
1.4.2	Project Manager for 1 day	8 hrs @ $3,000 = $24,000	$0	$2,400	$26,400	Bottom-up Estimating		N/A	$21,000-$29,400	9
1.4.3	Project Manager for 1 day	8 hrs @ $3,000 = $24,000	$0	$2,400	$26,400	Bottom-up Estimating		N/A	$21,000-$29,400	9
1.5.1	Project Manager for 1 day	8 hrs @ $3,000 = $24,000	$0	$2,400	$26,400	Bottom-up Estimating		N/A	$21,000-$29,400	9

Determine budget.

Determine Budget is the process of aggregating the estimated costs of individual activities or work packages to establish an authorized cost baseline. The key benefit of this process is that it determines the cost baseline against which project performance can be monitored and controlled (PMBOK Guide, 5th Edition, pg. 208). The inputs for this process were the Scope Baseline, Activity Cost Estimate and Project Schedule. These were used to generate the following outputs through Cost Aggregation and Reserve Analysis: Cost Baseline and Project Funding Requirement. (See Charts 15 and 16 below respectively).

Chart 15. Cost Baseline (Source: Compiled by the Author)

Cost Baseline		
Project: Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)		
Deliverables	**Budgeted Total**	**Comments**
Scope Management Plan	$339,840.00	Includes all work hours to develop the Requirements Traceability Matrix, Project Scope Statement, Work Breakdown Structure and WBS Dictionary.
Schedule Management Plan	$181,440.00	Includes all work hours to develop the Activity List, Project Schedule Network Diagram, Activity Resource Requirements, Activity Duration Estimates and Project Schedule.
Cost Management Plan	$105,600.00	Includes all work hours to develop the Activity Cost Estimates, Cost Baseline, Project Funding Requirements and Cost Forecasts.
Quality Management Plan	$79,200.00	Includes all work hours to develop the Quality Checklists, Quality Metrics and Process Improvement Plan.
Risk Management Plan	$26,400.00	Includes all work hours to develop the Risk Register.

Chart 16. Project Funding Requirements Table (Source: Compiled by the Author)

Project Funding Requirements					
Project: Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)					
Deliverable	**Funding Type**	**August**	**September**	**October**	**November**
Scope Management Plan	Manpower		$339,840.00		
Schedule Management Plan	Manpower			$181,440.00	
Cost Management Plan	Manpower			$105,600.00	
Quality Management Plan	Manpower			$79,200.00	
Risk Management Plan	Manpower				$26,400.00

Control costs.

Control Costs is the process of monitoring the status of the project to update the project costs and managing changes to the cost baseline. The benefit of this process is that it provides the means to recognize variance from the plan in order to take corrective action and minimize risk (PMBOK Guide, 5th Edition, pg. 215). As the project progresses, the Project Manager will use the Project Funding Requirements to develop Work Performance Information (see Figures 12 and 13 below) and Cost Forecasts. This will be done through Earned Value Management (EVM) and Forecasting.

Cost management roles and responsibilities.

The Project Manager will be responsible for managing and reporting on the project costs throughout the duration of the project. During the monthly project status meeting, the Project Manager will present and review the project's cost performance for the preceding month. Performance will be measured using earned value, as defined below. The Project Manager is responsible for accounting for cost deviations and presenting the Project Sponsor, Project Steering Committee and Change Control Board with options for resolving project budget shortages or overages. The Project Sponsor has the authority to make changes to the project to bring it back within budget.

Cost performance measurement.

The approach for cost performance measurement is to use Earned Value Management (EVM) for measuring and controlling the project costs. EVM integrates project scope, cost, and schedule measures to help the project management team assess and measure project performance and progress. The Project Manager will review the following earned value measurements: Schedule Variance, Cost Variance, Schedule Performance Index, Cost Performance Index, To Complete Cost Performance Index and Estimated Actual Cost at Completion.

Earned value management terms

- Cost Performance Index (CPI) measures the value of the work completed compared to the actual cost of the work completed. CPI is calculated as EV/AC.
    - If CPI is equal to 1 the project is considered to be on budget.
    - If CPI is greater than 1, the project is considered to be under budget.
    - If CPI is less than 1, the project is considered to be over budget.

- Cost Variance (CV) is a measurement of the budget performance for a project. CV is calculated by subtracting Actual Costs (AC) from EV (actual value earned in the project). AC represents actual costs incurred to date. Subtracting AC from EV provides a measurement to indicate the status of the project as it relates to budget and cost.
    - If CV is zero, the project is considered to be on budget.
    - If CV is greater than zero, the project is earning more value than planned and is considered to be under budget.
    - If CV is less than zero, the project is earning less value and is considered to be over budget.

- Estimated Actual Cost at Completion (EAC) provides a forecast of actual cost to complete the project based on cost performance metrics. There are three ways to calculate EAC:
    - Actual Cost plus Total Project Budget (TPB) minus Earned Value (AC + TPB – EV).
    - Total Project Budget divided by Cost Performance Index (TPB/CPI).
    - Actual Cost plus the result of dividing the difference between the Total Project Budget and Earned Value by the product of Cost Performance Index and Schedule Performance Index (AC + ((TPB – EV)/(CPI*SPI))).

- Schedule Performance Index (SPI) is a measurement of the progress achieved against that which was planned. SPI is calculated as EV/PV. If EV is equal to PV the value of the SPI is 1.
    - If EV is less than the PV then the value is less than 1, which means the project is behind schedule.
    - If EV is greater than the PV the value of the SPI is greater than one, which means the project is ahead of schedule.
    - A well performing project should have its SPI as close to 1 as possible.

- Schedule Variance (SV) is a measurement of the schedule performance for a project, and is calculated by subtracting the Planned Value (PV) from Earned Value (EV). EV is the actual value earned in the project, and PV is the value the project schedule tool indicates should have been earned at the measurement point. Subtracting PV from EV provides a measurement to indicate the status of the baseline schedule according to the project plan.
    - If SV is zero, the project is considered to be on schedule.
    - If SV is greater than zero, the project is earning more value than planned and is considered to be ahead of schedule.
    - If SV is less than zero, the project is earning less value than planned and is considered to be behind schedule.

- To Complete Performance Index (TCPI) measures the efficiency at which resources on the project should be utilized for the remainder of the project. TCPI is calculated as (Total Project Budget – EV)/(Total Project Budget – AC).
    - If TCPI is equal to 1, the utilization of resources on the project can continue at the current level.
    - If TCPI is greater than 1, the utilization of resources on the project should be more stringent than the current level.
    - If TCPI is less than 1, the utilization of resources on the project can be more lenient than at the current level.

WORK PERFORMANCE INFORMATION

Project Name:	Prepared By:	Date:

Project Manager:	Project Sponsor:

Note: This document should be completed by the Project Manager and/or any project team member. The level of detail of Tasks/Activity/Work Package varies accordingly.

Overall Project Status: _____

TASKS FOR THIS PERIOD

Task/Activity/Work Package	Completion Date		Relationship to Overall Project Success	Effort		Costs
	Expected	Actual		Actual	Estimate to Complete	

Figure 11. Sample Work Performance Information, Page 1 (Source: International Institute for Learning, (2013) Retrieved from: https://www.iil.com/ondemand/pmfoundation-sample/story_content/external_files/WorkPerformanceInformation.docx)

TASKS PLANNED FOR NEXT PERIOD

Task	Planned Completion Date	Relationship to Overall Project Success	Expected Effort	Cost

Identify problems and issues (quality, cost, schedule, risk, change):

_____

_____

_____

_____

Figure 12. Sample Work Performance Information, Page 2 (Source: International Institute for Learning, (2013) Retrieved from: https://www.iil.com/ondemand/pmfoundation-sample/story_content/external_files/WorkPerformanceInformation.docx)

4.4 Strategy for Developing the Quality Management Plan

Introduction.

Project Quality Management, as defined by the PMBOK Guide, 5th Edition, includes the processes and activities of the performing organization that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken. Project Quality Management uses policies and procedures to implement, within the project's context, the organization's quality management system and, as appropriate, it supports continuous process improvement activities as undertaken on behalf of the performing organization. For this project, the processes executed were Plan Quality Management, Perform Quality Assurance and Control Quality. This resulted in the development of the Quality Management Plan.

The Quality Management Plan for this project will establish the activities, processes and procedures for ensuring a quality product upon the conclusion of the project. The purpose of this plan is to:

- Ensure quality is planned;
- Define how quality will be managed;
- Define quality assurance activities;
- Define quality control activities; and
- Define acceptable quality standards.

Plan Quality Management.

Plan Quality Management is the process of identifying quality requirements and/or standards for the project and its deliverables and documenting how the project will demonstrate compliance with relevant quality requirements and/or standards. The key benefit of this process is that it provides guidance and direction on how quality will be managed and validated throughout the project (PMBOK Guide, 5th Edition, p. 231). The inputs for this process were as follows:

- Scope Baseline;
- Schedule Baseline;
- Cost Baseline;
- Stakeholder Register; and
- Requirements Documentation.

Benchmarking and Brainstorming techniques were used along with the inputs to develop the Process Improvement Plan, Quality Metrics and Quality Checklists.

Stakeholder matrix.

The main stakeholders identified for this project are shown in Chart 17 below:

Chart 17. Stakeholder Matrix (Source: Compiled by the Author)

Stakeholder	Impact	Interest	Power	Influence
DLF Committee Members	High	High	High	High
Social Development Commission (SDC)	Low	Medium	High	High
Universal Service Fund (USF)	Low	Low	Medium	Medium
Molynes Gardens Community	High	Medium	Low	Low
Project Manager	Low	Medium	Low	High

Prioritizing customers.

The following L Shape Matrix (Chart 18) shows the results of the comparison of each stakeholder:

Chart 18. L-Shape Matrix – Customer Prioritization (Source: Compiled by the Author)

Customer Prioritization	DLF Committee Members	SDC	USF	Molynes Gardens Community	Project Manager	Row Total	Relative Decimal Value
DLF Committee Members		1	5	10	10	26	0.35
SDC	1		5	10	10	26	0.35
USF	0.2	0.2		5	10	15.4	0.21
Molynes Gardens Community	0.1	0.1	0.2		5	5.4	0.07
Project Manager	0.1	0.1	0.1	0.2		0.5	0.01
				Grand Total		**73.3**	

Key:

10 = Much more important
5 = More Important
1 = Equally Important
0.2 = Less Important
0.1 = Much less important

For the project, Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation, the stakeholders with the greatest priority are the DLF Committee Members and SDC. The least ranking stakeholder was the Project Manager.

Identified requirements.

The requirements for this project were identified during the Project Scope Management phase and are listed below as follows:

- Develop a Scope Management Plan outlining how the project will be defined, validated and controlled.
- Develop a Schedule Management Plan documenting the scheduling methodology with the corresponding scheduling tool and techniques.
- Develop a Cost Management Plan stating how the project costs will be planned, structured and controlled.
- Develop a Quality Management Plan that describes how the quality requirements set for the project will be met.
- Develop a Risk Management Plan to outline how risk management activities will be structured and performed.

Requirements prioritization.

To prioritize all the requirements identified, the Full Analytical Criteria Method was used. This method is a three-step process that begins with the L-shaped matrix developed to prioritize customer requirements, applies the L-shaped matrix to individual customer requirements, and then combines the results into a single matrix of project priorities (Rose, K.H. Project Quality Management, Why, What and How, p. 50). The key used in this method is as follows:

Key:

10 = Much more important
5 = More Important
1 = Equally Important
0.2 = Less Important
0.1 = Much less important

- Stakeholder: DLF Committee Members

Chart 19. L-Shape Matrix – Stakeholder Prioritization 1 (Source: Compiled by the Author)

Requirements Prioritization DLF Committee Members	1. Scope Management Plan	2. Schedule Management Plan	3. Cost Management Plan	4. Quality Management Plan	5. Risk Management Plan	Row Total	Relative Decimal Value
1. Scope Management Plan		10	10	10	10	40	0.61
2. Schedule Management Plan	0.1		1	5	5	11.1	0.17
3. Cost Management Plan	0.1	1		5	5	11.1	0.17
4. Quality Management Plan	0.1	0.2	0.2		1	1.5	0.02
5. Risk Management Plan	0.1	0.2	0.2	1		1.5	0.02
					Grand Total	**65.2**	

The results for this stakeholder prioritization show that the priority for the DLF Committee is the completion of the Scope Management Plan. This is followed by the Schedule and Cost Management Plan, with the least priority given to the Quality Management and Risk Management Plans.

- Stakeholder: Social Development Commission (SDC)

Chart 20. L-Shape Matrix – Stakeholder Prioritization 2 (Source: Compiled by the Author)

Requirements Prioritization SDC	1. Scope Management Plan	2. Schedule Management Plan	3. Cost Management Plan	4. Quality Management Plan	5. Risk Management Plan	Row Total	Relative Decimal Value
1. Scope Management Plan		10	10	10	10	40	0.58
2. Schedule Management Plan	0.1		0.2	5	5	10.3	0.15
3. Cost Management Plan	0.1	5		5	5	15.1	0.22
4. Quality Management Plan	0.1	0.2	0.2		1	1.5	0.02
5. Risk Management Plan	0.1	0.2	0.2	1		1.5	0.02
					Grand Total	**68.4**	

The results for this stakeholder prioritization show that the Scope Management Plan is the most important requirement for the Social Development Commission, followed by the Cost Management Plan. The least important is the completion of both the Quality Management and Risk Management Plans.

- Stakeholder: Universal Service Fund (USF)

Chart 21. L-Shape Matrix – Stakeholder Prioritization 3 (Source: Compiled by the Author)

Requirements Prioritization USF	1. Scope Management Plan	2. Schedule Management Plan	3. Cost Management Plan	4. Quality Management Plan	5. Risk Management Plan	Row Total	Relative Decimal Value
1. Scope Management Plan		10	1	10	10	31	0.41
2. Schedule Management Plan	0.1		0.1	5	5	10.2	0.14
3. Cost Management Plan	1	10		10	10	31	0.41
4. Quality Management Plan	0.1	0.2	0.1		1	1.4	0.02
5. Risk Management Plan	0.1	0.2	0.1	1		1.4	0.02
					Grand Total	**75.0**	

The results for this stakeholder prioritization show that the priority for the Universal Service Fund is the Scope Management and Cost Management Plans. The least priority is given to both the Quality Management and Risk Management Plans.

- Stakeholder: Molynes Gardens Community

Chart 22. L-Shape Matrix – Stakeholder Prioritization 4 (Source: Compiled by the Author)

Requirements Prioritization Molynes Gardens Community	1. Scope Management Plan	2. Schedule Management Plan	3. Cost Management Plan	4. Quality Management Plan	5. Risk Management Plan	Row Total	Relative Decimal Value
1. Scope Management Plan		10	10	10	10	40	0.76
2. Schedule Management Plan	0.1		1	1	1	3.1	0.06
3. Cost Management Plan	0.1	1		1	1	3.1	0.06
4. Quality Management Plan	0.1	1	1		1	3.1	0.06
5. Risk Management Plan	0.1	1	1	1		3.1	0.06
					Grand Total	**52.4**	

This stakeholder prioritization shows that the main concern for the Molynes Gardens Community is the completion of the Scope Management Plans. All the other four (4) requirements were given the same overall rating.

- Stakeholder: Project Manager

Chart 23. L-Shape Matrix – Stakeholder Prioritization 5 (Source: Compiled by the Author)

Requirements Prioritization Project Manager	1. Scope Management Plan	2. Schedule Management Plan	3. Cost Management Plan	4. Quality Management Plan	5. Risk Management Plan	Row Total	Relative Decimal Value
1. Scope Management Plan		10	10	10	10	40	0.58
2. Schedule Management Plan	0.1		1	5	5	11.1	0.16
3. Cost Management Plan	0.1	1		5	5	11.1	0.16
4. Quality Management Plan	0.1	0.2	0.2		5	5.5	0.08
5. Risk Management Plan	0.1	0.2	0.2	0.2		0.7	0.01
					Grand Total	**68.4**	

The priority for the Project Manager is the completion of the Scope Management Plan. This is followed by both the Schedule Management and Cost Management Plans. The least priority was given to the Risk Management Plan.

- Customer –Weighted Requirements Prioritization

Chart 24. L-Shape Matrix – Customer-Weighted Prioritization (Source: Compiled by the Author)

Customer-Weighted Requirements Prioritization	DLF Committee Members	SDC	USF	Molynes Gardens Community	Project Manager	Row Total	Relative Decimal Value
1. Scope Management Plan	0.21	0.20	0.09	0.05	0.01	0.56	0.58
2. Schedule Management Plan	0.06	0.05	0.03	0.00	0.00	0.14	0.14
3. Cost Management Plan	0.06	0.08	0.09	0.00	0.00	0.23	0.24
4. Quality Management Plan	0.01	0.01	0.00	0.00	0.00	0.02	0.02
5. Risk Management Plan	0.01	0.01	0.00	0.00	0.00	0.02	0.02
					Grand Total	**0.97**	

The customer-weighted prioritization shows the ranking of the requirements as follows:
Priority 1 – Completion of the Scope Management Plan
Priority 2 – Completion of the Cost Management Plan
Priority 3 – Completion of the Schedule Management Plan
Priority 4 – Completion of the Quality Management and Risk Management Plans

Quality metrics.

Chart 25 below describes the specific project attribute and how the control process will measure each.

Chart 25. Quality Metrics (Source: Compiled by the Author)

Quality Metrics				
Project: Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)				
WBS Ref	**Requirement**	**Specification**	**Assurance Activity**	**Metric**
1.1	Develop a Scope Management Plan outlining how the project will be defined, validated and controlled	Scope Management Plan must comply with Industry Standards for Project Management	Review document to ensure compliance with PMI standards	Scope Management Plan should include the following details: • Requirements Traceability Matrix • Project Scope Statement • Work Breakdown Structure • WBS Dictionary
1.2	Develop a Schedule Management Plan documenting the scheduling methodology with the corresponding scheduling tool and techniques	Schedule Management Plan must comply with Industry Standards for Project Management	Review document to ensure compliance with PMI standards	Schedule Management Plan should include the following details: • Activity List • Project Schedule Network Diagram • Activity Resource Requirements • Activity Duration Estimates • Schedule Baseline

Quality Metrics				
Project: Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)				
WBS Ref	**Requirement**	**Specification**	**Assurance Activity**	**Metric**
1.3	Develop a Cost Management Plan stating how the project costs will be planned, structured and controlled	Cost Management Plan must comply with Industry Standards for Project Management	Review document to ensure compliance with PMI standards	Cost Management Plan should include the following details: • Activity Cost Estimates • Cost Baseline • Project Funding Requirements • Cost Forecasts
1.4	Develop a Quality Management Plan that describes how the quality requirements set for the project will be met	Quality Management Plan must comply with Industry Standards for Project Management	Review document to ensure compliance with PMI standards	Quality Management Plan should include the following details: • Quality Checklists • Quality Metrics • Process Improvement Plan
1.5	Develop a Risk Management Plan to outline how risk management activities will be structured and performed	Risk Management Plan must comply with Industry Standards for Project Management	Review document to ensure compliance with PMI standards	Risk Management Plan should include the following details: • Risk Register

Chart 26. Quality Checklist (Source: Compiled by the Author)

Quality Checklist					
Project: Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)					
Quality Item	**Verification**				
	Yes	**No**	**N/A**	**Date**	**Comments**
Project Deliverables					
Does the Scope Management Plan include the Requirements Traceability Matrix?					
Does the Scope Management Plan include the Project Scope Statement?					
Does the Scope Management Plan include the Work Breakdown Structure?					
Does the Scope Management Plan include the WBS Dictionary?					
Does the Schedule Management Plan include the Activity List?					
Does the Schedule Management Plan include the Project Schedule Network Diagram?					
Does the Schedule Management Plan include the Activity Resource Requirements?					
Does the Management Plan include the Activity Duration Estimates?					
Does the Management Plan include the Schedule Baseline?					
Does the Cost Management Plan include the Activity Cost Estimates?					
Does the Cost Management Plan include the Cost Baseline?					
Does the Cost Management Plan include the Project Funding Requirements?					
Does the Cost Management Plan include the Cost Forecasts?					
Does the Quality Management Plan include the Quality Checklists?					

Quality Checklist					
Project: Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)					
Quality Item	**Verification**				
	Yes	**No**	**N/A**	**Date**	**Comments**
Does the Quality Management Plan include the Quality Metrics?					
Does the Quality Management Plan include the Process Improvement Plan?					
Does the Risk Management Plan include the Risk Register?					
Earned Value Management					
Is the CPI equal to 1, therefore the project is on budget?					
Is the CV equal to zero, therefore the project is on budget?					
Is the SPI almost equal to 1, therefore the project is progressing well?					
Is the SV zero, therefore the project is on schedule?					
Is the TCPI equal to 1, therefore the utilization of resources on the project can continue at the current level?					

Perform quality assurance.

Perform Quality Assurance is the process of auditing the quality requirements and the result from quality measurements to ensure that appropriate quality standards and operational definitions are used. The key benefit of this process is that it facilitates the improvement of quality processes (PMBOK Guide, 5th Edition, p. 242). The inputs used for this process was the Quality Metrics and Process Improvement Plan. Through Quality Audits and Process Analysis, the resulting outputs were as follows:

- Change Requests (as necessary);
- Project Management Plan updates; and
- Project Document updates.

Quality assurance, which is focused on the project processes, provides confidence that the quality requirements can be fulfilled and helps ensure that the project processes used to manage and deliver the project's product or service are effective and being applied. To ensure quality, an iterative quality process will be used throughout the project life cycle. This iterative process includes measuring process metrics, analyzing process data, and continuously improving the processes.

To identify, assess, respond to, monitor, and control project quality, all stakeholders will be involved.

The Project Manager will schedule regularly occurring meetings to review the findings of the quality assurance activities. In these reviews, an agenda item will include a review of project processes, any discrepancies and/or audit findings, and a discussion on process improvement initiatives. These reviews, findings, and assessments should result in some form of process and/or product improvement. All process improvement efforts must be documented, implemented, and communicated to all team members as changes are made.

Control quality.

Control Quality is the process of monitoring and recording results of executing the quality activities to assess performance and recommend necessary changes. The key benefit of this process includes: (1) identifying the causes of poor process or product quality and recommending and/or taking action to eliminate them; and (2) validating that project deliverables and work meet the requirements specified by key stakeholders necessary for final acceptance (PMBOK Guide, 5th Edition, p. 248). The process is iterative, and the inputs will be the Quality Metrics and Quality Checklists. The following outputs will be generated as necessary through inspection and Approved Change Request Review:

- Quality Control Measures;
- Validated Changes;
- Verified Deliverables;
- Work Performance Information;
- Change Requests;
- Project Management Plan updates; and
- Project Documents updates.

Quality control is focused on the products and deliverables of the project. It is the process of monitoring project deliverables to verify that the deliverables are of acceptable quality and are complete and correct, and includes the inspection, analysis, and actions required to ensure quality output. The project's Quality Control process involves the following steps:

- Verifying, validating, and monitoring of work products to ensure the requirements for quality and scope of work are being fulfilled;
- Inspecting deliverables and documentation and comparing these items to a standard of quality defined for the project; and
- Monitoring output of workflows progress, detecting problems and allowing for corrections prior to delivery of services.

The Project Manager will schedule regularly occurring project, management, and document reviews. In these reviews, an agenda item will include a review of products, any discrepancies and/or audit findings, and a discussion on product improvement initiatives.

4.5 Strategy for Developing the Risk Management Plan

Introduction.

Project Risk Management, as defined by the PMBOK Guide, 5th Edition, includes the processes of conducting risk management planning, identification, analysis, response planning, and controlling risk on a project. The objectives of project risk management are to increase the likelihood and impact of positive events and decrease the likelihood and impact of negative events in the project. For this project, the processes executed were Identify Risks, Perform Qualitative Risk Analysis, Plan Risk Responses and Control Risks. This resulted in the development of the Risk Register.

A risk is an event or condition that, if it occurs, could have a positive or negative effect on a project's objectives. The purpose of the Risk Management Plan for this project is to establish the framework in which the project team will identify risks and develop strategies to mitigate or avoid those risks.

Identify risks.

Identify Risks is the process of determining which risks may affect the project and documenting their characteristics. The key benefit of this process is the documentation of existing risks and the knowledge and ability it provides to the project team to anticipate events (PMBOK Guide, 5th Edition, p. 319). Risk identification involved the Project Manager and the DLF Committee members and an evaluation of the following documents were completed:

- Cost Management Plan;
- Schedule Management Plan;
- Quality Management Plan;
- Scope Baseline;
- Activity Cost Estimates;
- Activity Duration Estimates; and
- Project Documents.

To develop the Risk Register for the project, Brainstorming, Interviewing and Risk Breakdown Structure tools and techniques were used. As the project progresses, the output for this process will be updated as needed.

Risk breakdown structure (RBS).

Hillson (2002) defines the RBS as “A source-oriented grouping of project risks that organizes and defines the total risk exposure of the project. Each descending level represents an increasingly detailed definition of sources of risk to the project.” Therefore, the RBS is considered a hierarchical structure of potential risk sources and assists in understanding the risks faced by the project. Chart 27 below outlines the possible risks associated with this project.

Chart 27. Risk Breakdown Structure (Source: Compiled by the Author)

Level 0	Level 1	Level 2
0. Project Risks	1. Internal Risks	1.1 Time
		1.2 People
		1.3 Costs
		1.4 Management
		1.5 Deliverables
	2-External Risks	2.1 Cultural
		2.2 Political
		2.3 Legislation

Risk register.

Chart 28 below lists the identified risks, and for each risk it outlines the associated cause, consequence, trigger and owner.

Chart 28. Risk Register - Version 1 (Source: Compiled by the Author)

RBS Code	Cause	Risk	Consequence	Trigger	Owner
1.1.1	Insufficient human resource planning	Project Management Plan not completed within the time allotted.	Delays in scheduled activities	Too much work load for one person	PM
1.2.1	Underestimation of required human resources	Lack of required human resources	Delays in scheduled activities	Too much work load for one person	PM
1.3.1	Deliverable timelines were underestimated	Actual project costs exceed estimated costs	Delays in scheduled activities and increase in costs	Deliverables not submitted on time	PM
1.4.1	Not enough information supplied by the key stakeholders	Scope not properly defined	Project delays and cost overruns	Multiple change requests to defined scope	PM
1.4.2	Underestimation of work required to meet objectives	Activities not properly defined for each work package	Project delays and cost overruns	Deliverables incomplete	PM
2.1.1	Lack of buy-in from these stakeholders	Insufficient support from the surrounding communities	Project will not be properly supported by those who the end product is for	Lack of use of the Cyber Centre by the surrounding communities	Sponsor
2.2.1	Change in Government, which results in change in mandates of the SDC	Project halted by the SDC	Project Management Plan will not be completed	Lack of support of the SDC during the development of the Project Management Plan	Sponsor
2.3.1	Scope of the project is not supported by the agreement signed by the SDC and USF	Project Management Plan not approved by the SDC	Project will not move to implementation	Project Management Plan is denied	Sponsor

Perform qualitative risk analysis.

Perform Qualitative Risk Analysis is the process of prioritizing risks for further analysis or action by assessing and combining their probability of occurrence and impact. The key benefit of this process is that it enables project managers to reduce the level of uncertainty and to focus on high-priority risks. (PMBOK Guide, 5th Edition, p. 328). The input for this process was the Scope Baseline and Risk Register. The Risk Register was then updated using Risk Probability and Impact Assessment, and Probability and Impact Matrix tools and techniques.

Probability and impact scales.

The probability of a risk speaks to the likelihood of that specific risk occurring, while the impact relates to the potential effect of the risk on a project objective such as schedule, cost, quality or performance. Charts 29 and 30 below outline the different scales used to assess the probability and impact of each risk identified.

Chart 29. Probability Scale (Source: Compiled by the Author)

Probability Scale	Scale Definition
<10%	Very Low
10% to 30%	Low
30% to 50%	Moderate
50% to 70%	High
70% to 90%	Very High

Chart 30. Impact Scale (Source: Compiled by the Author)

Schedule	Cost	Scope	Impact Scale	Scale Definition
< 2 wks	< 1%	Minimal	0.5	Very Low
2 wks to 4 wks	1% to 2%	Minor areas	1	Low
4wks to 8 wks	3% to 5%	Major areas	2	Moderate
8 wks to 16 wks	6% to 10%	Unacceptable to sponsor	5	High
>16 wks	>10%	Project abandoned	10	Very High

Probability and impact matrix.

A probability and impact matrix is a grid for mapping the probability of each risk occurrence and its impact on project objectives if that risk occurs. Risks are prioritized according to their potential implications for having an effect on the project's objectives.

Chart 31. Probability & Impact Matrix (Source: Compiled by the Author)

		Impact				
		0.5	1	2	5	10
Probability	10%	0.05	0.10	0.20	0.50	1.00
	30%	0.15	0.30	0.60	1.50	3.00
	50%	0.25	0.50	1.00	2.50	5.00
	70%	0.35	0.70	1.40	3.50	7.00
	90%	0.45	0.90	1.80	4.50	9.00

Updated risk register.

Chart 32 below shows the updated Risk Register listing the identified risks and for each risk it outlines the associated cause, consequence, trigger and owner.

Chart 32. Risk Register - Version 2 (Source: Compiled by the Author)

RBS Code	Cause	Risk	Consequence	Prob	Imp	Pxl	Trigger	Owner
2.2.1	Change in Government, which results in change in mandates of the SDC	Project halted by the SDC	Project Management Plan will not be completed	50%	10	5.0	Lack of support of the SDC during the development of the Project Management Plan	Sponsor
2.3.1	Scope of the project is not supported by the agreement signed by the SDC and USF	Project Management Plan not approved by the SDC	Project will not move to implementation	50%	10	5.0	Project Management Plan is denied	Sponsor
1.1.1	Insufficient human resource planning	Project Management Plan not completed within the time allotted.	Delays in scheduled activities	50%	5	2.5	Too much work load for one person	PM
1.3.1	Deliverable timelines were underestimated	Actual project costs exceed estimated costs	Delays in scheduled activities and increase in costs	50%	5	2.5	Deliverables not submitted on time	PM

RBS Code	Cause	Risk	Consequence	Prob	Imp	Pxl	Trigger	Owner
1.4.1	Not enough information supplied by the key stakeholders	Scope not properly defined	Project delays and cost overruns	50%	5	2.5	Multiple change requests to defined scope	PM
1.2.1	Underestimation of required human resources	Lack of required human resources	Delays in scheduled activities	30%	5	1.5	Too much work load for one person	PM
1.4.2	Underestimation of work required to meet objectives	Activities not properly defined for each work package	Project delays and cost overruns	30%	5	1.5	Deliverables incomplete	PM
2.1.1	Lack of buy-in from these stakeholders	Insufficient support from the surrounding communities	Project will not be properly supported by those who the end product is for	10%	10	1.0	Lack of use of the Cyber Centre by the surrounding communities	Sponsor

Plan risk responses.

Plan Risk Responses is the process of developing options and actions to enhance opportunities and to reduce threats to project objectives. The key benefit of this process is that it addresses the risks by their priority, inserting resources and activities into the budget, schedule and project management plan as needed (PMBOK Guide, 5th Edition, p. 342). For this process, the Risk Register was updated to include risk strategies using the Contingent Response Strategies technique.

Chart 33. Risk Register - Final (Source: Compiled by the Author)

RBS Code	Cause	Risk	Consequence	Prob	Imp	PxI	Trigger	Owner	Strategy
2.2.1	Change in Government, which results in change in mandates of the SDC	Project halted by the SDC	Project Management Plan will not be completed	50%	10	5.0	Lack of support of the SDC during the development of the Project Management Plan	Sponsor	Once there is a change in Government and/or head of SDC during the project period, the Project Sponsor should meet with the agency to confirm that the project is not affected by any changes to their mandate.
2.3.1	Scope of the project is not supported by the agreement signed by the SDC and USF	Project Management Plan not approved by the SDC	Project will not move to implementation	50%	10	5.0	Project Management Plan is denied	Sponsor	The Project Sponsor should give periodical updates to the SDC on the progress of the project, so they are knowledgeable of what the Project Management Plan will include.
1.1.1	Insufficient human resource planning	Project Management Plan not completed	Delays in scheduled activities	50%	5	2.5	Too much work load for one person	PM	Project Manager will need to assess early if more resources are

RBS Code	Cause	Risk	Consequence	Prob	Imp	PxI	Trigger	Owner	Strategy
		within the time allotted.							needed to develop the various deliverables and communicate same to the Project Sponsor
1.3.1	Deliverable timelines were underestimated	Actual project costs exceed estimated costs	Delays in scheduled activities and increase in costs	50%	5	2.5	Deliverables not submitted on time	PM	Project Manager should verify the deliverable timelines and track the activities to ensure that deliverables are completed on time
1.4.1	Not enough information supplied by the key stakeholders	Scope not properly defined	Project delays and cost overruns	50%	5	2.5	Multiple change requests to defined scope	PM	Project Manager should engage all Stakeholders involved in the project to ensure that the scope is properly defined.
1.2.1	Underestimation of required human resources	Lack of required human resources	Delays in scheduled activities	30%	5	1.5	Too much work load for one person	PM	Project Manager will need to assess early if more resources are needed to develop the various deliverables and communicate same to the Project Sponsor
1.4.2	Underestimation of work required to meet objectives	Activities not properly defined for each work package	Project delays and cost overruns	30%	5	1.5	Deliverables incomplete	PM	Project Manager should verify activities with project management standards to ensure activity listing is complete
2.1.1	Lack of buy-in from these stakeholders	Insufficient support from the surrounding	Project will not be properly supported by those who the	10%	10	1.0	Lack of use of the Cyber Centre by the surrounding	Sponsor	Meetings should be held with the Citizen Associations for the

RBS Code	Cause	Risk	Consequence	Prob	Imp	PxI	Trigger	Owner	Strategy
		communities	end product is for				communities		surrounding communities to sensitize them on plans to implement the Cyber Centre

Control risks.

Control Risks is the process of implementing risk response plans, tracking identified risks, monitoring residual risks, identifying new risks, and evaluating risk process effectiveness throughout the project. The key benefit of this process is that it improves efficiency of the risk approach throughout the project life cycle to continuously optimize risk responses (PMBOK Guide, 5th Edition, p. 349). During this project, the Risk Register, Work Performance Data and Work Performance Reports will be used as inputs to the Control Risks process to produce the following outputs:

- Work Performance Information;
- Change Requests (as needed); and
- Project Documents updates.

This will be achieved using techniques such as Risk Reassessment, Risk Audits, Variance and Trend Analysis and Reserve Analysis.

The level of risk on the project will be tracked, monitored, controlled and reported throughout the project life cycle. The most likely and greatest impact risks will be added to the project schedule to ensure that proper monitoring occurs during the time of risk exposure. The Project Manager has the sole responsibility of providing periodical notifications to the Project Sponsor of important changes to risk status.

5 CONCLUSIONS

The Project Management Plan (PMP) is the document that describes how the project will be executed, monitored and controlled. It integrates and consolidates all the subsidiary plans and baselines from the planning process (PMBOK Guide, 5th Edition, pg. 76). For this project, strategies were outlined for the development of a PMP to assist the DLF with the implementation of a Community Cyber Centre. Throughout the process of developing the plan, the following conclusions were made:

- Due to the complexity and size of the project, strategies for the following subsidiary plans were completed:
    - Scope Management Plan
    - Schedule Management Plan
    - Cost Management Plan
    - Quality Management Plan
    - Risk Management Plan
- As a result of the scope defined, the following subsidiary plans were considered out of scope: The Human Resource Management Plan, Communications Management Plan, Procurement Management Plan and Stakeholder Management Plan.
- From the information gathered through discussions with the DLF, the Scope Management Plan should be developed, creating the following charts and figures:
    - Requirements Traceability Matrix
    - Project Scope Statement
    - Work Breakdown Structure
    - WBS Dictionary

  These diagrams will progressively break down the specific objectives into actionable work packages, which will later be reduced to activities in the Schedule Management Plan.

- The Schedule Management Plan should be the next phase of the development of the PMP. This process should clearly outline the estimated time to complete the project based on the activities identified. The Activity List, Project Schedule Network Diagram, Activity Resource Requirements, Activity Duration Estimates and Schedule Baseline should be included in this subsidiary plan. The details in this plan will provide the information needed to verify if the project is on target.
- Once the activities are identified and the durations for each activity estimated, a cost should then be associated. These estimates should be used to produce the overall budget. This process of Cost Management will give a better approximation of the costs associated with the project than just estimating based on the number of subsidiary plans to be added to the PMP. The Cost Management Plan will therefore give the DLF a good sense of the monies needed to complete the project.
- The Quality Management Plan should include the Quality Checklist and Quality Metrics charts. These should be developed to help the Project Manager and the different stakeholders to define what are the quality standards for the project and measure if each quality metric is achieved.
- The Risk Management Plan should be the final subsidiary plan to be completed. This section, through the development of the Risk Register, will highlight major risks which must be monitored to ensure that the project is successful. The plan should also indicate the strategies to help mitigate the effects of the identified risks.

6 RECOMMENDATIONS

To ensure the successful completion of the Project Management Plan for the Implementation of a Community Cyber Centre for DLF, the following recommendations should be considered:

- The PMP should be developed iteratively throughout the project life cycle. This will allow the plan to be improved as more details and accurate estimates become available.
- Using the structured approach described in the PMBOK Guide made the process of creating the strategy for the PMP easier and allowed more details to be included in the overall document.
- The Project Manager should employ Project Management standards throughout the duration of the project. This is to ensure that the project complies with the requisite standards.
- At least one more resource should be hired to assist the Project Manager in the proper development of the PMP. This will ease the workload on the PM and give him/her the leeway to focus on ensuring that the project is completed as scheduled and under budget.
- The Sponsor should ensure that the SDC is continually aware of the developments of the project so that issues can be identified and addressed in a timely manner and so minimize the potential impact on budget and schedule.

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8 APPENDICES

Appendix 1: FGP Charter

PROJECT CHARTER	
Date	**Project Name:**
June 26, 2017	Strategy to Develop the Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)
Knowledge Areas / Processes	**Applicacion Area (Sector / Activity)**
Knowledge areas: Integration, Scope, Time, Cost, Quality, Human Resources, Communications Risk, Procurement and Stakeholders **Process groups:** Initiatin, Planning, Execution, Monitoring and Controlling, and Closing	Business, Information Technology
Start date	**Finish date**
June 26, 2017	January 12, 2018

Project Objectives (general and specific)

General objective:
To formulate a plan to assist DLF with the proper development of a Project Management Plan for the implementation of a Community Cyber Center.

Specific objectives:

1. To outline a strategy to create a Scope Management Plan that captures how the project scope will be defined, validated and controlled.
2. To outline a strategy to create a Schedule Management Plan, which documents the scheduling methodology with the corresponding scheduling tools and techniques.
3. To outline a strategy to create a Cost Management Plan that states how the project costs will be planned, structured and controlled.
4. To outline a strategy to create a Quality Management Plan that describes how the quality requirements set for the project will be met.
5. To outline a strategy to create a Risk Management Plan that captures how risk management activities will be structured and performed

Project purpose or justification (merit and expected results)

DLF is seeking to properly implement a community cyber centre, which will be located at the Foundation's headquarters in Kingston, Jamaica. The development of the Project Management Plan is to ensure that the implementation is effectively executed. This will be achieved as the plan will provide details of how the implementation proces is to be executed, monitored and controlled, and closed.

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

The final product of the project will be the generation of the Project Management Plan. This plan will consist of the following subsidiary management plans:

- Strategy to develop the Scope Management Plan
- Strategy to develop the Schedule Management Plan
- Strategy to develop the Cost Management Plan
- Strategy to develop the Quality Management Plan
- Strategy to develop the Risk Management Plan

Assumptions

The following assumptions are made:

- The project plan will be completed within the five (5) months allotted.
- The only resourse needed is the Project Manager.

Constraints

- The project cannot exceed the allotted five (5) months.

Preliminary risks

- If the tasks are not completed as specified, the overall schedule will be delayed and the project will be extended beyond the five (5) months.

Budget

Currently there are no costs associated with the project.

Milestones and dates

Milestone	Start date	End date
FGP Seminar	June 26, 2017	July 28, 217
Tutoring Process	August 14, 2017	November 17, 2017
Reading by Reviewers	November 20, 2017	December 8, 2017
Adjustments	December 11, 2017	January 5, 2018
Presentation to Board of Examiners	January 8, 2017	January 12, 2017

Relevant historical information

Dynamic Life Foundation is a not-for-profit organization that works to effectively empower Jamaicans by instituting inspiring and innovative programmes and projects, which will produce inner transformation and increased productivity, thereby contributing to a better society. DLF is an initiative of Kingdom Life Advancement Centre (KLAC), a faith-based organization head-quartered in Kingston, Jamaica. KLAC is a member of Kingdom Community Network, a sector of Congress WBN.

Stakeholders

Direct stakeholders:

- DLF Committee Members

Indirect stakeholders:

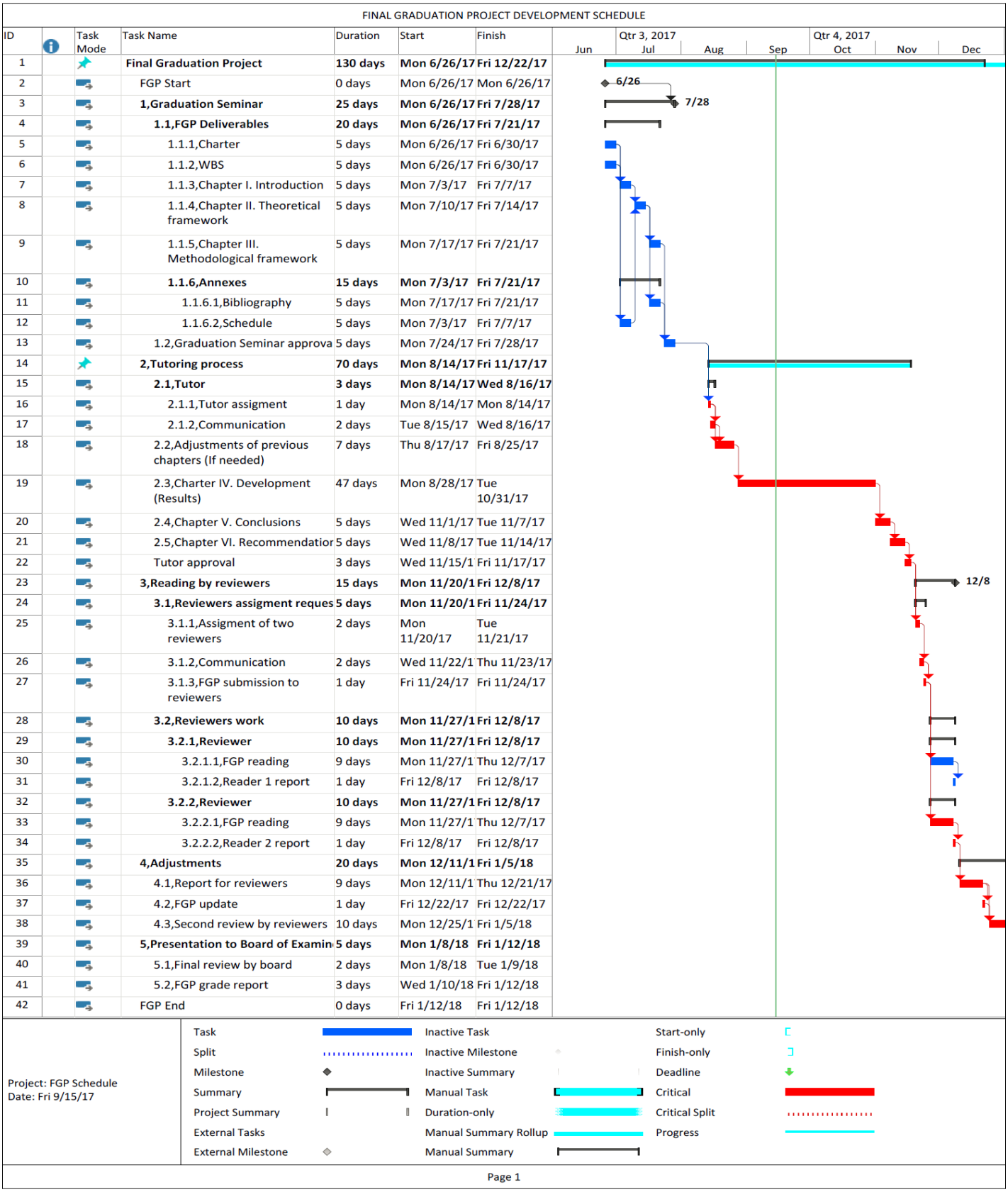
- Project Manager

Project Manager:	**Signature:**
Authorized by:	**Signature:**

Appendix 2: FGP WBS

<table>
<tr><td rowspan="19">0 Final Graduation Project</td><td rowspan="6">1 Graduation Seminar</td><td rowspan="6">1.1 FGP Deliverables</td><td>1.1.1 Charter</td><td rowspan="6"></td></tr>
<tr><td>1.1.2 WBS</td></tr>
<tr><td>1.1.3 Chapter I – Introduction</td></tr>
<tr><td>1.1.4 Chapter II – Theoretical Framework</td></tr>
<tr><td>1.1.5 Chapter III – Methodological Framework</td></tr>
<tr><td rowspan="2">1.1.6 Annexes</td><td>1.1.6.1 Bibliography</td></tr>
<tr><td>1.1.6.2 Schedule</td></tr>
<tr><td>1.2 Graduation Seminar Approval</td><td></td><td></td></tr>
<tr><td rowspan="5">2 Tutoring Process</td><td rowspan="2">2.1 Tutor</td><td>2.1.1 Tutor Assignment</td><td rowspan="2"></td></tr>
<tr><td>2.1.2 Communication</td></tr>
<tr><td>2.2 Adjustment of previous chapters (if necessary)</td><td rowspan="3"></td><td rowspan="3"></td></tr>
<tr><td>2.3 Chapter VI – Development (Results)</td></tr>
<tr><td>2.4 Chapter V – Conclusions</td></tr>
<tr><td>2.5 Chapter VI – Recommendations</td><td></td><td></td></tr>
<tr><td rowspan="5">3 Reading by Reviewers</td><td rowspan="3">3.1 Reviewers assignment request</td><td>3.1.1 Assignment of two reviewers</td><td rowspan="3"></td></tr>
<tr><td>3.1.2 Communication</td></tr>
<tr><td>3.1.3 FGP submission to Reviewers</td></tr>
<tr><td rowspan="4">3.2 Reviewers work</td><td rowspan="2">3.2.1 Reviewer 1</td><td>3.2.1.1 FGP Reading</td></tr>
<tr><td>3.2.1.2 Reader 1 report</td></tr>
<tr><td rowspan="2">3.2.2 Reviewer 2</td><td>3.2.2.1 FGP Reading</td></tr>
<tr><td>3.2.2.2 Reader 1 report</td></tr>
<tr><td rowspan="3">4 Adjustments</td><td>4.1 Report for reviewers</td><td rowspan="5"></td><td rowspan="5"></td></tr>
<tr><td>4.2 FGP update</td></tr>
<tr><td>4.3 Second review by Reviewers</td></tr>
<tr><td rowspan="2">5 Presentation to Board of Examiners</td><td>5.1 Final review by board</td></tr>
<tr><td>5.2 FGP grade report</td></tr>
</table>

Appendix 3: FGP Schedule



Appendix 4: Philologist Dictum

December 7, 2017

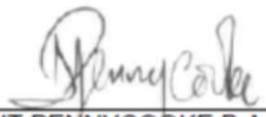
Academic Advisor
Master's Degree in Project Management (MPM)
Universidad para la Cooperacion Internacional (UCI)
San Jose, Costa Rica

Dear Academic Advisor,

Re: Philological Review of Final Graduation Project submitted by Simone Spencer in partial fulfilment of the requirements for the Masters in Project Management (MPM) Degree.

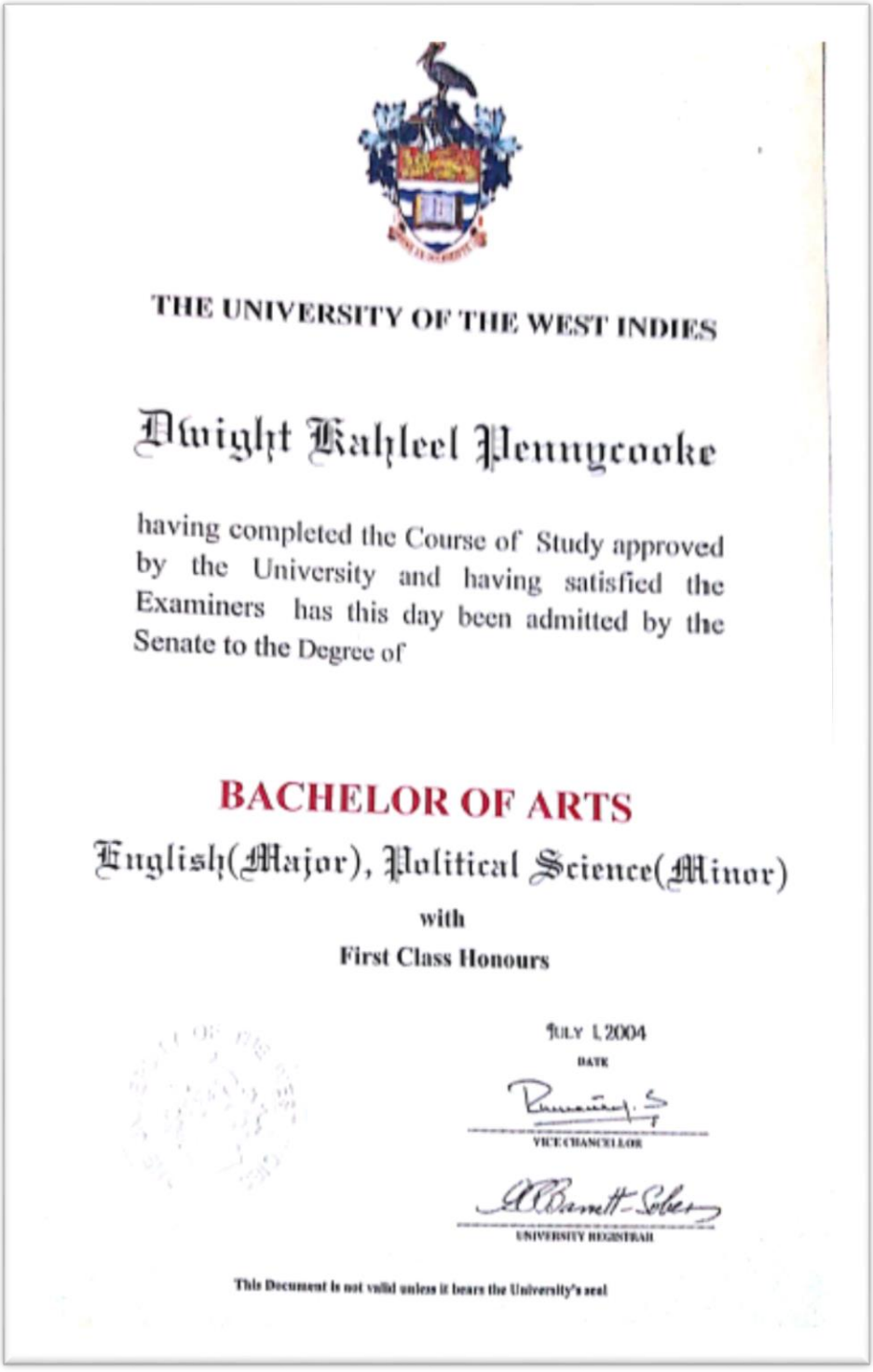
I, Mr. Dwight Pennycooke, hereby declare that this project entitled, *Project Management Plan for the Implementation of a Community Cyber Centre for Dynamic Life Foundation (DLF)*, has been reviewed and corrected as I have advised. The document does now meet the literary and linguistic standards expected of a student reading for a degree at the Masters level. It is against that background that I recommend this work for assessment.

Yours Sincerely,



DWIGHT PENNYCOOKE B.A. (Eng), MPhil (Eng)

Appendix 5: Philologist Qualification – Bachelor of Arts



THE UNIVERSITY OF THE WEST INDIES

Dwight Kahleel Pennycooke

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

English(Major), Political Science(Minor)

with

First Class Honours

JULY 1, 2004

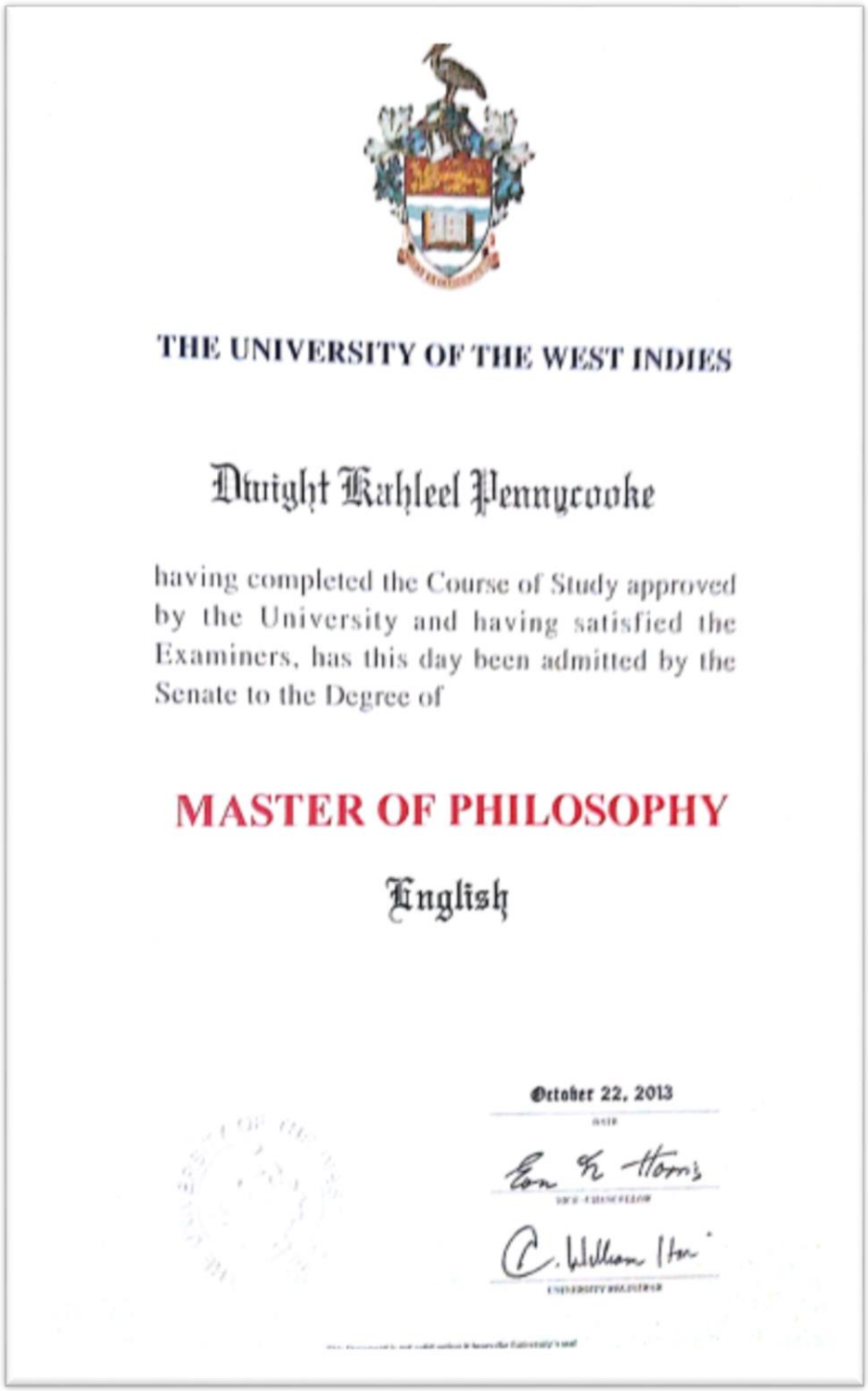
DATE

VICE CHANCELLOR

UNIVERSITY REGISTRAR

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

Appendix 6: Philologist Qualification – Master of Philosophy



THE UNIVERSITY OF THE WEST INDIES

Dwight Kahleel Pennycooke

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

MASTER OF PHILOSOPHY

English

October 22, 2013