UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL
(UCI)

PROJECT MANAGEMENT PLAN FOR THE IMPLEMENTATION OF THE "ENVIRONMENTAL EDUCATION THROUGH VIRTUAL FIELD EXPERIENCES" PROJECT

NAKASI FORTUNE

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

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(UCI)

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

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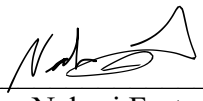

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DEDICATION

This project and, by extension, this degree, is dedicated to my late mother, Nidra Chapman, whose unconditional love continues to influence my life. From the moment she brought me into this world, she instilled within me a deep sense of purpose and determination. Her unwavering support and belief in my dreams were the pillars that carried me through the highs and lows of this Master's program. Though she is no longer physically present, her spirit lives on, illuminating my path and inspiring me to reach for the stars. This achievement is a testament to the values she instilled in me. This is for her, my guiding light, and for the legacy of love she left behind.

ACKNOWLEDGMENTS

Firstly, and perhaps most importantly, I was to express my gratitude to God for bringing me to and through this moment.

I want to express profound gratitude to my ancestors who live in me and continue to light my path.

Thank you to my partner Jonas for being a shoulder and source of constant support and strength during this period. Thank you to my family and friends who were a listening ear and sounding board during times of uncertainty and triumph. Thank you to my work community for allowing me the time and space to complete this project while balancing the demands of my job. Finally, thank you to my Final Graduation Project tutor, Mr. Cristian Soto, for all the help received and the patience extended during the development of this project.

Your support has been vital.

ABSTRACT

It is the purpose of this document to develop a project management plan that will assist in facilitating the successful implementation of the "Environmental Education through Virtual Field Experiences" project. This project promotes equity, inclusion, and diversity in environmental education by allowing learners from underserved and vulnerable communities to participate in quality and interactive learning opportunities. The final product of this Final Graduation Project (FGP) consists of a project management plan and its subsidiary management plans: integration, scope, stakeholder, communications, schedule, cost, resource, procurement, quality, and risk. Every plan contains the applicable and appropriate processes, procedures, tools, and techniques necessary to manage the project in a structured manner. To achieve the objective of this final graduation project; qualitative, quantitative, and mixed research methods are used, along with the Project Management Body of Knowledge (PMBOK ®) Guide provided by the Project Management Institute. Based on the findings of this project, there is an excellent need for virtual field experiences within environmental education to cater to people of all abilities and backgrounds. For this reason, it is essential that the project management plan developed is comprehensive and intentional to ensure the project's success. Accordingly, it is recommended that the project management team execute the project in accordance with the management plans outlined in this document.

Keywords: environmental education, project management plan, virtual field trips

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ABBREVIATIONS AND ACRONYMS

EPA	Environmental Protection Agency
FGP	Final Graduation Project
NGDO	Non-governmental Development Organization
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PMIS	Project Management Information System
PMP	Project Management Plan
PAC	Protected Areas Commission
RBS	Risk Breakdown Structure
SDGs	Sustainable Development Goals
UN	United Nations
WBS	Work Breakdown Structure
WCAG	Web Content Accessibility Guidelines
Symbol >	Greater/larger than
Symbol <	Less/smaller than

EXECUTIVE SUMMARY

All children need to be able to explore and learn about the natural world in a way that sparks their curiosity while enriching their lives. Sadly, many children from underserved and vulnerable communities do not have access to activities that cultivate an appreciation of the natural world due to economic, geographic, and other restrictions. Against this background, The Common Loop developed the "Environmental Education through Virtual Field Experiences" Project to create meaningful and engaging learning experiences for children ages 7-12 years old, expand access to hard-to-reach and otherwise inaccessible places, promote the importance of equity, inclusion, and diversity in environmental education programming by removing financial and accessibility barriers to engaging with a location, utilize technology to complement in-person travel through the delivery of virtual experiences and engage with industry stakeholders.

As a social enterprise, The Common Loop provides learning opportunities that bridge the access gap between environmental education and children and youth from underserved and vulnerable communities. The company offers programs for children and youth throughout Africa, the Caribbean, and the Pacific, integrating environmental stewardship, culture, history, and science. With a combined experience of over 15 years in the fields of environmental education, agriculture, and program development and management, the team is well qualified to lead this project. Currently, The Common Loop lacks a comprehensive library of documented project management tools, such as a project management plan template. This is attributed to the fact that The Common Loop is still in its early stages of development and has yet to have the time to create and document the range of project management tools it needs.

The purpose of this final graduation project (FGP) was to create a project management plan that will serve as a guide for implementing the “Environmental Education through Virtual Field Experiences” project. The nature of the project and its importance to learners from underserved and vulnerable communities make it imperative that a project management plan be developed to guide the project’s planning and execution. An effective project management plan is critical to the success of a project. The subsidiary plans that comprise the project management plan provide detailed information on how the project will be planned and executed. A lack of clear guidelines, procedures, and templates can negatively impact the project’s outcome and lead to a less-than-satisfactory implementation. The documents and templates created as a result of this final graduation project (FGP) will assist the company in implementing similar projects in the future. They will be added to its organizational process assets.

The general objective of the Final Graduation Project was to develop a Project Management Plan incorporating the best practices outlined by the Project Management Institute (PMI) for the “Environmental Education through Virtual Field Experiences” project which will serve as a guide for its implementation. The specific objectives were: to

develop a Project Charter to formally authorize the project and provide the Project Manager with the needed authority to apply resources to the project activities; to develop a Scope Management Plan to define the work which is needed to achieve the project deliverables; to develop a Stakeholder Management Plan to identify, engage and manage the project stakeholders efficiently and effectively; to develop a Communications Management Plan to ensure the timely and effective communication between and among project stakeholders; to develop a Schedule Management Plan to ensure the project activities are completed within the established and agreed upon timeline; to develop a Cost Management Plan to ensure the project costs are completed within the established and agreed upon budget; to develop a Quality Management Plan to identify and outline the quality parameters and necessary procedures to control quality and ensure the project deliverables meet stakeholder acceptance criteria; to develop a Resource Management Plan to outline clearly the project roles, responsibilities and needed skills and knowledge to successfully complete the project; to develop a Procurement Management Plan to identify, acquire and control the external products, services and results required for the project's success; and to develop a Risk Management Plan that defines the project's risk identification, analysis, response, and monitoring and controlling.

The methodology used to conduct the research was qualitative, quantitative, and mixed-methods research. The project's information was gathered from primary and secondary sources, including, but not limited to, interviews and discussions, the PMBOK® Guide, and other Project Management standards published by the Project Management Institute (PMI).

The project management plan, with all of its subsidiary plans, developed using the PMBOK® Guide, provided a sound methodology for the Project Manager and team to create the necessary project management plan to ensure that The Common Loop is able to execute a successful project that complies with the constraints of time, budget, scope, and quality.

As recommendations, in the future, the company should utilize sound project management principles as outlined by the Project Management Institute. Further to this, it should prioritize project communication and stakeholder management to reduce miscommunications and conflicts. It is also recommended that The Common Loop takes time and care to assess the project's deliverables given its importance in advancing environmental stewardship.

1 INTRODUCTION

1.1 Background

Founded in 2022, The Common Loop is a social enterprise that provides learning opportunities that bridge the access gap between environmental education and children and youth from underserved and vulnerable communities. Through its operations throughout Africa, the Caribbean, and the Pacific, it offers programs for children and youth that integrate environmental stewardship, culture, history, and science. The team has a combined experience of over 15 years in the field of environmental education, agriculture, and program development and management. This wide-ranging expertise enables the team to design, build and implement innovative and cutting-edge programs that have a lasting and positive impact on the communities they serve.

Common Loop is undertaking several projects, including *"Environmental Education through Virtual Field Experiences."* Using technology, the project intends to create interactive and immersive virtual field experiences that enable children to explore and learn about different locations worldwide, including their cultural and natural history, peoples, and biodiversity. Initially, the project will be funded by a grant of US $25,000 and has an estimated duration of six months. The project is as simple as it is complex and therefore requires careful and intentional planning and execution. The project, upon completion, will remove barriers to participation (transportation, financial, mobility, etc.) in environmental education programming for children from underserved and vulnerable communities.

The developed project management plan will meet the needs of the Environmental Education through Virtual Field Experiences" project and its stakeholders. The plan will outline the scope, goals, resources, timeline, risk, and budget associated with the project. It will also identify the roles and responsibilities of stakeholders and any potential issues that could arise and how to address them. By having a clear and comprehensive document to refer to, project team members will be able to understand the project's objectives and timeline better and ensure that everyone is on the same page. This will help ensure that the project is completed efficiently and on time. Additionally, stakeholders can trust that their needs and expectations will be met, as the project will be appropriately managed and organized.

1.2 Statement of the problem

As a newly established organization, The Common Loop lacks a comprehensive library of documented project management tools, such as a project management plan template. Because The Common Loop is still in its infancy, it does not have the resources or the personnel required to develop such a library, and this limits the organization's ability to properly plan and execute projects by recommended project management standards, which can lead to delays, inefficiencies, and increased costs. Even with the best project management plan, there is always the potential for a project to go off-track. However, a well-thought-out and executed project management plan can reduce the likelihood of failure.

The nature of the project and its importance to the end users make it imperative that a project management plan be developed to guide the project's planning and execution.

As a result of the development and subsequent implementation of this project management plan, The Common Loop will be able to clearly define the project's scope, stakeholders, communications guidelines, schedule, costs, quality metrics, resource allocation, procurement, and risk, which will provide the company with benefits. It is intended that this project management plan, once completed, will be included as part of the organizational process assets of the company. This plan can be used as a reference document and tailored to guide how to manage future projects best, and it can help standardize the project management process within The Common Loop. It is also intended to be updated to incorporate new best practices and technologies.

1.3 Purpose

An effective project management plan is critical to the success of a project. A well-developed project management plan can help to ensure that all project tasks are completed on time, within budget, and the resources are allocated appropriately. According to the PMBOK® Guide (p. 34), the project management plan "describes how the project will be executed, monitored and controlled." The subsidiary plans that comprise the project management plan provide detailed information on how the project will be planned and executed. The purpose of this final graduation project (FGP) is to create a project

management plan that will guide the implementation of the “Environmental Education through Virtual Field Experiences” project.

“Environmental Education through Virtual Field Experiences” is a project that holds tremendous significance to learners from underserved and vulnerable communities, including people with physical and learning disabilities. By providing virtual field experiences, the project allows these communities to gain access to educational experiences that they would otherwise not have access to due to physical or financial limitations. Additionally, virtual field experiences allow learners to engage in meaningful exploration and learning by interacting with their environment in a safe and controlled virtual setting. Consequently, it is imperative that the project be planned and executed in such a manner as to guarantee its success and meet the needs of all the project stakeholders.

1.4 General objective

To develop a Project Management Plan incorporating the best practices outlined by the Project Management Institute (PMI) for the “Environmental Education through Virtual Field Experiences” project, which will serve as a guide for its implementation.

1.5 Specific objectives

The specific objectives of the Final Graduation Project (FGP) are as follows:

1. To develop a Project Charter to formally authorize the project and provide the Project Manager with the needed authority to apply resources to the project activities.
2. To develop a Scope Management Plan to define the work which is needed to achieve the project deliverables.
3. To develop a Stakeholder Management Plan to identify, engage and manage the project stakeholders efficiently and effectively.
4. To develop a Communications Management Plan to ensure timely and effective communication between and among project stakeholders.
5. To develop a Schedule Management Plan to ensure the project activities are completed within the established and agreed-upon timeline.
6. To develop a Cost Management Plan to ensure the project costs are completed within the established and agreed-upon budget.
7. To develop a Quality Management Plan to identify and outline the quality parameters and necessary procedures to control quality and ensure the project deliverables meet stakeholder acceptance criteria.
8. To develop a Resource Management Plan to outline clearly the project roles, responsibilities, and needed skills and knowledge to successfully complete the project.
9. To develop a Procurement Management Plan to identify, acquire and control the external products, services, and results needed for the project's success.

10. To develop a Risk Management Plan that defines the project's risk identification, analysis, response, and monitoring and controlling.

2 THEORETICAL FRAMEWORK

2.1 Company/Enterprise framework

2.1.1 Company/Enterprise background

The Common Loop is a newly established organization started by educators and program designers working within the environmental and agricultural sectors. The organization seeks to provide learning opportunities that close the access gap between environmental education and children and youth from underserved and vulnerable communities. The Common Loop aims to increase the knowledge, skills, abilities, and attitudes of children and youth in these groups so they can better understand the natural world and their role in it as environmental stewards.

As a new social enterprise, it seeks to develop and deliver various virtual and in-person programs, including field trips, workshops, events, and projects. Designed to be accessible and inclusive, these programs are hands-on, engaging, and meaningful, igniting a passion for the natural world. Through partnerships with schools, community groups, orphanages, and other social groups, The Common Loop's goal is to offer programs for children and youth that integrate environmental stewardship, culture, history, and science.

2.1.2 Mission and vision statements

Company's Mission Statement

To ignite a passion for the natural world in children and youth from underserved and vulnerable communities by providing access to engaging, meaningful, and accessible nature-based educational opportunities. (Source: Author of Study)

The mission statement of The Common Loop outlines the organization's desire to produce an environmentally literate citizenry by providing nature-based environmental education programs and projects. The development of a project management plan for the implementation of one of its projects is vital to living into this mission since the project management plan should increase the chances of project success.

Company's Vision Statement

A world where all children and youth, regardless of their abilities, background, or circumstances, can explore and connect with nature. (Source: Author of Study)

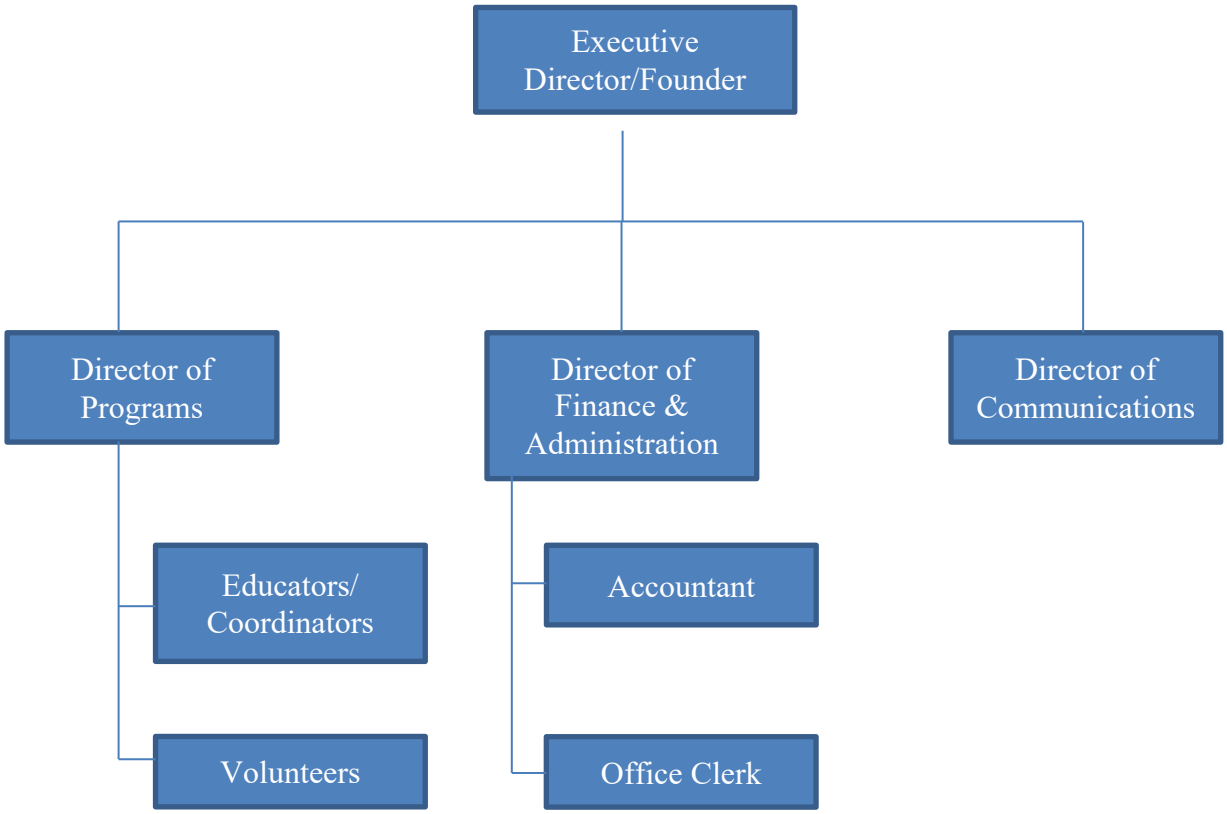
Developing a project management plan helps The Common Loop work towards its vision by providing organization assets that can be used for this and other projects that the organization embarks upon.

2.1.3 Organizational structure

The Common Loop focuses on social impact and financial sustainability, operating as a social enterprise. The organization uses a functional organizational structure, with the Executive Director (ED)/Founder at the helm. The team is a small and tight knit one, and

while hierarchical for reporting and management purposes, decision-making is more horizontal.

Figure 1: *Organizational Structure (Source: Author of Study)*



2.1.4 Products Offered

The Common Loop aims to offer the following products:

- In-Person Nature-Based Education Programs include guided hikes, bird watching, overnight nature camps, and day camps.

- Virtual Nature-Based Education Programs – interactive live and pre-recorded virtual sessions with educators covering various topics about the natural world.
- Educator Training Programs – workshops and projects that target environmental educators who work in and with underserved and vulnerable communities.

2.2 Project Management concepts

2.2.1 Project

A project is "a temporary endeavor undertaken to create a unique product, service, or result." (PMBOK® Guide, 2021, p. 245).

Projects are initiated for one or more reasons. This includes new technology, competitive forces, material issues, political change, market demand, economic changes, customer requests, stakeholder demands, legal requirements, business process improvements, strategic opportunity or business needs, social needs, or environmental considerations.

The project that informs this FGP Project Management Plan development is being initiated because of strategic opportunity/business and social needs. The result will be unique, drive change, has a definite start and end date, and enables business value creation, all things that comprise a project.

2.2.2 Project management principles

PMI prescribes twelve (12) project management principles that complement the values outlined in the *PMI Code of Ethics and Professional Conduct*. These, according to the PMBOK® Guide (2021), "do not follow the same format, and they are not duplicative; rather, the principles and the *Code of Ethics* are complementary." The principles of project management as established by project practitioners worldwide are:

- Be a diligent, respectful, and caring steward.
- Create a collaborative project team environment.
- Effectively engage with stakeholders.
- Focus on value.
- Recognize, evaluate, and respond to system interactions.
- Demonstrate leadership behaviors.
- Tailor based on context.
- Build quality into processes and deliverables.
- Navigate complexity.
- Optimize risk responses.
- Embrace adaptability and resiliency.
- Enable change to achieve the envisioned future state.

Within the context of this FGP, all 12 principles will be considered, given their individual and collective importance to project management. In more established

organizations with dedicated and trained project professionals, these principles are incorporated into their daily functioning. However, for an organization such as The Common Loop, the intentional incorporation of these principles into the daily functioning would be of significant benefit for not only the success of this project but the other projects as well. To make them operational, the project team should be made aware of these principles, and professional development centered around developing the skills to engage with and apply them should be sought effectively.

2.2.3 Project management domains

The principles of project management serve as a guide for the project performance domains. According to the PMBOK® Guide (2021), there are eight (8) project performance domains that are crucial "for the effective delivery of project outcomes. (p.6). These eight domains are:

1. Stakeholders
2. Team,
3. Development Approach and Life Cycle,
4. Planning,
5. Project Work,
6. Delivery,
7. Measurement,
8. Uncertainty.

The project performance domains are interconnected and interdependent areas that work together to attain the desired project outcome. Further, “the performance domains operate as an integrated system, with each performance domain being interdependent of the other performance domains to enable successful delivery of the project and its intended outcomes.” (PMBOK® Guide, 2021, p. 7).

2.2.4 Predictive, adaptative, and hybrid projects

Predictive projects are also referred to as “waterfall” projects because they follow a linear and sequential approach to project management. As noted in PMBOK® Guide (2017), “requirements are defined up-front before development begins.” (p, 666). Within this model, the project risks and costs are controlled by extensive planning, and changes are only as necessary with proper and prior approval.

Adaptive projects are more flexible by nature and are also known as “agile” projects. This type of project centers collaboration and welcomes change as new information becomes available. Being iterative, this model allows for continuous improvement, and the “project risk and cost are controlled as requirements and constraints emerge” (PMBOK® Guide, 2019, p. 666).

Hybrid projects are a healthy combination of both predictive and adaptive approaches. Within this model, some aspects of the project may follow an adaptive approach, and some may follow a predictive approach allowing for flexibility and balance.

This FGP and its product will be developed using the hybrid approach to balance the benefits that come with the predictable nature of the waterfall method and the flexibility afforded by the agile method.

2.2.5 Project management

Project Management is defined by PMI as "the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements." (PMBOK® Guide, 2017). Project Management is of critical importance to a project and ensures that it is executed efficiently and effectively. Beyond this, Project Management has several benefits, including but not limited to ensuring the optimization of organizational resources, meeting and exceeding stakeholder expectations, reducing and managing risks, and managing change. Conversely, the absence of proper project management could potentially lead to scope creep, dissatisfied stakeholders and project team members, and financial issues, among other things.

The result of this FGP is a comprehensive project management plan and its subsidiary plans that will serve as a guide for the implementation of the *"Environmental Education through Virtual Field Experiences"* project. By utilizing the best practices for project management as outlined in the project management plan, The Common Loop should record success upon completion of the project.

2.2.6 Project management process groups

The PMBOK® Guide, 2017, outlines five (5) distinct process groups that provide a structured approach to managing projects and meeting project objectives. These process groups are:

1. Initiating – includes all the processes for defining and authorizing the project.
2. Planning – includes all the processes for defining the project scope, setting project goals and objectives, developing the project schedule, and creating the project budget.
3. Executing – includes all the processes for carrying out the activities defined in the project plan.
4. Monitoring and controlling – includes all the processes for tracking project progress, identifying and resolving project issues, and making changes as necessary.
5. Closing – includes all the processes for finalizing all project activities and formally closing the project.

2.2.7 Project management knowledge areas and processes

A project management knowledge area is defined as “an identified area of project management defined by its knowledge requirements and described in terms of its component processes, practices, inputs, outputs, tools, and techniques.” (PMBOK® Guide, p. 23).

There are ten (10) knowledge areas that are interrelated and used in most projects most of the time. Within these ten knowledge areas, there are 49 processes that are arranged based on their positioning within the five (5) process groups.

The ten knowledge areas described by PMI are:

1. Project Integration Management – includes the processes and activities to coordinate all aspects of the project, such as scope, time cost, quality, risk, procurement, resources, stakeholders, and communications. There are seven (7) processes within this knowledge area.
    a. Develop Project Charter
    b. Develop Project Management Plan
    c. Direct and Manage Project Work
    d. Manage Project Knowledge
    e. Monitor and Control Project Work
    f. Perform Integrated Change Control
    g. Close Project or Phase
2. Project Scope Management – includes the processes required to define and control the project scope to complete the project successfully. There are six (6) processes:
    a. Plan Scope Management
    b. Collect Requirement
    c. Define Scope
    d. Create WBS

    e. Validate Scope
    f. Control Scope

3. Project Schedule Management – includes the processes required to plan and control the project schedule to ensure the timely completion of the project. The six (6) processes in this Knowledge Area are:
    a. Plan Schedule Management
    b. Define Activities
    c. Sequence Activities
    d. Estimate Activity Durations
    e. Develop Schedule
    f. Control Schedule
4. Project Cost Management – includes the processes required to plan, estimate, budget, finance, and control costs to ensure the project is completed within the approved budget. The four (4) processes include:
    a. Plan Cost Management
    b. Estimate Costs
    c. Determine Budget
    d. Control Costs
5. Project Quality Management – includes the processes required to ensure that the project deliverables meet the stakeholders' objectives and quality requirements. The three (3) processes are:
    a. Plan Quality Management

   b. Manage Quality
   c. Control Quality

6. Project Resource Management – includes the processes to identify, source, and manage the human and physical resources needed for the project. The six (6) processes are:
   a. Plan Resource Management
   b. Estimate Activity Resources
   c. Acquire Resources
   d. Develop Team
   e. Manage Team
   f. Control Resources
7. Project Communications Management – includes the processes to plan and manage the information flow of the project among its stakeholders. The three (3) processes are:
   a. Plan Communications Management
   b. Manage Communications
   c. Monitor Communications
8. Project Risk Management – includes the processes to identify, analyze, respond to, and monitor risks on the project. The seven (7) processes are:
   a. Plan Risk Management
   b. Identify Risks
   c. Perform Qualitative Risk Analysis

   d. Perform Quantitative Risk Analysis
   e. Plan Risk Responses
   f. Implement Risk Responses
   g. Monitor Risks
9. Project Procurement Management – includes the processes to acquire goods and services needed from outside of the project team for the project. The three (3) processes are:
   a. Plan Procurement Management
   b. Conduct Procurements
   c. Control Procurements
10. Project Stakeholder Management – includes the processes to identify and manage the people, groups, and organizations who can impact or be impacted by the project. The four (4) processes are:
   a. Identify Stakeholders
   b. Plan Stakeholder Engagement
   c. Manage Stakeholder Engagement
   d. Monitor Stakeholder Engagement

The FGP will provide a guide for The Common Loop about the knowledge areas and how to apply them to this specific project and similar projects that they will execute.

Figure 2: *Project Management Knowledge Areas and Process Groups* (Source: Project Management Institute. (2017). A Guide to the project management body of knowledge (PMBOK® guide) (6th ed.). Permission not sought.)

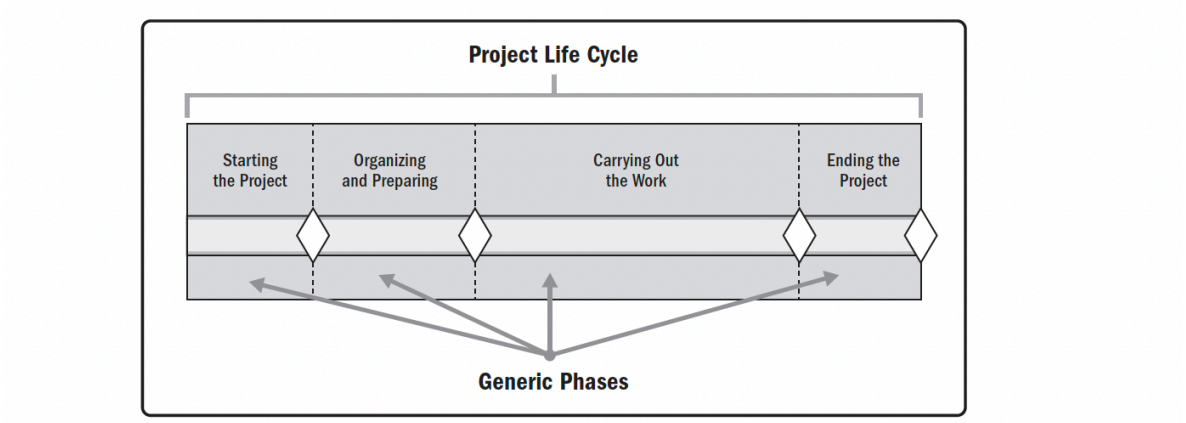
Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
4. Project Integration Management	4.1 Develop Project Charter	4.2 Develop Project Management Plan	4.3 Direct and Manage Project Work 4.4 Manage Project Knowledge	4.5 Monitor and Control Project Work 4.6 Perform Integrated Change Control	4.7 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 Schedule Management		6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Durations 6.5 Develop Schedule		6.6 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 Manage Quality	8.3 Control Quality	
9. Project Resource Management		9.1 Plan Resource Management 9.2 Estimate Activity Resources	9.3 Acquire Resources 9.4 Develop Team 9.5 Manage Team	9.6 Control Resources	
10. Project Communications Management		10.1 Plan Communications Management	10.2 Manage Communications	10.3 Monitor 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 Implement Risk Responses	11.7 Monitor Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Control Procurements	
13. Project Stakeholder Management	13.1 Identify Stakeholders	13.2 Plan Stakeholder Engagement	13.3 Manage Stakeholder Engagement	13.4 Monitor Stakeholder Engagement	

2.2.8 Project life cycle

According to PMBOK® Guide (2017), the project life cycle is the "series of phases that a project passes through from its start to completion." (p. 18). There are four (4) phases that make up a generic project lifecycle: starting the project, organizing and preparing, carrying out the Work, and ending the project. Project lifecycles can be predictive or adaptive but must be flexible. The project management team ultimately determines the best life and development cycle for the project.

For this project, the development lifecycle is hybrid in nature.

Figure 3: *Project Lifecycle (Source: PMBOK® Guide, 2017)*



2.2.9 Company strategy, portfolios, programs, and projects

The Common Loop, as a startup organization, centers its strategy around providing access to quality, accessible, and inclusive nature-based environmental education programs that develop the capacities and capabilities of children and youth from underserved and vulnerable communities. To this end, the organization is guided by four (4) key strategies:

- Virtual and In-Person Programs
- Experienced and Invested Educators
- Partnership and Collaboration
- Scalability and Regeneration

As its first project, *Virtual Environmental Education through Field Experiences* seeks to provide an interactive and immersive virtual field experience (VFE) that allows children and youth from underserved and vulnerable communities to explore and learn about the indigenous peoples, cultural and natural history, and biodiversity of one of the most beautiful and unique natural locations in Guyana; Kaieteur National Park. Working with subject matter experts across the environment, education, and accessibility sectors, this virtual field experience will be designed to be inclusive and accessible to all children from the target audience, regardless of their background or abilities.

2.3 Other applicable theories/concepts related to the project topic and context

2.3.1 Current situation of the problem or opportunity in study

The lack of a comprehensive project management plan and its subsidiary plans, for this or similar project, within The Common Loop is to be expected, given the relative newness of the organization. This presents significant challenges for the Director of Programs and the organization since there is no clear roadmap for the development and execution of the project. Given this, the project would be at risk of experiencing roadblocks

and delays, unmet stakeholder expectations, cost overruns, and scope creep, among other issues.

Additionally, without this project management plan, it would be difficult for the project team to identify and allocate resources, project communications would suffer, and there would be a sure breakdown in the project documentation.

3 METHODOLOGICAL FRAMEWORK

This chapter provides details on the information sources, research methods, and tools used in the execution of this FGP. Additionally, it outlines the assumptions, constraints, and deliverables of the FGP.

3.1 Information sources

Information refers to "knowledge obtained from investigation, study, or instruction." (Merriam-Webster, n.d., Definition 1). A variety of sources can provide information: newspapers, books, journals, observations, pictures, etc. Information sources can be classified into three types, and each type is chosen based on the kind of information required. These are:

1. Primary sources
2. Secondary sources
3. Tertiary sources

For this FGP, primary and secondary information sources will be utilized.

3.1.1 Primary sources

Primary sources of information are the evidence of original or new discoveries, events, or experiences. The American Library Association (2015) defined it as "the evidence of history, original records or objects created by participants or observers at the time historical events occurred or even well after events." Primary sources of information

include historical documents, eyewitness accounts, original artwork, poems, photographs, journals, letters, audio and video recordings, oral history, speeches, interviews, etc. Chart 1 outlines the primary sources to be used for this FGP.

3.1.2 Secondary sources

Secondary sources of information are interpretations or restatements of primary sources. These sources are second-hand and usually produced after the event has occurred, unlike primary sources. Furman University Libraries (2021) notes secondary sources as "often used generalizations, analysis, interpretations and synthesis of primary sources." Examples of secondary sources include but are not limited to peer-reviewed journals, online articles, books, dissertations, and biographies.

Chart 1 outlines the secondary sources to be used in this FGP.

Chart 1: *Information Sources (Source: Author of Study)*

Objectives	Information sources	
	Primary	**Secondary**
To develop a project charter to formally authorize the project and provide the Project Management with the authority to apply resources to the project activities.	• Meetings and discussions with key stakeholders	• PMBOK Guide 6th edition • UCI professor presentation • Peer reviewed journals
To develop a Scope Management Plan to define the work which is needed to achieve the project deliverables.	• Meetings and discussions with key project stakeholders • Lessons learnt	• PMBOK Guide 6th edition • Practice Standard for Work Breakdown Structures 3rd edition • Peer reviewed journals
To develop a Stakeholder Management Plan to identify, engage and manage the project stakeholders efficiently and effectively.	• Meetings and discussions with key project stakeholders • Lessons learnt	• PMBOK Guide 6th edition • Online articles and templates
To develop a Communications Management Plan to ensure the timely and effective communication between and among project stakeholders.	• Meetings and discussions with key project stakeholders	• PMBOK Guide 6th edition • Online articles • Peer reviewed journals
To develop a Schedule Management Plan to ensure the project activities are completed within the established and agreed upon timeline.	• Meetings and discussions with key project stakeholders	• PMBOK Guide 6th edition • Practice Standard for Scheduling 3rd edition • Online articles and templates
To develop a Cost Management Plan to ensure the project costs are completed within the	• Meetings and discussions with key project stakeholders • Observations	• PMBOK Guide 6th edition

established and agreed upon budget.		• Practice Standard for Project Estimating 2nd edition. • Online articles and templates
To develop a Quality Management Plan to identify and outline the quality parameters and necessary procedures to control quality and ensure the project deliverables meet stakeholder acceptance criteria.	• Meetings and discussions with key project stakeholders	• PMBOK Guide 6th edition • Online articles and templates
To develop a Resource Management Plan to outline clearly the project roles, responsibilities and needed skills and knowledge to successfully complete the project.	• Meetings and discussions with key project stakeholders	• PMBOK Guide 6th edition • Online articles and templates
To develop a Procurement Management Plan to identify, acquire and control the external products, services, and results needed for the project's success.	• Meetings and discussions with key project stakeholders	• PMBOK Guide 6th edition • Websites • Online articles
To develop a Risk Management Plan that defines the project's risk identification, analysis, response, and monitoring and controlling.	• Meetings and discussions with key project stakeholders	• PMBOK Guide 6th edition • Practice Standard for Project Risk Management in Portfolios, Programs and Projects • Peer reviewed journals • Books

3.2 Research methods

Research methods are a vital part of any research process. The Pfeiffer Library at Tiffin University describes research methods as the ways in which data is collected for a research project. There are three (3) main types of research methods: Qualitative, Quantitative, and Mixed. Research methods must be selected carefully to ensure that the appropriate data is collected and analyzed for the project.

3.2.1 Qualitative Research Method

Qualitative Research is "the study of the nature of phenomena and is especially appropriate for answering questions of why something is (not) observed, assessing complex multi-component interventions, and focusing on intervention improvement." (Busetto, et al, 2020).

Simply put, qualitative research is employed to understand underlying reasons, opinions, and motivations thoroughly. The data collected using this method cannot be measured using mathematical means, e.g., units. It is there subjective and includes, among other things:

- Focus groups
- Case studies
- In-depth interviews
- Narrative research

- Observations

3.2.2 Quantitative Research Method

Quantitative research, on the other hand, uncovers facts through the collection of numerical data and statistical analysis. Its results are measurable and can be used to describe and predict control variables. Qualitative research, according to a Simple Psychology article, "involves the process of objectively collecting and analyzing numerical data to describe, predict or control variables of interest." (McLeod, 2019).

Examples of quantitative research methods include experiments, surveys, observation, and document screening.

3.2.3 Mixed-methods Research Method

Mixed method research incorporates both qualitative and quantitative analysis. It is best used when there is a need for a more comprehensive and in-depth understanding of a problem. The University of Newcastle's library notes that the mixed methods research method "provides a holistic approach combining and analyzing the statistical data with deeper contextualized insights" (2023).

Chart 2: *Information Sources (Source: Author of Study)*

Objectives	**Research methods**		
	Qualitative Research	Quantitative Research	Mixed Research
To develop a project charter to formally authorize the project and provide the Project Management with the authority to apply resources to the project activities.	Information will be gathered from interviews and meetings with key stakeholders.		
To develop a Scope Management Plan to define the work which is needed to achieve the project deliverables	Information will be gathered from in-depth interviews and meetings with key stakeholders to formulate the project's scope.		
To develop a Stakeholder Management Plan to identify, engage and manage the project stakeholders efficiently and effectively	Information will be gathered from interviews and meetings with key stakeholders.		
To develop a Communications Management Plan to ensure the timely and effective communication between and among project stakeholders	Information will be gathered from interviews and meetings with key stakeholders.		
To develop a Schedule Management Plan to ensure the project activities are completed within the established and agreed upon timeline		Analysis from similar projects and estimation techniques will be used to complete the project	

		schedule and its management plan.	
To develop a Cost Management Plan to ensure the project costs are completed within the established and agreed upon budget		Analysis from similar projects and estimation techniques will be used to complete the project budget and cost management plan.	
To develop a Quality Management Plan to identify and outline the quality parameters and necessary procedures to control quality and ensure the project deliverables meet stakeholder acceptance criteria			Analysis and screening from similar projects, in addition to meetings and interviews with stakeholders will be used to develop the quality management plan.
To develop a Resource Management Plan to outline clearly the project roles, responsibilities and needed skills and knowledge to successfully complete the project			Analysis and screening from similar projects, in addition to meetings and interviews with stakeholders will be used to develop the resource management plan.
To develop a Procurement Management Plan to identify, acquire and control the external products, services and results needed for the project's success; and			Analysis and screening from similar projects, in addition to meetings and interviews with stakeholders will

			be used to develop the resource management plan.
To develop a Risk Management Plan that defines the project's risk identification, analysis, response, and monitoring and controlling.	Information will be gathered from interviews and meetings with key stakeholders.		

3.3 Tools

PMI defines a tool as "something tangible, such as a template or software program, used in performing an activity to produce a product of result." (PMI, 2017, p 725). The use of tools and techniques is essential to supporting project management processes. Project Managers benefit significantly from the appropriate and applicable use of tools and techniques during a project's initiating, planning, executing, monitoring, controlling, and closing phases.

For this FGP, several tools and techniques will be used to facilitate its success. These include but are not limited to the following:

- Work Breakdown Structure
- Project Management Information Systems (PMIS)
- Lessons Learnt
- Risk Register
- Earned Value Management

- Stakeholder Analysis
- Meetings
- Interviews

A comprehensive list of the tools and techniques to be used for this FGP is found in Chart 3.

Chart 3: *Tools (Source: Author of Study)*

Objectives	Tools
To develop a project charter to formally authorize the project and provide the Project Management with the authority to apply resources to the project activities.	Data gathering (brainstorming), Expert Judgment
To develop a Scope Management Plan to define the work which is needed to achieve the project deliverables.	Expert Judgment, Data gathering (brainstorming, interviews), Data analysis, Meetings
To develop a Stakeholder Management Plan to identify, engage and manage the project stakeholders efficiently and effectively.	Expert Judgment, Data analysis (stakeholder analysis), Meetings, Communication skills, interpersonal skills
To develop a Communications Management Plan to ensure the timely and effective communication between and among project stakeholders.	Expert Judgment, Communication requirements analysis, Communication technology, Communication methods, Interpersonal skills, Meetings, Project Management Information System, Project reporting
To develop a Schedule Management Plan to ensure the project activities are completed within the established and agreed upon timeline.	Expert Judgment, Data analysis, Meetings, Project Management Information System, Estimating technique, Critical path method, Agile release planning
To develop a Cost Management Plan to ensure the project costs are completed within the established and agreed upon budget.	Expert Judgment, Meetings, Data analysis, Estimating technique, PMIS, Financing
To develop a Quality Management Plan to identify and outline the quality parameters and necessary procedures to control quality and ensure the project deliverables meet stakeholder acceptance criteria.	Expert Judgment, Meetings, Data analysis, Inspection Planning, Quality improvement methods, Inspection, Testing/product evaluation

To develop a Resource Management Plan to outline clearly the project roles, responsibilities and needed skills and knowledge to successfully complete the project.	Expert Judgment, Meetings, Estimation technique, PMIS, Interpersonal and team skills, Communication technology Virtual teams
To develop a Procurement Management Plan to identify, acquire and control the external products, services and results needed for the project's success.	Expert Judgment, Meetings, Source selection analysis Inspection
To develop a Risk Management Plan that defines the project's risk identification, analysis, response, and monitoring and controlling.	Expert Judgment, Meetings, Data analysis (stakeholder analysis, SWOT analysis), Data gathering (brainstorming, checklists), Data representation (probability and impact matrix), Risk categorization, Strategies for threats, opportunities, PMIS.

3.4 Assumptions and constraints

Assumptions and constraints impact the planning and execution of projects and should be considered and managed during these phases. Both can impact project success and thus, their assessment and management should happen throughout the project.

PMI describes an assumption as "a factor in the planning process that is considered to be true, real, or certain, without proof or demonstration." (p. 699). A constraint, on the other hand, is "a limited factor that affects the execution of a project, portfolio, or process." (PMBOK® Guide, 2017, p. 701).

Chart 4: *Assumptions and constraints (Source: Author of Study)*

Objectives	Assumptions	Constraints
To develop a project charter to formally authorize the project and provide the Project Management with the authority to apply resources to the project activities.	Stakeholder participation is timely and information from similar projects can be sourced easily.	Limited time to complete the project.
To develop a Scope Management Plan to define the work which is needed to achieve the project deliverables.	The scope management plan will be developed, and project activities	Changes to the scope management plan could impact the project outcome.
To develop a Stakeholder Management Plan to identify, engage and manage the project stakeholders efficiently and effectively.	The stakeholder management plan and stakeholder list will be extensive and accurate.	Stakeholder requirements, level of engagement and interest may fluctuate during the project.
To develop a Communications Management Plan to ensure the timely and effective communication between and among project stakeholders.	Project communication between and among stakeholders will be effective and efficient.	Communication channels can be out of date or unavailable for some stakeholder.
To develop a Schedule Management Plan to ensure the project activities are completed within the established and agreed upon timeline.	The project schedule will be accurately estimated to allow for the completion of project activities	Project completion has to be within the scheduled time.
To develop a Cost Management Plan to ensure the project costs are completed within the established and agreed upon budget.	The project budget will be calculated accurately based on the scope.	Project costs remain within the agreed upon and allocated budget.

Objectives	Assumptions	Constraints
To develop a Quality Management Plan to identify and outline the quality parameters and necessary procedures to control quality and ensure the project deliverables meet stakeholder acceptance criteria.	Quality standards will be developed and used during testing and piloting of the product.	Final product meets the agreed upon stakeholder expectations and requirements.
To develop a Resource Management Plan to outline clearly the project roles, responsibilities and needed skills and knowledge to successfully complete the project.	The human and technical resources needed for the project will be available.	Delays to resource availability.
To develop a Procurement Management Plan to identify, acquire and control the external products, services and results needed for the project's success.	Documentation from similar projects can be found. Resources will be procured on time and within budget.	Delays in acquiring project resources may occur due to delays in the supply chain.
To develop a Risk Management Plan that defines the project's risk identification, analysis, response, and monitoring and controlling.	Enough information is available to identify, analyze and manage most foreseeable risks and opportunities.	Not all project risks are identified in the planning phase of the project.

3.5 Deliverables

According to the PMI (2017), a deliverable is "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." (p. 704).

Deliverables may either be tangible or intangible and produced because of the project. They meet a specific project requirement and can vary depending on the project. Examples of deliverables include reports, presentations, document, artifacts, change, software or information technology product, audio, or video materials.

For this FGP, the deliverable will take the form of documentation: a comprehensive project management plan and its subsidiary plans.

Chart 5: *Deliverables (Source Author of Study)*

Objectives	**Deliverables**
To develop a project charter to formally authorize the project and provide the Project Management with the authority to apply resources to the project activities.	Project Charter
To develop a Scope Management Plan to define the work which is needed to achieve the project deliverables.	Scope Management Plan, Work Breakdown Structure (WBS), WBS Dictionary, Project Deliverables
To develop a Stakeholder Management Plan to identify, engage and manage the project stakeholders efficiently and effectively.	Stakeholder Management Plan, Stakeholder Register

To develop a Communications Management Plan to ensure the timely and effective communication between and among project stakeholders.	Communications Management Plan, Communication Matrix
To develop a Schedule Management Plan to ensure the project activities are completed within the established and agreed upon timeline.	Schedule Management Plan, Project Schedule, Network Diagram Gantt Chart
To develop a Cost Management Plan to ensure the project costs are completed within the established and agreed upon budget.	Cost Management Plan, Cost Estimates, Project Budget
To develop a Quality Management Plan to identify and outline the quality parameters and necessary procedures to control quality and ensure the project deliverables meet stakeholder acceptance criteria.	Quality Management Plan, Quality Checklist
To develop a Resource Management Plan to outline clearly the project roles, responsibilities and needed skills and knowledge to successfully complete the project	Resource Management Plan
To develop a Procurement Management Plan to identify, acquire and control the external products, services and results needed for the project's success	Procurement Management Plan
To develop a Risk Management Plan that defines the project's risk identification, analysis, response, and monitoring and controlling.	Risk Management Plan, Risk Register

4 RESULTS

The development and use of a project management plan are critical to mitigating risks and increasing the chances of success for a project. Ten (10) subsidiary plans are included in the project management plan which outlines how the project is to be planned, executed, monitored, and controlled, and closed. It serves as a guide for the project team and ensures that key stakeholders have clear direction and a common understanding of the project's goals, objectives, and deliverables. Each plan is different and consists of specific and appropriate inputs, tools & techniques that are applied to produce outputs. These outputs inform the development of other plans and documents. While the PMBOK® Guide outlines best practices for project management, the plans described are tailored to meet the specific needs of this project.

The Environmental Education Through a Virtual Field Experience project management plan will consist of:

- Project Charter
- Scope Management Plan
- Stakeholder Management Plan
- Communication Management Plan
- Schedule Management Plan
- Cost Management Plan
- Quality Management Plan
- Resource Management Plan

- Procurement Management Plan
- Risk Management Plan

4.1 Project Charter

The development of the project charter is the first specific objective for the *Environmental Education through A Virtual Field Experience* project. It will be developed using brainstorming and expert judgment. The charter consists of basic project information including the project title, start and end date, sponsor and project manager name and the project purpose/justification, project goals/objectives, project deliverables, assumptions and constraints, high-level milestones and timelines, budget, stakeholders, and authorizations. As a high-level document, it is not exhaustive and will inform the development of other aspects of the project management plan. Chart 6 is a graphical depiction of the Project Charter that was developed.

Project Title	Environmental Education through A Virtual Field Experience		
Start Date	October 2nd, 2023	**End Date**	March 6th, 2024
Project Manager	Petal Trotman	**Organization**	The Common Loop
Sponsor	Nikeisa Adams	**Organization**	The Common Loop
Project Charter Version	**Version Number**	**Date (mm/dd/yyyy)**	**Comments**

1. Project Purpose/Justification

Every child should have the opportunity to explore and learn about the natural world in a way that sparks their curiosity and enriches their life. Unfortunately, due to economic, geographic, and other constraints, many children from underserved and vulnerable communities cannot take advantage of activities designed to cultivate an appreciation for the natural world.

This project seeks to provide an interactive and immersive virtual field experience (VFE) that allows children to explore and learn about the indigenous peoples, cultural and natural history, and biodiversity of one of the most beautiful and unique natural locations in Guyana, Kaieteur National Park. One of six (6) designated protected areas in Guyana, Kaieteur National Park is home to the tallest single-drop waterfall in the world, Kaieteur Falls, the Golden Frog, and the Guianan Cock-of-the-Rock, among others.

Working with subject matter experts across the environment, education, and accessibility sectors, this virtual field experience will be designed to be inclusive and accessible to all children from the target audience, regardless of their background or abilities.

VFE - Kaieteur National Park is one of several future virtual experiences to be developed and will be hosted on a created website and YouTube for viewing.

By providing children from underserved and vulnerable communities with access to environmental education, whether virtually or in-person, we can increase their environmental literacy, help them develop a deep appreciation for the natural world, and help them become the next generation of environmental stewards.

2. Project Goals/Objectives

2.1 General Objective

The general objective of the *Environmental Education Through a Virtual Field Experience* project is to create an interactive and immersive virtual field experience that enables children ages 7-12 years old from underserved and vulnerable communities in Guyana to explore and learn about the indigenous peoples, cultural and natural history, and biodiversity of the Kaieteur National Park.

2.2 Specific Objectives

The specific objectives of this project are as follows:

- To develop a virtual educational experience that is suited to children, culturally appropriate and scientifically sound.
- To engage local subject matter experts in education, conservation and natural resources management, special education, and technology to create and integrate appropriate learning resources.

- To collaborate with schools, orphanages and children's homes, youth groups and community groups to provide access the virtual environmental education field experience to at least 50 children from underserved and vulnerable communities in Guyana; and
- To assess the impact of a virtual field experience on the children's perspectives of and attitude toward the natural world.

3. Project Deliverables

Upon completion of the project, the following deliverables will be provided:

- A Virtual Field Experience Video
- Accompanying digital educational activity book

4. Assumptions and Constraints

The assumptions and constraints for this project are:

Assumptions

- Funding is approved for the execution of the project.
- There is sufficient interest and buy-in from direct and indirect project stakeholders.
- Content developed will be child and culturally appropriate and scientifically sound.
- Permits are approved for filming at Kaieteur National Park.

Constraints

- The project budget and time allotted is sufficient.
- Some members of the target audience may have reduced access to stable and reliable internet.
- Limited local technical expertise particularly within special education to adequately support the project.

5. High-Level Milestones and Timelines

Deliverable	Start Date	End Date
EE through a Virtual Field Experience	October 2nd, 2023	April 1st, 2024
Project Start	October 2nd, 2023	October 2nd, 2023
Develop Project Charter	October 2nd, 2023	October 6th, 2023
Kick Off Meeting	October 23rd, 2023	October 23rd, 2023
Content Production & Development	November 8th, 2023	January 16th, 2024
Testing and QA	January 17th, 2024	February 13th, 2024

Rollout & Launch	February 14th, 2024	February 20th, 2024
Project Evaluation Report	February 21st, 2024	March 6th, 2024
Project End	March 6th, 2024	March 6th, 2024

6. Project Budget
Estimated at US $25,000

7. Stakeholders	
Internal Stakeholders	Project Sponsor, Project Manager, Multimedia Content Producer, Director of Communications, Educators/Coordinators, Volunteers
External Stakeholders	Selected children ages 7-12 from regions 1-10, Ministry of Education, Protected Areas Commission, Parents and guardians of participating children, Environmental Protection Agency Guyana (EPA Guyana), Ministry of Tourism, Teachers at partner schools and organizations, Local Subject Matter Experts

8. Project Authorization		
Approved by:	**Sponsor:** Nikeisa Adams **Signature:**	**Date**
Approved by:	**Project Manager:** Petal Trotman **Signature:**	**Date**

Chart 6: *Project Charter (Source Author of Study)*

4.2 Scope Management Plan

4.2.1 Introduction

Scope Management (2.2.7) includes six processes for ensuring all the project work is completed on time and within budget. The Scope Management Plan outlines the processes to be used during the *Environmental Education through A Virtual Field Experience* project to be completed by The Common Loop. This plan outlines the role and responsibilities of the stakeholders within the scope management process, the scope definition, the Work Breakdown Structure, the WBS dictionary, and the process for validating and controlling the project scope. Because of the nature of the project, it will follow a hybrid approach to project management. Parts of the project will follow the traditional/waterfall approach, and others will adhere to an iterative approach. This is best suited for this type of project and allows the Project Manager and team to manage the project successfully.

The general objective of the *Environmental Education Through a Virtual Field Experience* project is to create an interactive and immersive virtual field experience that enables children ages 7-12 years old from underserved and vulnerable communities in Guyana to explore and learn about the indigenous peoples, cultural and natural history, and biodiversity of the Kaieteur National Park.

4.2.2 Roles and Responsibilities

Chart 7 below outlines the roles and responsibilities for the project's scope management. The team is responsible for ensuring that the project stays within its predetermined parameters, including the required timeline and budget. They are also responsible for ensuring that the project meets the desired outcomes and objectives. It is, therefore, important that the roles and responsibilities of each team member is clearly defined and understood.

Chart 7: *Scope Management Roles and Responsibilities (Source Author of Study)*

Role	Responsibility
Project Sponsor	• Approves Project Charter. • Accepts project deliverables. • Evaluates and approves/denies scope changes. • Approve Scope Management Plan.
Project Manager	• Responsible for overall Project management and execution. • Facilitates and communicates scope change requests. • Updates project documents upon approval of change requests.
Educator/Coordinator	• Proposes scope changes. • Executes approved scope changes.
Director of Communications	• Proposes scope changes. • Executes approved scope changes.
Multimedia Content Production	• Proposes scope changes. • Executes approve scope changes.

4.2.3 Definition of Scope

The development of the project scope is the responsibility of the Project Manager who works in close collaboration with the project team and other key stakeholders to identify and collect the project requirements. Through an analysis of the current market landscape and needs, the specific requirements for the project were obtained and used to develop a comprehensive scope statement.

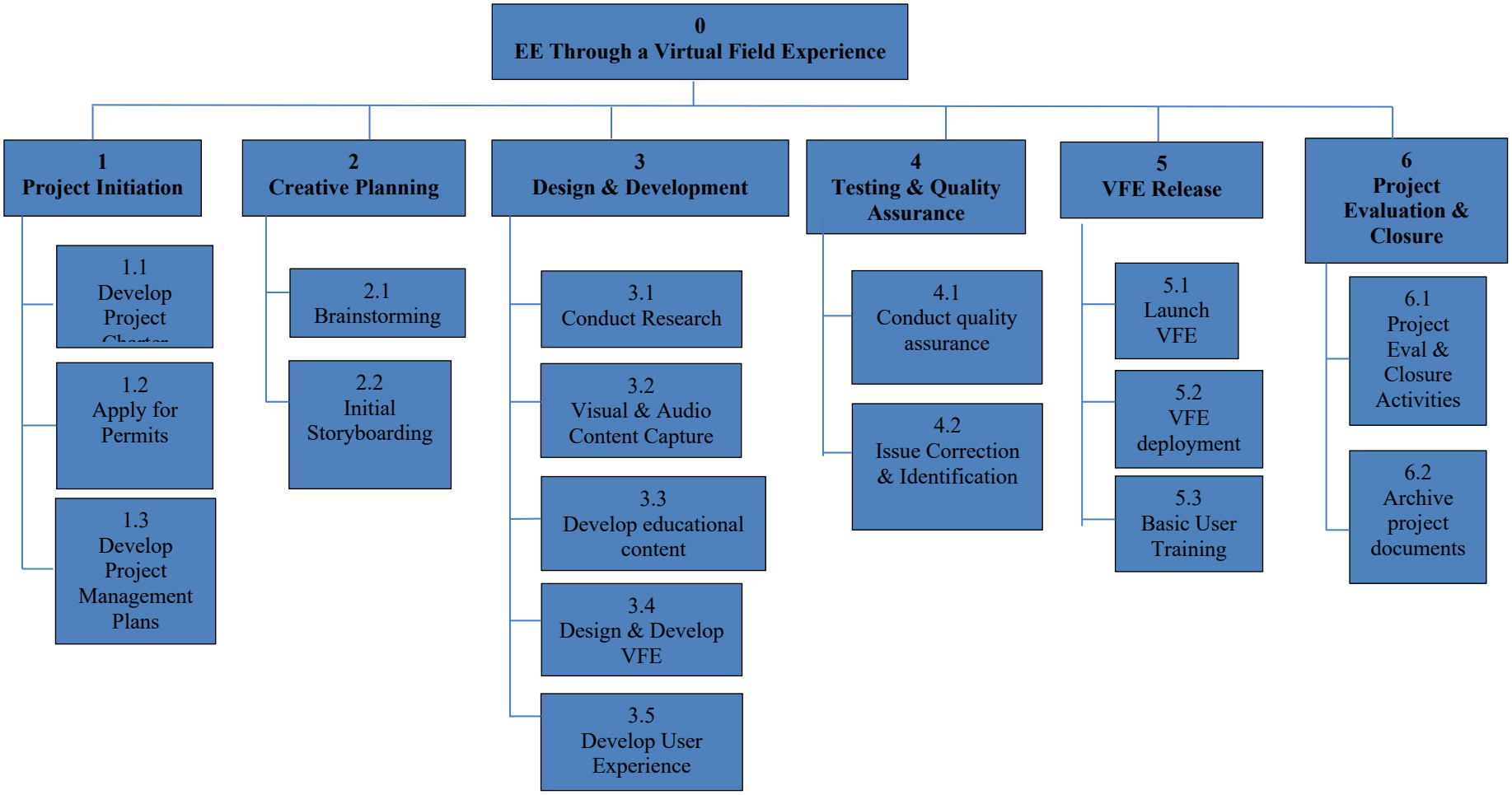
4.2.3.1.1 Scope Statement

The scope of this project will consist of the development of an interactive and immersive virtual field experience that enables children ages 7-12 years old from underserved and vulnerable communities in Guyana to explore and learn about the indigenous peoples, cultural and natural history, and biodiversity of the Kaieteur National Park.

The deliverables of the Project are one produced Virtual Field Experience video and an accompanying activity handbook. The Project does not include an assessment of the Virtual Field Trip's impact on student behavior and attitudes toward the natural world.

4.2.4 Work Breakdown Structure

Figure 4: *Work Breakdown Structure (Source Author of Study)*



4.2.5 WBS Dictionary

Chart 8: *Work Breakdown Structure Dictionary (Source Author of Study)*

WBS Code	Task Name	Task Description	Deliverables	Committed Resources
1	**Project Management**			
1.1	Develop Project Charter	Define the Project goals and objectives, justification, deliverables, initial budget, assumptions and constraints, high-level risks, and milestones	Project Charter	Laptop, Articles, and relevant literature
1.2	Apply for Permits	Apply for required permits to complete the project	EPA Permit, PAC Permit	Laptop, Articles, and relevant literature
1.3	Develop Project Management Plans	Create 9 subsidiary Project management plans to guide the Project team.	Subsidiary Plans	Laptop, Articles, and relevant literature
2	**Creative Planning**			
2.1	Brainstorming	Conduct brainstorming session to identify project's creative and educational direction		Laptop, Flipchart
2.2	Initial Storyboarding	Create storyboard to define and visualize the project's creative and educational direction	Mind map	Laptop, Digital or physical whiteboard
3	**Design & Development**			
3.1	Conduct Research	Conduct research on the location to gather pertinent cultural, historical, population and biodiversity information		Laptop, Articles, and relevant literature

3.2	Visual & Audio Content Capture	Capture the visual and audio assets to be used in the VFE	Visual and audio assets	Recording equipment, Laptop, External hard drive
3.3	Develop educational content	Develop educational content that is scientifically sound, culturally appropriate, and age-appropriate	Educational content	Laptop, Articles, and relevant literature
3.4	Design & Develop VTE	Design and develop an interactive. engaging and accessible VFE for children ages 7-12 years old	VFE video and activity book	Adobe Suite, Laptop
3.5	Develop User Experience	Ensure video is accessible, intuitive, mobile-friendly, and vibrant. Ensure user experience is excellent		Laptop, Mobile Device
4	**Testing & Quality Assurance**			
4.1	Conduct quality assurance	Conduct quality assurance according to quality standard established in the Quality Management Plan		Laptop, Mobile Device
4.2	Issue correction & identification	Correct any technical or content issues discovered during testing		Laptop
5	**VFE Release/Launch**			
5.1	Launch VFE	Host launch event to introduce the public to the VFE and raise awareness		Laptop, Zoom, Marketing assets
5.2	VFE Deployment	Share finalized VFE with target audience		Laptop, Thumb drives, CDs
5.3	**Basic User Training**	Provide basic training for target audience on how to navigate the VFE		Laptop
6	**Project Evaluation & Closure**			
6.1	Conduct project closure and evaluation activities	Conduct all necessary activities to evaluate and close out the project. Ensure all remaining contract payments are fulfilled.	Project Reports, Lessons Learned document	Laptop

6.2	Archive project documents	Store all project documents		Laptop, Thumb drive

4.2.6 Deliverable Validation and Acceptance

The project has four (4) deliverables. Two are direct deliverables/products and the remaining two are project reports. These are: 1.) a Virtual Field Experience Video, 2.) an accompanying digital educational activity book, 3.) an impact assessment report on the project, and 4.) a project evaluation report.

Before a final handover and release of the deliverables, the project team will conduct user experience and content accuracy testing during the Testing Phase of the project to ensure and assure product quality. This will include completing the associated Quality Assurance checklist and making any improvements needed to achieve the quality standard. Once quality is assured, the team will submit the deliverables to the Project Sponsor for a final review. If changes are necessary, the Project Sponsor will communicate this with the Project Manager, who will then inform the project team. Work will continue until such time that the expectation of the Sponsor is met. If the Sponsor accepts the deliverables, it will be released to the public for use. The deliverables will be reviewed and accepted in accordance with the below acceptance criteria.

Chart 9: *Project Deliverables (Source Author of Study)*

No.	Deliverable	Acceptance Criteria	Responsible Party
1.	Virtual Field Experience Video	• A high-resolution, interactive video that is at most 35 minutes long. • Video is kid-friendly, culturally appropriate, and scientifically sound. • Video is an accompanying transcript. • Video is closed captioned. • Fonts and colors used are readable. • Audio is clear and high-quality. • Speakers are appropriately lit and captured clearly. • Follows ADA guidelines	Vendor/Multimedia Content Production
2.	Accompanying digital educational activity book	• Activities are kid-friendly, culturally appropriate, and scientifically sound. • Activities reflect content in video. • Activities test competency versus memorization. • Activity book can be downloaded, if needed.	Project Manager/Subject Matter Expert

4.2.7 Control Scope

It is the responsibility of the Project Manager and the project team members to ensure that the project's scope is managed and controlled. Any requests for changes to the scope will be submitted to and reviewed by the Project Manager. These change requests will be recorded in the project's change request document. Following an initial analysis, the Project Manager will recommend a course of action to the Project Sponsor for consideration. This

recommendation will include the reason for the change and an assessment of the financial and/or schedule impacts of the change. The Project Sponsor will decide whether to approve, reject or modify the change request. If the change request is approved, the Project Manager will update all project documents and communicate this change to all project team members and stakeholders at the earliest possible time. The change will then be implemented. If denied, the Project Manager will communicate same to the requestor, and the scope document will remain unchanged.

4.3 Stakeholder Management Plan

4.3.1 Introduction

Within stakeholder management (2.2.7), there are four (4) processes that are required to identify the stakeholders, analyze their expectations and impact on the project, and how to effectively engage them. Each of these processes has its associated inputs, tools and techniques and outputs that ensure stakeholders are managed efficiently and effectively.

For the “Environmental Education through a Virtual Field Experience” project, stakeholder management and engagement are of utmost importance, given the nature of the project and its objectives. It is important that the project manager and project team include all direct and indirect stakeholders in the planning and execution phases to ensure that stakeholder expectation is met.

4.3.2 Stakeholder Identification

Identifying stakeholders allows the project team to document who could affect or be affected by the project. It provides a solid foundation for a comprehensive stakeholder analysis. The project team will use expert judgment and meetings to identify the project’s direct and indirect stakeholders. Additionally, their impact, expectations, interest, and influence will be determined. The Project Manager is responsible for leading the stakeholder identification process.

Upon completion of this process, a stakeholder register will be created, as demonstrated in Chart 10 below. Accompanying the stakeholder register is a stakeholders' power/influence matrix.

Chart 10: *Stakeholder Register (Source: Author of Study)*

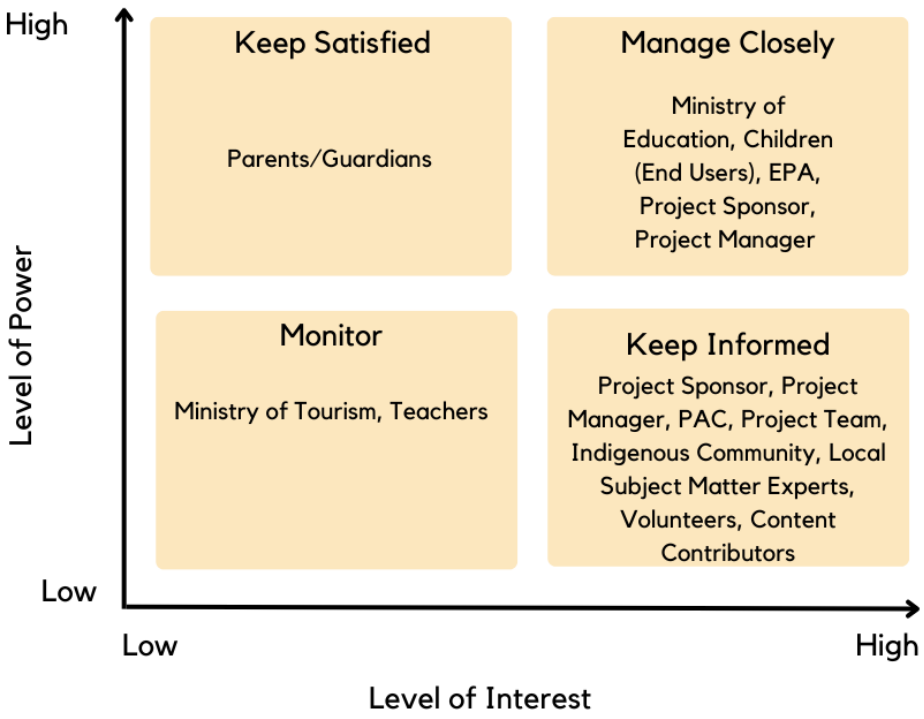
Stakeholder	Project Role	Internal/External	Impact	Influence	Communication
Nikeisa Adams	Project Sponsor	Internal	High	High	Email, Telephone, Face-to-Face
Petal Trotman	Project Manager	Internal	High	High	Email, Telephone, Face-to-Face
Educators/Coordinators	Project team	Internal	High	High	Email, Telephone, Face-to-Face
Director of Communications	Project team	Internal	High	High	Email, Telephone, Face-to-Face
Multimedia Content Producer	Contractor/Project team	Internal	High	High	Email, Telephone, Face-to-Face
Volunteers	Project team	Internal	High	High	Email, Telephone, Face-to-Face
Indigenous community	Subject Matter Expert	External	High	Low	Email, Telephone, Face-to-Face
Children (ages 7-12)	End user	External	Medium	Medium	Face-to-face
Parents & guardians	Parents/Guardian	External	Medium	Medium	Email, Telephone, Face-to-Face

Teachers	Teachers	External	Medium	Medium	Email, Telephone, Face-to-Face
Ministry of Education	Project Partner	External	Medium	Medium	Face-to-Face
Protected Areas Commission	Permitting agency/Subject Matter Expert	External	High	High	Email, Telephone, Face-to-Face
Environmental Protection Agency Guyana (EPA Guyana)	Permitting agency	External	Medium	High	Email, Face-to-Face
Ministry of Tourism	Project Partner	External	Low	Low	Email, Telephone, Face-to-face
Local Subject Matter Experts	Contractor	External	Medium	High	Email, Telephone, Face-to-Face
Content Contributors	Content Contributor	External	Medium	High	Email, Telephone, Face-to-Face

4.3.3 Stakeholder Management

To manage stakeholders appropriately, the project team will utilize the power/influence matrix outlined in Figure 6. The power/influence matrix will help the project manager and project team to identify and prioritize the project's stakeholders based on who needs to be kept informed, managed closely, kept satisfied, and monitored.

Figure 5: *Power/Interest Matrix (Source: Author of Study)*



4.4 Communication Management Plan

4.4.1 Introduction

To ensure the seamless flow of project information between and among stakeholders, a comprehensive communication management plan will be established. There are three (3) processes within project communications management (2.2.7) that ensure this seamless flow of information.

The communication management plan will be a living document and will be updated throughout the project as needed. It will detail and draw information from the stakeholder list, their communication needs, the communication channels, the frequency of communications, and the roles and responsibilities of the project team for communication. Together, the information contained in this communication management plan will ensure that all project stakeholders are kept informed of the project's progress and that any potential risks or issues are communicated properly.

4.4.2 Communication Management Approach

The Project Manager will be responsible for ensuring the effective and efficient communication flow between and among the project stakeholders. This includes all aspects of stakeholder communication needs identification, appropriate channel, tools, and frequency. Additionally, the Project Manager will manage, approve, and communicate any changes needed to this communication management plan.

Communications will be monitored throughout the project to ensure that the planned communications and the information needs of the project and its stakeholders have been met. This process will identify any changes that need to be made to improve project communication between and among stakeholders.

4.4.3 Communication Methods and Technologies

In collaboration with the project team, the Project Manager will determine the communication methods and technologies to be used during the project. They will consider the availability and reliability of technology, ease of use, the sensitivity and confidentiality of the information to be communicated, and the urgency of the need for information. Daily Meetings, Team Meetings (as necessary), Bi-weekly Project Status Reports, and Monthly Project Update Meetings will be methods of communication used for this project. The communication technology to be used are email, virtual/in-person meetings, and ClickUp Project Management Tool.

4.4.4 Communication Matrix

The Communication Matrix below (Chart 11) outlines the key stakeholders of the project, their role within the project, their communication needs, channel, and frequency. This matrix is to be used as a guide to ensure that all stakeholders are kept informed of the project's progress and any changes to the plan. Further, as a tool, it is to be used to build relationships with stakeholders and gain buy-in for the project.

Chart 11 : *Communication Matrix (Source: Author of Study)*

Stakeholder	Project Role	Communication Needs	Communication Channel	Communication Frequency
Nikeisa Adams	Project Sponsor	Project updates	Email, Telephone, Face-to-Face	Monthly by email, telephone for emergencies, and face-to-face as needed for meetings
Petal Trotman	Project Manager	Project progress	Email, Telephone, Face-to-Face	Weekly face-to-face status updates, reports via email, telephone as needed
Educators/Coordinators	Project team	Content development and project support	Email, Telephone, Face-to-Face	Daily by email, Telephone and face-to-face as needed for meetings
Director of Communications	Project team	Internal/External Communication	Email, Telephone, Face-to-Face	Daily by email, as needed by telephone and face-to-face
Multimedia Content Producer	Contractor/Project team	Content Development	Email, Telephone, Face-to-Face	Daily by email, telephone and face-to-face for meetings as needed
Volunteers	Project team	Project support	Email, Telephone, Face-to-Face	Daily by email, as needed by telephone and face-to-face

Indigenous community	Subject Matter Expert	Collaboration, knowledge and insights, project updates	Email, Telephone, Face-to-Face	As needed by email, telephone of face-to-face
Children (ages 7-12)	End user	Access to the virtual field experience	Face-to-Face, Website	As needed by face-to-face
Parents & guardians	Parents/Guardian	Project updates	Email, Telephone, Face-to-Face	As needed by email
Teachers	Teachers	Curriculum integration	Email, Telephone, Face-to-Face	As needed by email
Ministry of Education	Project Partner	Educational support	Face-to-Face	As needed by email
Protected Areas Commission	Permitting agency/Subject Matter Expert	Conservation expertise and compliance	Email, Telephone, Face-to-Face	As needed by email
Environmental Protection Agency Guyana (EPA Guyana)	Permitting agency	Compliance	Email, Face-to-Face	As needed by email or telephone
Ministry of Tourism	Project Partner	Collaboration	Email, Face-to-Face	As needed by email
Local Subject Matter Experts	Contractor	Knowledge and insights	Email, Telephone, Face-to-Face	Daily by email or face-to-face/telephone meeting
Content Contributor	Content Contributor	Knowledge and insights	Email, Telephone, Face-to-Face	Daily by email or face-to-face/telephone meeting

4.5 Schedule Management Plan

4.5.1 Introduction

The schedule management plan, a key document within the project management plan, will detail the approach and best practices to effectively and efficiently develop, manage and control the “Environmental Education through a Virtual Field Experience” project schedule and ensure an on time start and finish. The Project Manager will be responsible for developing the schedule management plan and using the Project Charter, Scope Management Plan, and WBS for guidance during this process, in addition to meetings and discussions with key stakeholders. This plan will include a project network diagram and a Gantt chart developed using the Project Plan 365 software.

It is important to note that this project requires permit approvals from the Environmental Protection Agency and the Protected Areas Commission. These will be acquired prior to the start of the project.

4.5.2 Roles and Responsibilities

It is vital that the Project Manager, project team, and all relevant stakeholders understand their individual and collective roles and responsibilities in planning, coordinating, and controlling the project schedule. Chart 12 outlines these roles and responsibilities.

Chart 12: *Roles and Responsibilities – Schedule Management (Source: Author of Study)*

Role	Responsibility
Project Sponsor	• Reviews proposed schedule. • Approves final schedule.
Project Manager	• Overall responsibility for the project's Schedule management including Schedule development, activity sequencing, etc. • Maintains Project schedule. • Updates schedule as needed.
Project Team	• Assists with schedule development by proving input and estimates for task durations and dependencies. • Reviews and validates project schedule. • Performs tasks according to the agreed upon schedule.

4.5.3 Schedule Development

The project schedule will be created and managed using Project Plan 365 based on information detailed in the Scope Management Plan and Work Breakdown Structure (WBS). Activities identified under Level 2 will then be used to identify the logical order of specific tasks/activities that must be performed to complete each deliverable. In activity sequencing, dependencies between tasks will also be identified. By properly sequencing activities, the Project Manager can identify the critical path of the project, optimize resources, minimize project delays, and ensure that the project work flows smoothly. The project Manager and team will take into consideration resource availability and historical data to estimate the duration for each activity. The Major Project Milestones are indicated in the Project Charter (Chart 6).

For this project, the schedule starts with the development and approval of the Project Charter. The relevant permits will be acquired in conjunction with the development of the Project Charter. Two types of dependencies will be present throughout the project, given its nature; these are finish-to-start and start-to-start relationships. Chart 13 presents the Activity Sequence and Duration Estimation for the project. Figure 6 presents this information in Gantt Chart format and depicts the project milestones.

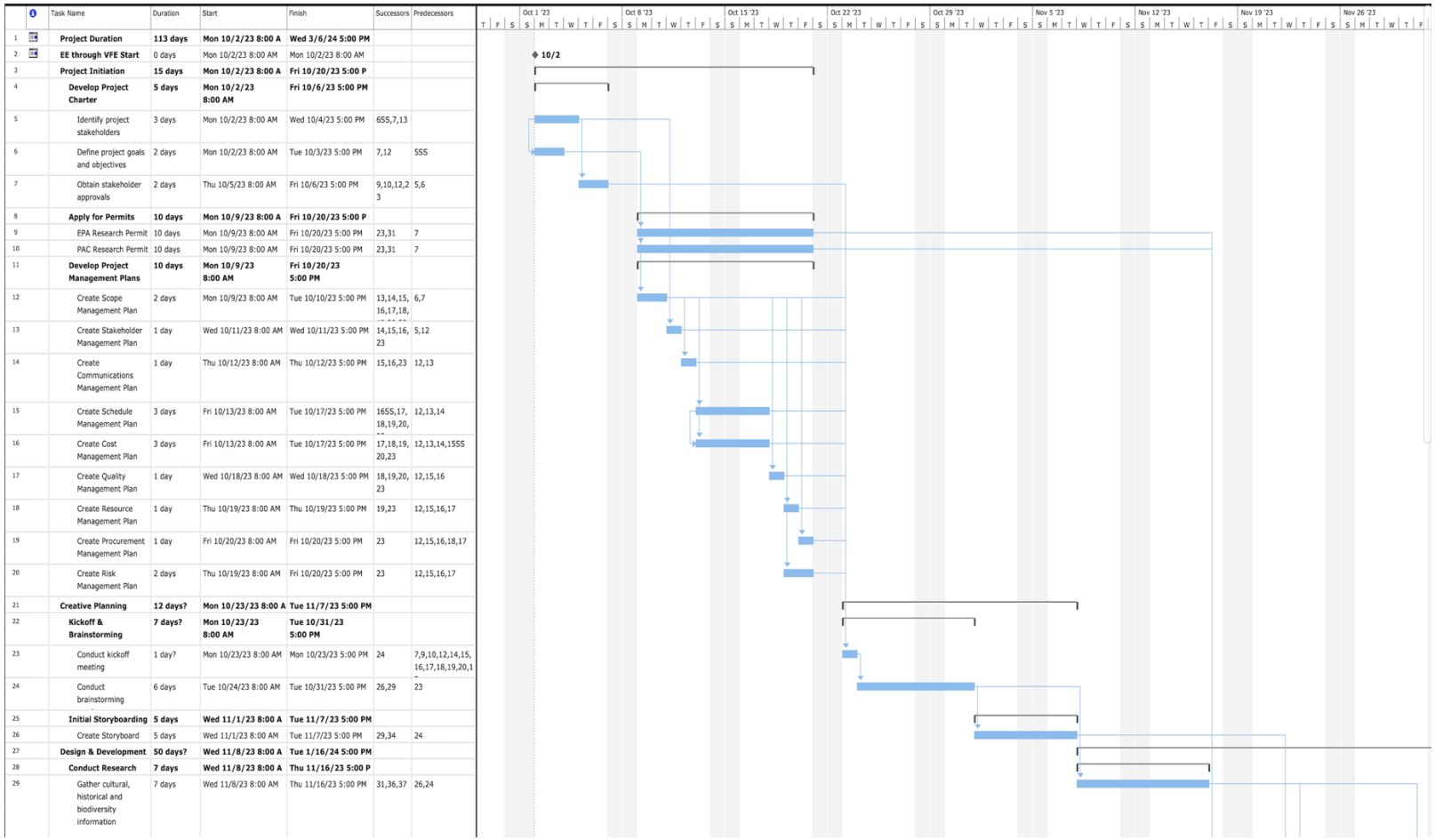
Chart 13: *Activity Sequence and Duration Estimation (Source: Author of Study)*

WBS Code	Task Name	Duration (days)
1	**Project Initiation**	
1.1	Develop Project Charter	
1.1.1	Identify project stakeholders	3
1.1.2	Define project goals and objectives	2
1.1.3	Obtain stakeholder approvals	2
1.2	Apply for permits	
1.2.1	EPA Research Permit	10
1.2.2	PAC Research Permit	10
1.3	Develop Project Management Plans	
1.3.1	Create Scope Management Plan	2
1.3.2	Create Stakeholder Management Plan	1
1.3.3	Create Communications Management Plan	1
1.3.4	Create Schedule Management Plan	3
1.3.5	Create Cost Management Plan	3
1.3.7	Create Quality Management Plan	1
1.3.8	Create Resource Management Plan	1
1.3.9	Create Procurement Management Plan	1
1.3.10	Create Risk Management Plan	2
2	**Creative Planning**	
2.1	Kickoff and Brainstorming	
2.1.1	Conduct kickoff meeting	1
2.1.2	Conduct brainstorming session	6
2.2	Initial storyboarding	

2.2.1	Create project storyboard	5
3	**Design and Development**	
3.1	Conduct Research	
3.1.1	Gather cultural, historical and biodiversity information	7
3.2	Visual & Audio Content Capture	
3.2.1	Capture visual and audio assets	3
3.2.2	Store assets on external hard drive for processing	1
3.3	Develop Educational Content	
3.1.1	Create scientifically sound, culturally appropriate, and age-appropriate educational content	7
3.4	Design and Develop VFE	
3.4.1	Design interactive and accessible VFE video	30
3.4.2	Design interactive VFE accompanying activity book	30
3.5	Develop User Experience	
3.5.1	Ensure VFE is accessible and mobile-friendly	3
3.5.2	Focus on quality user experience	3
4	**Testing and Quality Assurance**	
4.1	Conduct Quality Assurance	
4.1.1	Perform QA activities	3
4.2.2	Conduct User Testing	7
4.2	Issue Identification & Correction	
4.3.1	Correct technical or content issues identified during testing	7
4.3.2	Perform second round of QA	3
5	**VFE Release and Launch**	
5.1	Launch VFE	
5.1.1	Host launch event	1
5.2	VFE Deployment	
5.2.1	Share finalized VFE with target audience	2
5.3	Basic User Training	
5.3.1	Provide basic training on navigating the VFE	2

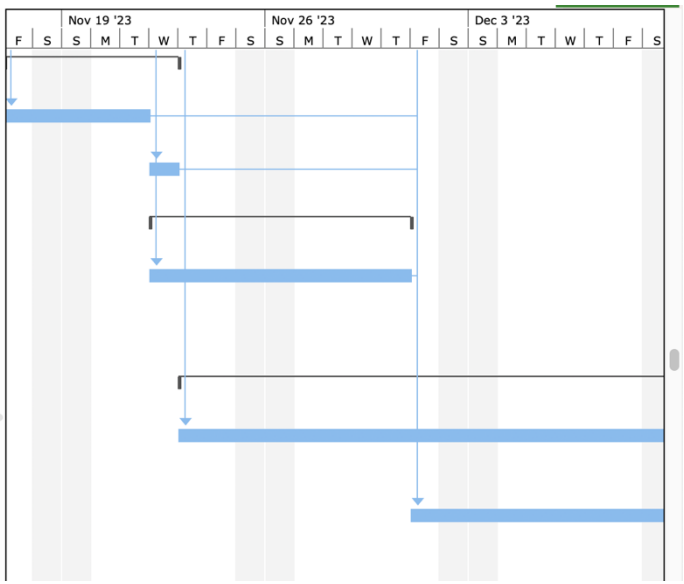
6	**Project Evaluation and Closure**	
6.1	Project evaluation and closure activities	
6.1.1	Document lessons learned	2
6.1.2	Ensure contract and payment completion	7
6.1.3	Produce reports	7
6..2	Archive project documents	
6.2.1	Store all project documents	2

Figure 6: *Sample Project Schedule in Gantt Chart format (Source: Author of Study)*

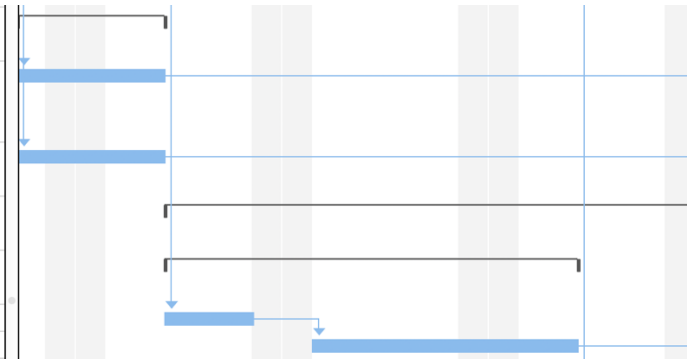


	Task Name	Duration	Start	Finish	Successors	Predecessors
1	**Project Duration**	**113 days**	**Mon 10/2/23 8:00 A**	**Wed 3/6/24 5:00 PM**		
2	**EE through VFE Start**	0 days	Mon 10/2/23 8:00 AM	Mon 10/2/23 8:00 AM		
3	**Project Initiation**	**15 days**	**Mon 10/2/23 8:00 A**	**Fri 10/20/23 5:00 P**		
4	**Develop Project Charter**	**5 days**	**Mon 10/2/23 8:00 AM**	**Fri 10/6/23 5:00 PM**		
5	Identify project stakeholders	3 days	Mon 10/2/23 8:00 AM	Wed 10/4/23 5:00 PM	6SS,7,13	
6	Define project goals and objectives	2 days	Mon 10/2/23 8:00 AM	Tue 10/3/23 5:00 PM	7,12	5SS
7	Obtain stakeholder approvals	2 days	Thu 10/5/23 8:00 AM	Fri 10/6/23 5:00 PM	9,10,12,23	5,6
8	**Apply for Permits**	**10 days**	**Mon 10/9/23 8:00 A**	**Fri 10/20/23 5:00 P**		
9	EPA Research Permit	10 days	Mon 10/9/23 8:00 AM	Fri 10/20/23 5:00 PM	23,31	7
10	PAC Research Permit	10 days	Mon 10/9/23 8:00 AM	Fri 10/20/23 5:00 PM	23,31	7
11	**Develop Project Management Plans**	**10 days**	**Mon 10/9/23 8:00 AM**	**Fri 10/20/23 5:00 PM**		
12	Create Scope Management Plan	2 days	Mon 10/9/23 8:00 AM	Tue 10/10/23 5:00 PM	13,14,15,16,17,18,	6,7
13	Create Stakeholder Management Plan	1 day	Wed 10/11/23 8:00 AM	Wed 10/11/23 5:00 PM	14,15,16,23	5,12
14	Create Communications Management Plan	1 day	Thu 10/12/23 8:00 AM	Thu 10/12/23 5:00 PM	15,16,23	12,13
15	Create Schedule Management Plan	3 days	Fri 10/13/23 8:00 AM	Tue 10/17/23 5:00 PM	16SS,17,18,19,20,	12,13,14
16	Create Cost Management Plan	3 days	Fri 10/13/23 8:00 AM	Tue 10/17/23 5:00 PM	17,18,19,20,23	12,13,14,15SS
17	Create Quality Management Plan	1 day	Wed 10/18/23 8:00 AM	Wed 10/18/23 5:00 PM	18,19,20,23	12,15,16
18	Create Resource Management Plan	1 day	Thu 10/19/23 8:00 AM	Thu 10/19/23 5:00 PM	19,23	12,15,16,17
19	Create Procurement Management Plan	1 day	Fri 10/20/23 8:00 AM	Fri 10/20/23 5:00 PM	23	12,15,16,18,17
20	Create Risk Management Plan	2 days	Thu 10/19/23 8:00 AM	Fri 10/20/23 5:00 PM	23	12,15,16,17
21	**Creative Planning**	**12 days?**	**Mon 10/23/23 8:00 A**	**Tue 11/7/23 5:00 PM**		
22	**Kickoff & Brainstorming**	**7 days?**	**Mon 10/23/23 8:00 AM**	**Tue 10/31/23 5:00 PM**		
23	Conduct kickoff meeting	1 day?	Mon 10/23/23 8:00 AM	Mon 10/23/23 5:00 PM	24	7,9,10,12,14,15,16,17,18,19,20,1
24	Conduct brainstorming	6 days	Tue 10/24/23 8:00 AM	Tue 10/31/23 5:00 PM	26,29	23
25	**Initial Storyboarding**	**5 days**	**Wed 11/1/23 8:00 A**	**Tue 11/7/23 5:00 PM**		
26	Create Storyboard	5 days	Wed 11/1/23 8:00 AM	Tue 11/7/23 5:00 PM	29,34	24
27	**Design & Development**	**50 days?**	**Wed 11/8/23 8:00 A**	**Tue 1/16/24 5:00 PM**		
28	**Conduct Research**	**7 days**	**Wed 11/8/23 8:00 A**	**Thu 11/16/23 5:00 P**		
29	Gather cultural, historical and biodiversity information	7 days	Wed 11/8/23 8:00 AM	Thu 11/16/23 5:00 PM	31,36,37	26,24

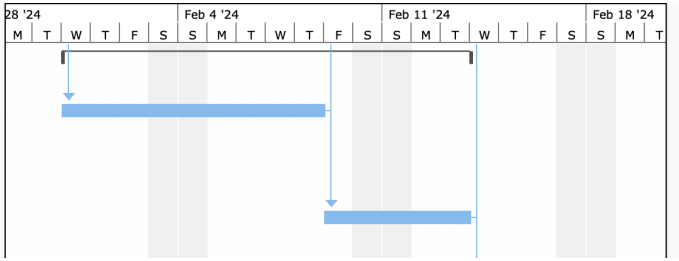
	Task Name	Duration	Start	Finish	Successors	Predecessors
30	**Visual & Audio content capture**	**4 days?**	**Fri 11/17/23 8:00 AM**	**Wed 11/22/23 5:00 PM**		
31	Capture visual and audio assets	3 days	Fri 11/17/23 8:00 AM	Tue 11/21/23 5:00 PM	32,34,36,37	9,10,29
32	Store assets on external harddrive	1 day?	Wed 11/22/23 8:00 AM	Wed 11/22/23 5:00 PM	36,37	31
33	**Develop Educational**	**7 days**	**Wed 11/22/23 8:00 AM**	**Thu 11/30/23 5:00 PM**		
34	Create scientifically sound, culturally appropriate and age appropriate	7 days	Wed 11/22/23 8:00 AM	Thu 11/30/23 5:00 PM	37	26,31
35	**Design and Develop VFE**	**36 days**	**Thu 11/23/23 8:00 AM**	**Thu 1/11/24 5:00 PM**		
36	Design interactive and accessible VFE video	30 days	Thu 11/23/23 8:00 AM	Wed 1/3/24 5:00 PM	39,40,43,46	29,31,32
37	Design interactive VFE accompanying activity book	30 days	Fri 12/1/23 8:00 AM	Thu 1/11/24 5:00 PM	39,40,43,46	29,31,32,34



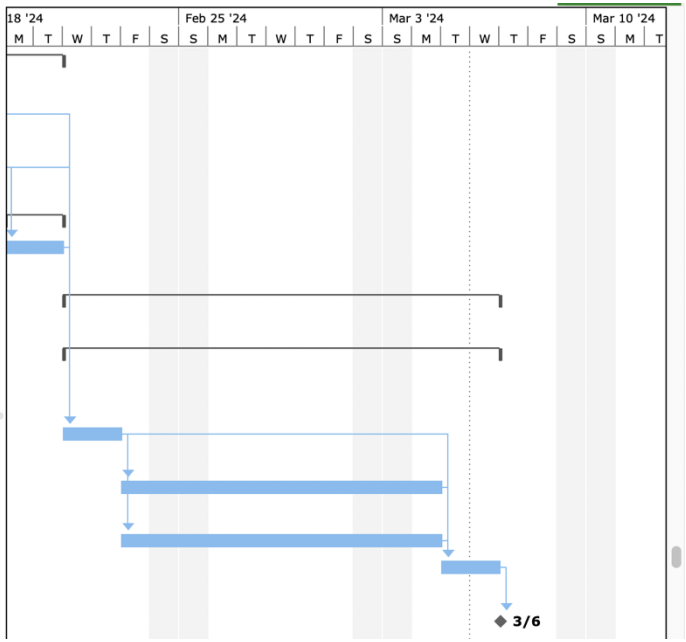
38	**Develop User Experience**	**3 days**	**Fri 1/12/24 8:00 AM**	**Tue 1/16/24 5:00 PM**		
39	Ensure VFE is accessible and mobile-friendly	3 days	Fri 1/12/24 8:00 AM	Tue 1/16/24 5:00 PM	43,46,50	36,37
40	Focus on quality user experience	3 days	Fri 1/12/24 8:00 AM	Tue 1/16/24 5:00 PM	43,46,50	36,37
41	**Testing and Quality Assurance**	**20 days**	**Wed 1/17/24 8:00 AM**	**Tue 2/13/24 5:00 PM**		
42	**Conduct Quality Assurance**	**10 days**	**Wed 1/17/24 8:00 AM**	**Tue 1/30/24 5:00 PM**		
43	Perform QA activiti	3 days	Wed 1/17/24 8:00 AM	Fri 1/19/24 5:00 PM	44	36,37,39,40
44	Conduct User Testi	7 days	Mon 1/22/24 8:00 AM	Tue 1/30/24 5:00 PM	46,47	43



	Task Name	Duration	Start	Finish	Successors	Predecessors
45	**Issue Identification & Correction**	**10 days**	**Wed 1/31/24 8:00 AM**	**Tue 2/13/24 5:00 PM**		
46	Correct technical or content issues identified during testing	7 days	Wed 1/31/24 8:00 AM	Thu 2/8/24 5:00 PM	47	36,37,39,40,44
47	Perform second round of QA	3 days	Fri 2/9/24 8:00 AM	Tue 2/13/24 5:00 PM	50	44,46



	Task Name	Duration	Start	Finish	Successors	Predecessors
48	**VFE Release and Laun**	**5 days?**	**Wed 2/14/24 8:00**	**Tue 2/20/24 5:00 P**		
49	**Launch VFE**	**1 day?**	**Wed 2/14/24 8:00**	**Wed 2/14/24 5:00**		
50	Host launch event	1 day?	Wed 2/14/24 8:00 AM	Wed 2/14/24 5:00 PM	52,57	39,40,47
51	**VFE Deployment**	**2 days**	**Thu 2/15/24 8:00 A**	**Fri 2/16/24 5:00 P**		
52	Share finalized VFE with target	2 days	Thu 2/15/24 8:00 AM	Fri 2/16/24 5:00 PM	54,57	50
53	**Basic User Training**	**2 days**	**Mon 2/19/24 8:00**	**Tue 2/20/24 5:00 P**		
54	Provide basic training on	2 days	Mon 2/19/24 8:00 AM	Tue 2/20/24 5:00 PM	57	52
55	**Project Evaluation & Closure**	**11 days**	**Wed 2/21/24 8:00 AM**	**Wed 3/6/24 5:00 PM**		
56	**Conduct project evaluation & closure activities**	**11 days**	**Wed 2/21/24 8:00 AM**	**Wed 3/6/24 5:00 PM**		
57	Document lessons learned	2 days	Wed 2/21/24 8:00 AM	Thu 2/22/24 5:00 PM	58,59,60	50,52,54
58	Ensure contract and payment	7 days	Fri 2/23/24 8:00 AM	Mon 3/4/24 5:00 PM	60	57
59	Produce reports	7 days	Fri 2/23/24 8:00 AM	Mon 3/4/24 5:00 PM	60	57
60	Archive Project documents	2 days	Tue 3/5/24 8:00 AM	Wed 3/6/24 5:00 PM	61	57,58,59
61	**EE through VFE EN**	0 days	Wed 3/6/24 5:00 PM	Wed 3/6/24 5:00 PM		60



4.5.4 Schedule Control

The Project Manager will monitor the schedule performance throughout the project lifecycle and updates will be made on a bi-weekly basis to reflect the actual progress and any changes. Deviations from the schedule baseline will be identified, analyzed, and appropriate corrective actions will be taken to bring the project back on track. If a change to the schedule is proposed, the Project Manager and project team will meet to review and evaluate the change and its impacts. Once a full analysis is completed and deemed necessary, the change will be subjected to the project's change control process. The project team will be informed of any approved changes and their roles in addressing the changes.

4.6 Cost Management Plan

4.6.1 Introduction

Cost Management enables the project manager to develop a realistic budget, track the project costs, identify any variances, and make informed decisions about utilization of financial resources. The Cost Management Plan, an output of the cost management process group, outlines the strategies and procedures that will be used to plan, estimate, control, track, and report project costs. This plan ensures the effective financial management of the monetary resources throughout the lifecycle of the project. It will be developed and managed by the Project Manager and is to be reviewed and updated continuously throughout the project to account for any changes, address risks and facilitate proactive cost control and decision-making.

4.6.2 Roles and Responsibilities

To properly plan cost management, estimate costs, develop the project budget, and monitor project costs, a number of key individuals must be involved in these cost management activities. The roles and responsibilities within the Cost Management Plan defines who is accountable for the project's cost-related activities and specific task for which they are responsible.

Chart 14: *Roles and Responsibilities – Cost Management (Source: Author of Study)*

Role	Responsibility
Project Manager	• Overall responsibility for the project's cost management inclusive of estimating costs, cost tracking and controlling, cost reporting. • Conducts variance analysis
Project Team	• Assists with the creation of the project estimates and budget. • Researches costs for related project resources
Director of Finance & Administration	• Provides financial expertise and assistance to Project Manager and project team for budget development, tracking and controlling.

4.6.3 Estimate Costs

Funding for this project comes from an organization that chooses to remain anonymous. Additionally, several resources have been committed to the project that will not incur monetary costs, including laptops, flipcharts, physical whiteboards, etc.

The Project Manager and project team will estimate the project costs using their collective expert judgment, data analysis from similar projects and current market prices for required tools and equipment. Individuals will be hired on a contractual basis, as needed, and compensated at a set rate for services provided, since the budget is limited. These resources (human and technical) will be acquired using the processes and standards outlined in the Procurement Management Plan and Resource Management Plan.

All costs are to be quoted in US dollars, as this is the currency used for the project.

Chart 15: *Cost Estimates (Source: Author of Study)*

Cost Estimates			
Items	**Quantity**	**Unit Cost**	**Estimate (USD)**
Permits and Compliance	2	$1000	$2,000
Production team	2	$2,750	$5,500
Multimedia Content Producer	1	$3500	$3,500
Subject Matter Experts	5	$250	$1,250
Domestic airfare for team	3		$900
Overnight Accommodation	2 nights	$80	$440
Gopro kit	1	$500	$500
DSLR Camera	1	$600	$600
Thumb drives	50	$13.99	$699.50
Honorarium (5 guests)	5	$200	$1,000
Website Development & Hosting	1 year	$1,900	$1,900
Adobe Suite	12 months	$74/month	$888
Marketing			$1,000
VFE Launch			$2,500
Total			**$22,677.50**

4.6.4 Project Budget

The project budget provides a detailed breakdown of the estimated allocated budget for the project. It takes into consideration the contingency reserve and management reserve and serves as a reference for financial decision-making and cost-control activities. The **Cost Baseline** is calculated at $22,677.50 and is the sum of the cost estimate and the contingency reserve. The **Contingency Reserve** is calculated as 5% of the cost estimate, and **the Management Reserve** is calculated as 3% of the cost baseline. Both the contingency and management reserves are assigned based on established company guidelines that consider a project's size. This is outlined below in Chart 16.

Chart 16: *Contingency and Management Reserve Guidelines (Source: Author of Study)*

Project Type	Definition	Contingency Reserve	Management Reserve
Small	0-6 months; < $25,000US	5%	3%
Medium	6-12 months; $25,000US - $100,000US	7%	5%
Large	>12 months; >$100,000	9%	7%

The **Total Project Budget** is calculated at $24,525.72 and is the sum of the Cost Baseline and Management Reserve.

Chart 17: *Project Budget (Source: Author of Study)*

Items	Quantity	Unit Cost	Estimate (USD)
Permits and Compliance	2	$1,000	$2,000
Production team	2 people	$2,750	$5,500
Multimedia Content Producer	1	$3,500	$3,500
Subject Matter Experts	5	$250	$1,250
Domestic airfare for team	3 persons (return)	$300	$900
Overnight Accommodation	2 nights	$80	$440
Gopro kit	1	$500	$500
DSLR Camera	1	$600	$600
Thumb drives	50	$13.99	$699.50
Honorarium (5 guests)	5 persons	$200	$1,000
Website Development & Hosting	I year	$1,900	$1,900
Adobe Suite	1 year	$74/month	$888
Marketing	-	$1,000	$1,000
VFE Launch	-	$2,500	$2,500
Cost Estimates			**$22,677.50**
Contingency Reserve (5%)			$1,133.88
Cost baseline			**$$23,811.38**
Management Reserve (3%)			$714.34
Total Project Budget			**$24,525.72**

4.6.5 Control Costs

Considering that this project is not a large and complex project, cost will be monitored and controlled in a very simple and appropriate way. The project teams will regularly monitor and control project costs to ensure they align with the budget. This will include regular cost variance analysis by comparing the difference between earned value and the actual cost (CV = EV – AC). By doing so, they can identify any deviations and analyze the cause and effect of them. A positive cost variance value indicates that the project is under budget and a negative cost variance value indicates the project is over

budget. In addition to the Cost Variance, the Schedule Variance (EV – PV; where PV = planned value) analysis will also be used to allow the Project Manager to get a better understanding of the performance of the project. The information gathered from both will be used to make any changes to the project.

Additionally, a robust change control process will be implemented to evaluate and approve any requested changes that may impact costs negatively or positively. The team will also utilize the PMIS – ClickUp, to properly document, approve and track all project expenses.

4.6.6 Cost Reporting

Cost reporting is incredibly important in the Cost Management process. It provides the project stakeholders with accurate and timely insights into the cost performance of the project and ensures transparency and accountability. The Project Manager will develop clear and concise cost reports to be shared with the project team and all pertinent stakeholders monthly and using the data gathered from the control costs process. The PM will take into consideration and calculate the Cost Performance Index (CPI) and Schedule Performance Index (SPI) to indicate the project's cost efficiency and variances from the planned budget. These will be calculated as follows:

- CPI = EV/AC
- SPI = EV/PV

If the SPI is less than 1.0, it means that less work was completed than was planned and if it is greater than 1.0, it means that more work was completed than was planned. If the CPI is less than 1.0 it means that a cost overrun for the work completed has occurred. If the CPI is more than 1.0, it means a cost underrun of performance to date.

4.7 Quality Management Plan

4.7.1 Introduction

The Quality Management Plan for the *Environmental Education through a Virtual Field Experience* project is one of several secondary and complimentary plans for the project's overall Management Plan. It ensures that the project and its team deliver high-quality final products that meet and exceed the expectations of the project stakeholders. The plan establishes the quality processes, standards, and procedures of the project. The quality objectives for the project serves as a guiding framework and are outlined below:

1. To ensure technical performance and reliability by conducting thorough system testing.
2. To achieve inclusive and accessible design through compliance with Web Content Accessibility Guidelines (WCAG).
3. To enhance the user engagement and experience by analyzing feedback received during testing phase and incorporating enhancements based on suggestions.

4. To achieve content accuracy by minimizing factual errors and ensuring that all information presented is accurate and well-researched.

The deliverables for the *Environmental Education through a Virtual Field Experience* project are:

- A Virtual Field Experience Video
- Accompanying digital educational activity book

4.7.2 Roles and Responsibilities

To ensure that the quality objectives of this project are met, it is important that the roles and responsibilities of each team member be clearly defined and communicated. Chart 17 outlines the roles and responsibilities of those with responsibility for the project's quality management. Each role has specific duties that ensure the quality standards are met, processes are monitored and opportunities for continuous improvement are taken advantage of.

Chart 18: *Roles and Responsibilities – Quality Management (Source: Author of Study)*

Role	Responsibility
Project Manager	• Overall responsibility for the project's quality management • Develops and implements quality management plan, and quality assurance processes and standards.

	• Provides recommendations for improvements. • Monitors and controls quality performance • Allocates appropriate resources to ensure quality standard are met and procedures adhered to
Project Team (internal and external)	• Understands and adheres to quality objectives, standards, and processes. • Strives for continuous improvement. • Collects and reports quality-related data

4.7.3 Quality Requirements, Expectations, Metrics, Criteria and Performance Indicators

Chart 18 below presents an overview of the quality requirements, expectations, metrics, criteria, and performance indicators for the project. In addition to Chart 9 (Project Deliverables), it will serve as a detailed reference tool to track and measure the project's quality aspects. By utilizing the information in this chart, the project team will be able to effectively monitor, evaluate and ensure the agreed quality standards are met.

Chart 19: *Overview of Quality Requirements, Expectations, Metrics and Performance Criteria (Source: Author of Study)*

Requirements	Expectations	Metrics	Criteria	Performance Indicators
Content Accuracy	Accurate and well-researched information	Number of factual errors	Factually Correct	Decrease in number of factual errors
Interactive Elements	Engaging user experience	Average user rating	User feedback and satisfaction	Increase in average user ratings

User Interface	Intuitive and user-friendly	Completion success rate of the VFE	Usability testing	Higher task completion success rate
Audio & Video Quality	Clear and high-quality	Quality assessment and rating of audio and video	Clarity and resolution	Higher audio and video ratings
Technical Performance	Smooth and glitch-free	Number of system errors	System testing and error-free operation	Decrease in number of system errors
Visual Presentation	Appealing, professional, and child-friendly	Consistency of the design elements	Design evaluation for consistency	Positive evaluation of design elements
Accessibility	Inclusive for all users	Level of accessibility achieved	Accessibility audit for compliance with WCAG	Level of accessibility achieved (meeting or exceeding)

4.7.4 Quality Assurance

The checklist template found in Appendix 5 is to be used by the project team, inclusive of the Project Manager and Sponsor, to assure quality prior to the testing phase.

4.8 Resource Management Plan

4.8.1 Introduction

As the eight-management plan in the overall project management plan, the Human Resource Management Plan outlines the approach for acquiring, developing, managing, and evaluating the project team, ensuring that the best individuals with the appropriate skills

and expertise are selected and empowered to contribute to the successful planning and execution of the project. This plan establishes a solid foundation for efficient and effective resource allocation, clear roles and responsibilities, and cohesive teamwork throughout the project.

4.8.2 Project Team Assignment

The roles and responsibilities for the *Environmental Education through a Virtual Field Experience* project are critical to the success of the project. It is therefore important that each team member understands their roles. Chart 19 below outlines the roles and responsibilities of the project team members.

Chart 20: *Roles and Responsibilities – Resource Management (Source: Author of Study)*

Role	Responsibility
Project Manager	• Overall responsibility for the project's resource management. • Ensures adherence with labor laws. • Monitors and evaluates performance of Project team. • Facilitates cohesion among the team.
Production Team	• Responsible for content creation. • Assists in virtual field experience development.
Director of Communications	• Manages project communications. • Creates and distributes project-related content. • Handles external communications and media relations.
Multimedia Content Producer	• Provides videography and photography services for content creation and virtual field experience development.
Educators/Coordinators	• Assists with content development.

	• Assesses and evaluates the effectiveness of educational activities. • Collaborates with other project team members.
Subject Matter Experts	• Provides subject matter expertise on indigenous peoples, cultural and natural history, and biodiversity of Kaieteur National Park. • Provides expertise in accessibility design and compliance.
Content Contributors	• Provides specialized knowledge and insights.
Volunteers	• Supports Educators/Coordinator in VFE planning and development. • Provides additional help as needed. • Assists with administrative and logistical tasks.

4.8.3 Acquire Project Team

To ensure the successful execution of the project, a skilled and dedicated project team will be created. The Project Manager will oversee the acquisition of the project team, gathering persons internal and external to the company. For external contracted persons, they will be acquired through a thorough selection process based on their educational and professional experience, subject matter knowledge and a general passion for environmental education and commitment to creating a positive impact. The project team will be onboarded and provided with all relevant project-related information, policies, procedures, and standards.

Given the nature of the project, advertising for the specific Subject Matter Experts and Multimedia Content Creator will not be conducted. Instead, the Project Manager, and company, will rely on expert judgment and existing contacts to fill these roles. These are

contacts that the company has worked with before and their work ethic and commitment to environmental stewardship are unquestionable.

4.8.4 Develop Project Team

In developing the project team, the Project Manager will focus on team member interaction and the overall team environment to enhance project performance. This is to improve and enhance teamwork and create an environment of trust and respect to enable successful collaboration and the overall success of the project. Tools and techniques such as virtual teams, interpersonal and team skills, meetings and communication technology will be used to create a team environment that is open and encourages collaboration, knowledge sharing and communication. The purpose of these are outlined below:

- Virtual Teams – The nature of the Project is such that the team can operate virtually following initial meetings and prior to the completion of the Project. The team will work remotely and connect for a Team Meeting twice a week to discuss progress, challenges, and opportunities.
- In-person Meetings – These will be used during the first and last month of the Project and will be held at a local co-working space that has the capacity to seat the key members of the Project team (Project Manager, Educators/Coordinators, SMEs, Director of Communication, Multimedia Content Producer, and Production Team. Volunteers and Content Contributors will be invited on an as-needed basis.

- Communication technology – Emails and ClickUp will be used for regular communication with Project team members. Additionally, official contracts and agreements, and other HR related policies will be sent via email. Zoom will be used as the video conferencing platform to facilitate meetings and team interaction after the first month of the Project. ClickUp will also be used as a shared portal for the team.

4.8.5 Manage Team

The Project Manager will provide support, communication, and guidance to the team to ensure that members remain motivated, productive and aligned with the objectives of the project. Additionally, the Project Manager will provide regular feedback to project team members, celebrate individual and team successes, and identify areas for individual and team improvement. Given the nature of the project (salaried and contracted team-members), this section will not be developed during this Final Graduation Project.

4.9 Procurement Management Plan

4.9.1 Introduction

The creation of the Procurement Management Plan is the ninth objective of this Final Graduation Project. Like the other plans, it is a key component of the overall project management plan for the *Environmental Education through a Virtual Field Experience*

project. Project procurement management includes the three (3) processes that are necessary to purchase or acquire products, services, or results needed from outside the project team.

Because of the nature of this project, procurement is the sole responsibility of the Project Manager. The procurement activities for goods, services, and resources will be minimal and limited. Notwithstanding, this plan provides a roadmap for the project team to identify procurement responsibilities, develop procurement documents (contacts, agreements, etc.), and monitor performance throughout the project.

4.9.2 Roles and Responsibilities

Chart 21: *Roles and Responsibilities – Procurement Management (Source: Author of Study)*

Role	Responsibility
Project Sponsor	• Approves procurement contracts and agreements. • Signs purchase orders. • Approves Procurement Management Plan.
Project Manager	• Overall responsibility for procurement procedure and compliance. • Identifies procurement requirements. • Develops contracts and agreements. • Conducts market research and price comparisons for recording equipment. • Monitors performance of contracted external contributors.

4.9.3 Make or Buy Decision

Technical and human resources will be acquired following a make or buy decision analysis. This allows the Project Manager to identify which resources should be produced internally or which should be purchased or acquired externally from vendors. It takes into consideration the project size and requirements, expertise available, costs, risks, and resource availability.

Currently, no hardware or software is available internally and therefore these will have to be purchased from external vendors. Several project team members will be contracted and will be considered external project team members because the internal team does not have the requisite or limited skills and expertise in some areas such as multimedia content creation. Chart below presents the Make of Buy Decision Matrix used.

Chart 22: *Procurement Requirements (Source: Author of Study)*

Criteria	**Make**	**Buy**
Expertise and Skill Availability	Limited or no expertise and skill within the company	External consultants/contractors possess specialized expertise and skills
Resource Availability	Insufficient or no resources such as hardware and software, and accommodation	External vendors have resources available
Quality Assurance and Risk Management	Higher risk of quality issues and technological challenges	External vendors (consultants/contractors) offer quality assurance and risk mitigation

4.9.4 Procurement Requirements & Schedule

Based on expert judgment and meetings with the project team and other stakeholders. The following goods, services, and resources in Chart 22 will be procured at the specified time based on the needs of the project.

For hardware required for the project, the Project Manager will purchase these from B&H Photo. This company was chosen because of its low price, customer support, and reputation. Having purchased from them in the past, The Common Loop is assured of the quality of their products. Squarespace will be used for software (website) because of its ease of use, company reputation, price, and familiarity. For procurement of the services from Subject Matter Experts and Content Contributors, firm-fixed-price contracts will be utilized. The Project Manager and internal project team will work together to outline the scope of work, deliverables, timelines, and reporting criteria for each contracted expert. These experts have been chosen based on expert judgment and an analysis of their specific subject matter expertise. All payments will be made in US dollars. For videography services, AT Photography will be utilized because of their company reputation and expertise in creating 360-degree video content. It is the only company in Guyana that provides this service in a way that meets the quality, time, and cost needs of the project. KNP Guesthouse will provide overnight accommodation for the team traveling to Kaieteur National Park. This company was chosen because they are the only on-site accommodation provider at the park.

Templates for contracts and agreements for Subject Matter Experts, Videography services and Content Contributors were not developed during this process.

Chart 23: *Procurement Requirements (Source: Author of Study)*

Item/Service	Justification	Source Selection Analysis	Identified Seller/Contractor (where applicable)	Needed by
Hardware: Gopro Kit, DSLR camera	Needed to record supplementary audio and video content to be used in the virtual field experience and digital activity book	Least Cost	B&H Photo	October 2nd, 2023
Software: Website	Needed to host virtual field experience and digital activity book	Least Cost	Squarespace	October 2nd, 2023
Accommodation (Overnight)	Overnight Housing for Production Team and Videographer while filming	Least Cost	KNP Guesthouse	November 11th, 2023
Subject Matter Experts (SME)	To assist in content development for the virtual field experience and digital activity book	Sole source	SME 1 (Name withheld) SME 2 (Name withheld) SME 3 (Name withheld) SME 4 (Name withheld) SME 5 (Name withheld)	October 2nd, 2023
Content Contributors	To provide short content (interviews, artwork, music) to the project	Sole source	CC 1 (Name withheld) CC 2 (Name withheld) CC 3 (Name withheld) CC 4 (Name withheld) CC 5 (Name withheld)	Rolling Basis
Videographer	To capture and edit visual and audio content for the VFE	Sole source	AT Photography	October 2nd, 2023

4.9.5 Procurement Control

The Project Manager, with support from the project team, will monitor the performance of the contracted Subject Matter Experts and Videographer to ensure adherence to their respective contractual obligations. Additionally, any changes or modifications that are necessary will be subjected to the formal change control process established. At the end of the contract period, a performance review will be conducted by the Project Manager. The report from this process will be documented in the project's lessons learned document. The Project Manager will also close out all contracts either at the end of the contracted period or the close of the project, based on the stipulated guidelines and once all deliverables and obligations are met.

4.9.6 Procurement Risks

As with any project, there are risks to project procurement that can impact the successful acquisition of goods, services, and resources. It is, therefore important that the Project Manager and project team identify, understand, and mitigate these risks to ensure a smooth procurement process and avoid delays, poor quality and budget overruns. Below are some potential procurement risks that can occur and therefore need to be proactively managed throughout the project:

- Inability of contracted personnel to meet contractual obligations.
- Unforeseen price increases for hardware and software

- Scope creep
- Intellectual property rights issues

4.10 Risk Management Plan

4.10.1 Introduction

All projects have varied degrees of risk and the *Environmental Education through a Virtual Field Experience* project is no different. It is therefore important to recognize the risks (threats and opportunities) of the project and plan accordingly.

The development of the Risk Management Plan is the tenth and final specific objective for this project and the subsequent project management plan. It outlines the approach and strategies to plan for, identify, assess, respond to, and monitor risks throughout the project. By taking a proactive approach to risk management versus a reactive one, the project team can ensure minimal negative impact to the project, enhance decision making and ultimately ensure the project's success.

4.10.2 Roles and Responsibilities

Chart 22 outlines the roles and responsibilities of the project team members who are involved with risk management activities for the project. By providing clearly defined responsibilities for each role, the chances of miscommunication and inactivity will be greatly reduced.

Chart 24: *Roles and Responsibilities – Risk Management (Source: Author of Study)*

Role	Responsibility
Project Sponsor	• Provides input on potential risks and concerns. • Participates in risk identification and assessment. • Reviews and provides feedback on risk response strategies. • Signs off on risk response strategies. • Stays informed about Project risks and their potential impact.
Project Manager	• Overall responsibility for project risk management. • Assigns responsibilities to project team members. • Conducts risk assessments and prioritize risks. • Ensures risks are properly identified, assessed, and managed. • Develops risk response strategies. • Monitors risk response and mitigation actions. • Implements risk mitigation actions. • Provides regular risk updates and reports to project stakeholders.
Subject Matter Experts	• Provides input and expertise in identifying subject specific risks. • Assists with project risk assessment. • Suggests risk mitigation strategies. • Assists in monitoring and controlling subject-specific risks. • Reports risks to PM.
Project Team	• Identifies risks associated with their respective work areas. • Reports risks to the PM. • Collaborates with PM to implement risk response strategies.

4.10.3 Plan Risk Management

In planning for risks within this project, expert judgment and meetings will be the tools and techniques utilized to collect initial data. This data will be analysed and represented in a Risk Breakdown Structure as displayed in Chart 24. A risk breakdown structure is a hierarchical representation of risks according to their risk categories. The risk categories identified for this project are scope, schedule, cost, quality, communication, human resources, technology, compliance, environmental, stakeholder, funding, and access to technology.

Chart 25: *Risk Breakdown Structure (RBS) (Source: Author of Study)*

Level 1 Risk	Level 2 Risk	Level 3 Risks
1. Direct & Internal Project Risks	1.1 Scope Risks	1.1.1 Incomplete content development
		1.1.2 Scope changes during production
		1.1.3 Insufficient engagement from and with target audience
	1.2 Schedule Risks	1.2.1 Delays in content creation and delivery
		1.2.2 Technical issues with website
		1.2.3 Inadequate time for testing and feedback
	1.3 Cost Risks	1.3.1 Budget overrun due to unforeseen expenses
		1.3.2 Inaccurate cost estimations
		1.3.3 Price increase for equipment and resources
	1.4 Quality Risks	1.4.1 Poor user experience
		1.4.2 Inaccurate or misleading information
		1.4.3 Non-compliance with Accessibility Standards
		1.4.4 Lack of alignment with educational objectives
	1.5 Communication Risks	1.5.1 Miscommunication of project goals and requirements
		1.5.2 Ineffective communication with stakeholders
		1.5.3 Language and cultural barriers
	1.6 Human Resource Risks	1.6.1 Skills gap in content development team
		1.6.2 Lack of collaboration and coordination
	1.7 Technology Risks	1.7.1 Technical glitches and system failures
		1.7 2 Incompatibility with user devices
2. External Risks	2.1 Environmental Risks	2.1.1 Adverse weather condition
		2.1.2 Environmental regulations and permitting affecting content creation

	2.2 Stakeholder Risks	2.2.1 Lack of support from local communities
		2.2.2 Conflicting interests
		2.2.3 Resistance to adopting virtual learning
		2.2.4 Inadequate engagement from partnering organization
	2.3 Funding Risks	2.3.1 Insufficient funding for project execution
		2.3.2 Delays in securing necessary funding
		2.3.3 Changes in funding availability
	2.4 Access to Technology	2.4.1 Limited internet connectivity in target communities
		2.4.2 Insufficient access to required technology

4.10.4 Probability and Impact Scales

During the Perform Qualitative Risk Analysis process, the project risks will be prioritized by analyzing their individual impact (Chart 25) and probability (Chart 26) using a five-point scale. Expert judgment is a crucial tool and technique used during this process. The impact is assessed based on the impact on cost, schedule, and quality, and probability is assessed based on occurrence during the project lifecycle. When a single risk has a high impact on one objective (scope) and a very low impact on another cost), the risk score will be calculated by assigning the respective impact scale value to each objective and then finding the sum. This means that if a single risk has a high impact on scope, the associated impact scale value would be 4. If that risk has a very low impact on cost, the associated impact scale value would be 4. Therefore, the overall risk score would be 4.

The probability and impact scales are used to create the Probability Impact Matrix. This valuable tool allows the project manager and team to assess and prioritize risks and responses based on their likelihood of occurrence and their potential impact on the project. Risks are classified as high (red), medium (yellow), or low (green) priority, as demonstrated in Figure 7. Risks labeled as high will require proactive prevention and mitigation strategies to ensure they do not occur. Risks labeled as yellow are addressed as they occur, and risks labeled as green are low-priority and must be monitored.

Chart 26: *Impact Scale (Source: Author of Study)*

Impact Scale	Event Occurrence Impact
1 – Very Low	Minimal or no impact
2 - Low	Minor impact
3 - Moderate	Noticeable impact
4 - High	Significant impact
5 – Very High	Severe and potentially catastrophic impact

Chart 27: *Probability Scale (Source: Author of Study)*

Probability Scale	Event Occurrence Probability
1 – Very Low	Highly unlikely to occur during project lifecycle
2 - Low	Unlikely to occur during project lifecycle
3 - Moderate	Moderate chance of occurring during project lifecycle
4 - High	Likely to occur during project lifecycle
5 – Very High	Almost certain to occur during project lifecycle

Figure 7: *Probability and Impact Matrix (Source: Author of Study)*

Probability	Impact Rating					
		1 Very low	2 Low	3 Moderate	4 High	5 Very High
	5 Very High	5	10	15	20	25
	4 High	4	8	12	16	20
	3 Medium	3	6	9	12	15
	2 Low	2	4	6	8	10
	1 Very Low	1	2	3	4	5

Green = Low Risk

Yellow = Moderate Risk

Red = High Risk

Risk Register

Chart 28: *Risk Register (Source: Author of Study)*

RBS Code	Description	Risk Category	Cause	Consequence	Probability	Impact	Risk Score	Response Strategy
1.1.1	Incomplete content development	Scope	Unclear Content requirements	Inadequate educational material and user experience	3	5	15	Mitigate
1.1.2	Scope changes during production	Scope	Lack of proper change control processes	Schedule delays and potential budget overrun	2	5	10	Monitor and Control
1.1.3	Insufficient engagement from and with target audience	Stakeholder	Ineffective engagement and outreach strategies	Lowe user participation and limited impact	3	5	15	Mitigate
1.2.1	Delays in content creation and delivery	Schedule	Unrealistic timelines	Delayed launch and potential impact on project milestones	3	4	12	Mitigate
1.2.2	Technical issues with website	Technology	Poor website development and inadequate technical expertise	User frustration and negative user impact experience	2	4	8	Mitigate
1.2.3	Inadequate time for testing and feedback	Schedule	Insufficient allocation of time for testing and feedback processes	Incomplete of flawed content with limited	3	3	9	Accept

				opportunity for refinement				
1.3.1	Budget overrun due to unforeseen circumstances	Funding/Financial	Inaccurate cost estimated and unexpected cost increases	Financial constraints and potential impact on project objectives	2	4	8	Mitigate
1.3.2	Inaccurate cost estimates	Funding/Financial	Insufficient analysis of project costs or lack of expertise	Potential budget deviations and financial challenges	2	3	6	Monitor and Control
1.3.3	Price increase for equipment and resources	Funding/Financial	Market fluctuations and supplier price changes	Increased project expenses and potential budget constraints	2	3	6	Accept
1.4.1	Poor user experience	Quality	Inadequate user interface design or usability testing	Negative user experience and limited engagement	3	5	15	Mitigate
1.4.2	Inaccurate or misleading information	Quality	Insufficient fact-checking or content validation	Loss of credibility and potential misinformation	2	4	8	Mitigate
1.4.3	Non-compliance with accessibility standards	Compliance	Lack of understanding or adherence to accessibility guidelines	Accessibility issues	3	5	15	Avoid
1.4.4	Lack of alignment with educational objective	Stakeholder	Inadequate collaboration with SMEs and Educators/Coordinators	Misalignment with intended learning outcomes	3	4	12	Mitigate

1.5.1	Miscommunication of project goals and requirements	Communication	Lack of clarity or ineffective communication channels	Misunderstandings and potential deviations from project objectives	2	3	6	Monitor and Control
1.5.2	Ineffective communication with stakeholders	Communication	Insufficient stakeholder engagement or poor communication plan	Stakeholder dissatisfaction	2	3	6	Mitigate
1.5.3	Language and cultural barriers	Communication	Language differences or cultural misunderstanding	Limited understanding and potential misinterpretation	1	3	3	Accept
1.6.1	Skills gap in development team	Resources	Insufficient expertise of lack of required skills	Lower quality content and potential delays in development	2	3	6	Mitigate
1.6.2	Lack of collaboration and coordination	Resource	Poor teamwork or ineffective project management	Communication breakdown and potential project delays	2	3	6	Mitigate
1.7.1	Technical glitches and system failures	Technology	Unreliable technology infrastructure	Service disruptions and potential data loss	2	4	8	Mitigate
1.7.2	Incompatibility with user devices	Technology	Lack of device compatibility testing or outdated technology	Limited user access and negative user experience	2	3	6	Mitigate
2.1.1	Adverse weather condition	Environmental	Unpredictable weather patterns	Disruptions to field activities and potential safety concerns	2	3	6	Accept

2.1.2	Environmental regulations and permitting	Environmental/ Compliance	Changes in environmental regulations or permit requirements	Delays or restrictions in content creation and delivery	2	4	8	Mitigate
2.2.1	Lack of support from local communities	Stakeholder	Community resistance of lack of engagement	Limited access to local knowledge and potential project challenges	3	4	12	Mitigate
2.2.2.	Conflicting interests	Stakeholder	Differing priorities or competing agendas	Delays in decision-making and potential project conflicts	2	3	6	Mitigate
2.2.3	Resistance to adopting virtual learning	Stakeholder	Limited acceptance of virtual learning or traditional preferences	Limited participation and potential impact on project outcomes	2	4	8	Mitigate
2.2.4	Inadequate engagement from partnering organization	Stakeholder	Lack of commitment of limited involvement	Potential delays in project execution and limited support	2	3	6	Monitor and Control
2.3.1	Insufficient funding for project execution	Funding/Financial	Funding limitations or budget constraints	Potential resource shortages and compromised project objectives	2	5	10	Mitigate
2.3.2	Delays in securing necessary funding	Funding/Financial	Funding approval processes or unforeseen funding delays	Schedule disruptions and potential impact on project activities	2	5	10	Monitor and Control

2.3.3	Changes in funding availability	Funding/Financial	Altered funding commitments or budget reallocations	Financial uncertainties and potential adjustments in project scope	2	5	10	Monitor and Control
2.4.1	Limited internet connectivity in target communities	Technology	Lack of reliable internet infrastructure or connectivity issues	Limited access to the virtual field experience	3	4	12	Mitigate
2.4.2	Insufficient access to required technology	Technology	Limited availability or lack of necessary technology resources	Challenges in delivering the virtual field experience	3	4	12	Mitigate

5 CONCLUSIONS

The success of the *Environmental Education through a Virtual Experience* project rests heavily on the development and utilization of a comprehensive project management plan and its subsidiary plans. Without such a plan, the project risks experiencing scope creep, misalignment of objectives, budget overrun, poor communication with and among stakeholders, missed deadlines, and overall failure. Using the best practices outlined in the PMBOK® Guide and additional resources, this project management plan was created. It considers the project's unique nature and addresses its specific needs.

1. The Project Charter was the first subsidiary plan created for this Project management plan as part of specific objective number one. This Project Charter included start and end dates, Project purpose/justification, goals, and objectives, high-level milestones, assumptions and constraints, estimated Budget, stakeholders, and deliverables. For the Project to commence, authorization from the Project Sponsor is required.
2. The Scope Management Plan was developed to define and specify the scope of the Project. Through comprehensive analysis, the project’s objectives, deliverables, and boundaries were defined and documented. The plan was developed by considering the project’s goals, requirements, and constraints, ensuring a clear and well-defined scope.
3. The Stakeholder Management Plan was developed to ensure that all key stakeholders involved in the project were effectively identified, engaged, and

managed. By using expert judgment, an analysis of the stakeholder interests, expectations, and potential impacts on the project was conducted, resulting in a stakeholder register. This Stakeholder Management Plan ensures that the project meets or exceeds the identified needs of the stakeholders and ultimately helps achieve the project objectives.

4. The Communications Management Plan was developed to build effective and efficient channels and processes for project communications between and among stakeholders. This plan outlines the communications management approach, methods, and technologies to be used and, ultimately, the communications matrix. Through this plan, the Project Manager and team can establish and maintain timely, open, and transparent communication.
5. The Schedule Management Plan was developed to ensure the timely completion of the project activities. For this process, the project WBS and scope were used to identify the activities, durations and dependencies needed. A sample project schedule was presented in both tabular and Gantt chart forms. The plan allows for a structured and achievable project timeline that ensures the project is completed within the allocated time frame.
6. The Cost Management Plan was developed to ensure the effective utilization of the project's financial resources. Cost estimates were prepared, and a budget was built based on those estimates. The plan considers costs of permits, production, equipment, subject matter experts, content contributors, accommodations and other

logistics, and reserves. Both a Contingency and Management reserve were calculated.

7. The Quality Management Plan was partially developed to ensure that the project delivers a high-quality and accessible learning experience to the project's target audience. Quality objectives were created and aligned with the project deliverables. The quality expectations, requirements, metrics, criteria, and performance indicators were also identified. A Quality Assurance process was also established to monitor and evaluate the project's deliverables upon completion.
8. The Resource Management Plan was developed to ensure the project's resources were utilized effectively and efficiently. It outlines strategies for acquiring, developing, managing, and monitoring resources to ensure that the right resources are available at the right time and performing at the agreed-upon standards. For this project, human resources will be acquired both internally and externally. Subject Matter Experts are chosen based on their particular expertise, known work ethic, and commitment to environmental stewardship. Contract templates were not created during this process.
9. The Procurement Management Plan was developed to ensure the procurement of the project's goods and services in a timely, cost-effective, and sustainable manner. Great care was taken in identifying the highest quality goods and services locally, when available, and internationally when not. The human resources of the project are all local and, thus, allow monies to remain in the local economy. The

Procurement Management Plan outlines the procurement processes for the project. This includes the procurement requirements and schedule, control, and risks.

10. The Risk Management Plan was developed to ensure that the project team and stakeholders are proactive in identifying, managing, monitoring, and controlling project risks. The plan outlines the risk breakdown structure, probability and impact matrix, and a risk register. By having a clear idea of the project's potential risks, the team can plan accordingly and ensure they are mitigated, avoided, accepted or monitored, and controlled based on agreed-upon criteria.

6 RECOMMENDATIONS

The following recommendations are offered to The Common Loop in hopes that they improve their internal processes and ensure the success of the *Environmental Education through a Virtual Field Experience* project.

1. While a Project Management Office is not needed, given the organization's size, The Common Loop should aim to utilize project management best practices, as outlined by the Project Management Institute, for every project moving forward.
2. The Common Loop should focus heavily on project communication and stakeholder management, given the nature of the project, to reduce miscommunications and conflicts when differing ideas are presented. Additionally, the stakeholders should be kept informed about the project's progress and be provided with opportunities to voice any concerns and provide feedback.
3. The Common Loop should spend time creating templates for documents that repeat across projects to reduce redundancy and save time.
4. The Common Loop should ensure that the project remains within budget since the financial resources are limited. The Cost Management Plan present is an example of how this can be achieved. Regular monitoring of the budget is advised, and areas where cost-saving opportunities present should be exploited.
5. The Common Loop must remain firm in maintaining its change management process to ensure that this and other projects are not subject to scope creep, budget overruns, or low-quality deliverables.

6. The Common Loop must take the time to carefully assess the final deliverables to ensure their quality. The project's nature and the product's importance demand that care is taken.
7. The Common Loop should continuously monitor and reassess identified risks, especially those with high probability and impact, and proactively develop mitigation strategies.

7 VALIDATION OF THE FGP IN THE FIELD OF REGENERATIVE AND SUSTAINABLE DEVELOPMENT

Sustainable Development is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (Our Common Future, 1987). According to its supporters, the model is the leading solution to the current eco-social crises that the world faces. In 2015, the Sustainable Development Goals (SDGs) were adopted by all the Member States of the United Nations (UN). The 17 carefully crafted goals are aimed at addressing the global challenges the world faces, including and especially those related to inequality, poverty, environmental degradation, climate change, decent work, and health and wellbeing. For all intents and purposes, the concept of Sustainable Development and the Sustainable Development Goals are excellent and needed solutions to the world’s deep problems. However, upon careful consideration and examination, this model of development and the SDGs are incredibly flawed and not as holistic as it could be. Given this, it is important to consider alternatives to this model. One such alternative is Regenerative Development.

Regenerative Development goes a step beyond Sustainable Development and provides a more holistic approach to development, an approach that the world desperately needs. Medard Gabel, in his 2015 article written for KOSMOS titled *Regenerative Development: Going Beyond Sustainability,* defined regenerative development as “the use of resources to improve society’s wellbeing in a way that builds the capacity of the support systems needed for future growth.” This model differs from sustainable development in its attempt to

uproot versus maintain the status quo. There are six (6) processes that need to be reinforced and integrated for the implementation of regenerative development (Müller, n.d):

- Environmental – regeneration of degraded ecosystems, biodiversity, and ecosystems above other interests
- Social–inclusive and equitable societies, participatory, proactive
- Economic – fair and equitable economy
- Political – participatory governance, transparency, and ethics
- Cultural – rescue of cultural diversity and local knowledge, transforming knowledge into wisdom to assure a better future with greater possibilities of adaptation.
- Spiritual – values, ethics, society that cares.

From a Regenerative Development perspective, the *"Environmental Education through Virtual Field Experiences"* project speaks mostly to the spiritual and social principles but also includes the environmental, economic, and cultural principles as well.

This FGP will comply with the concepts and principles of regenerative development by ensuring that all six layers or principles are considered and accounted for during the planning for and development of all subsidiary plans and the final project management plan. This entails the ethical procurement of supplies, compensating subject matter experts fairly and on time, ensuring community buy-in and participation in ideation, planning and execution of individual field experiences, embracing and incorporating traditional indigenous knowledge in content, etc.

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APPENDICES

Appendix 1: FGP Charter

CHARTER OF THE PROPOSED
FINAL GRADUATION PROJECT (FGP)

1. Student name

Nakasi Fortune

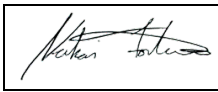
2. FGP name

Project Management Plan for the Implementation of the "Environmental Education through Virtual Field Experiences" project

3. Application Area (Sector or activity)

Environmental Education; Digital Learning

4. Student signature



5. Name of the Graduation Seminar facilitator

Roger Valverde Jimenez

6. Signature of the facilitator

7. Date of charter approval

February 26th, 2023

8. Project start and finish date

January 9th, 2023	Aug 26, 2023

9. Research question

What are the impacts of a comprehensive project management plan and its subsidiary plans on the outcomes of a virtual environmental education project?

10. Research hypothesis

Would the development of a comprehensive project management plan and its subsidiary plans positively impact the outcomes of a virtual environmental education project?

11. General objective

To develop a Project Management Plan incorporating the best practices outlined by the Project Management Institute (PMI) for the "Environmental Education through Virtual Field Experiences" project which will serve as a guide for its implementation.

12. Specific objectives

The specific objectives are as follows:

1. To develop a Project Charter to formally authorize the project and provide the Project Manager with the needed authority to apply resources to the project activities.
2. To develop a Scope Management Plan to define the work which is needed to achieve the project deliverables.
3. To develop a Stakeholder Management Plan to identify, engage and manage the project stakeholders efficiently and effectively.
4. To develop a Communications Management Plan to ensure the timely and effective communication between and among project stakeholders.
5. To develop a Schedule Management Plan to ensure the project activities are completed within the established and agreed upon timeline.
6. To develop a Cost Management Plan to ensure the project costs are completed within the established and agreed upon budget.
7. To develop a Quality Management Plan to identify and outline the quality parameters and necessary procedures to control quality and ensure the project deliverables meet stakeholder acceptance criteria.
8. To develop a Resource Management Plan to outline clearly the project roles, responsibilities and needed skills and knowledge to successfully complete the project.

9. To develop a Procurement Management Plan to identify, acquire and control the external products, services and results needed for the project's success; and
10. To develop a Risk Management Plan that defines the project's risk identification, analysis, response, and monitoring and controlling.

13. FGP purpose or justification

A project management plan is critical to a project's outcome, good or bad. Altogether, the subsidiary plans that comprise the project management plan details how the project will be planned and executed. This final graduation project (FGP) seeks to create the project management plan that will serve as a guide for the implementation of the "Environmental Education through Virtual Field Experiences."

"Environmental Education through Virtual Field Experiences" is a project that holds tremendous significance to learners from underserved and vulnerable communities, including people with physical and learning disabilities. It is, therefore, important that the project is planned for and executed in a way that ensures its success and caters to the needs of all the end users.

As a startup company, the executing agency has little documented project management tools available for use. The development and subsequent use of this project management plan will be beneficial to the agency and allow the opportunity to clearly define the project's scope, stakeholders, communications guidelines, schedule, costs, quality metrics, resource allocation, procurement, and risks. This project management plan, upon completion, will be added to the company's organizational process assets for future tailoring and use.

14. Work Breakdown Structure (WBS). In table form, describing the main deliverable as well as secondary, products or services to be created by the FGP.

WBS is annexed.

15. FGP budget

The total budget for this FGP is: **$633.16US**

A breakdown of costs is outlined below.

Project Management Software (Project Plan 365): $131.88US
Project Management Software (ClickUp): $60US
Philology Services: $100US

Printing and Binding of Final FGP document: $200US
Postage of Final FGP Document: $50US
Contingency Fee (15%): $141.28

16. FGP planning and development assumptions

It is assumed that:

1. The FGP will be completed in the allocated time.
2. There will be no changes to the project scope.
3. All reviews and feedback will be provided in a timely manner and aid in continuous improvement; and
4. The guidance provided during all stages of the FGP will be forthcoming and sufficient.

17. FGP constraints

Project constraints include:

1. Information required for specific plans might not be readily available; and
2. Competing priorities in balancing work and school.

18. FGP development risks

The risks identified for this project are:

1. Delay or loss of Final FGP document during shipping from the United States to UCI.
2. With ever-changing technology, by the end of this project the technology included for usage might be outdated.
3. Delays may occur if the proposed project schedule is not adhered to; and
4. Delays may occur if communication between researcher and tutor is not effective or efficient.

19. FGP main milestones

Milestones are related to deliverables on the second level (deliverables) and third level (control accounts) of the WBS of section 14 of this Charter. At the same time the deliverables are related to the specific objectives (in the case of the FGP please include the times for the tutorship reviews as well as for the readership).

Deliverable	Start Date	Finish estimated date
FGP	Jan 9, 2023	Aug 26, 2023
FGP Deliverables	Jan 9, 2023	Feb 26, 2023
Charter	Jan 9, 2023	Jan 29. 2023
WBS	Jan 16, 2023	Jan 22, 2023
Chapter II: Theoretical Framework	Jan 30, 2023	Feb 5, 2023
Chapter III: Methodological Framework	Feb 6, 2023	Feb 12, 2023
Chapter I: Introduction	Feb 13, 2023	Feb 19, 2023
Executive Summary	Feb 20, 2023	Feb 26, 2023
Annexes	Jan 9, 2023	Feb 26, 2023
Graduation Seminar Approval	Feb 27, 2023	Mar 5, 2023
Tutoring Process	Mar 13, 2023	Jun 30, 2023
Tutor	Mar 13, 2023	Mar 15, 2023
Adjustments of previous Chapters	Mar 16, 2023	Mar 22, 2023

Chapter IV: Development (Results)	Mar 22, 2023	May 24, 2023
Project Charter and Scope Management Plan	Mar 22, 2023	Mar 29, 2023
Stakeholder Management Plan	Mar 22, 2023	Mar 29, 2023
Communication Management Plan	Mar 30, 2023	May 24, 2023
Schedule Management Plan	May 26, 2023	Jun 24, 2023
Cost Management Plan	May 26, 2023	Jun 24, 2023
Resource Management Plan	May 26, 2023	Jun 24, 2023
Procurement Management Plan	May 26, 2023	Jun 24, 2023
Quality Management Plan	May 26, 2023	Jun 24, 2023
Risk Management Plan	May 26, 2023	June 24, 2023
Chapter V: Conclusions	May 26, 2023	Jun 24, 2023
Chapter VI: Recommendations	May 26, 2023	Jun 24, 2023
Tutor Approval	Jun 26, 2023	Jun 27, 2023
FGP Submission to reviewers	Jun 30, 2023	Jun 30, 2023
Adjustments	Jul 31, 2023	Aug 14, 2023
Presentation to Board of Examiners	Aug 21, 2023	Aug 26, 2023

20. Theoretical framework

20.1 Estate of the “matter”

The lack of a comprehensive project management plan increases the likelihood of project failure. The Common Loop, in its current state, does not have the organizational assets, which include project management plans, from which to use for during the development and implementation of its projects. This therefore undermines the organization’s ability to deliver on its mission and vision. Further, they do not have the resources but way of project management practitioners on board who can quickly and readily develop such a plan.
The development of this project management plan will be beneficial to the organization and support/guide their execution of projects that advance their mission and help them live into their vision.

20.2 Basic conceptual framework

Accessible, Augmented Reality, Diversity, Equity, Inclusive, Indigenous Peoples, Nature-based Environmental Education, Project Management, Project Management Plan, Protected Areas, Regenerative Development, Sustainable Development, Virtual Field Experiences, Virtual Reality

21. Methodological framework

Objective	Name of deliverable	Information sources	Research method	Tools
To develop a project charter to formally authorize the project and provide the Project Management with the authority to apply resources to the project activities.	Project Charter	**Secondary:** Books, Presentations, Journals **Primary:** Meetings and discussions	Qualitative	Data gathering (brainstorming), Expert Judgment
To develop a Scope Management Plan to define the work which is needed to achieve the project deliverables.	Scope Management Plan	**Secondary:** Books, journals **Primary:** Meetings and discussions, lessons learnt	Qualitative	Expert Judgment, Data gathering (brainstorming, interviews), Data analysis, Meetings
To develop a Stakeholder Management Plan to identify, engage and manage the project stakeholders efficiently and effectively.	Stakeholder Management Plan	**Secondary:** Books, articles **Primary:** Meetings and discussions, lessons learnt	Qualitative	Expert Judgment, Data gathering (brainstorming, interviews), Data analysis, Meetings.
To develop a Communications Management Plan to ensure the timely and effective communication between and among	Communications Management Plan	**Secondary:** Books, journals, articles **Primary:**	Qualitative	Expert Judgment, Communication requirements analysis, Communication technology, Communication

projects stakeholders.		Meetings and discussions, lessons learnt		methods, Interpersonal skills, Meetings, Project Management Information System, Project reporting
To develop a Schedule Management Plan to ensure the project activities are completed within the established and agreed upon timeline.	Schedule Management Plan	**Secondary:** Books, articles **Primary:** Meetings and discussions,	Quantitative	Expert Judgment, Data analysis, Meetings, Project Management Information System, Estimating technique, Critical path method, Agile release planning.
To develop a Cost Management Plan to ensure the project costs are completed within the established and agreed upon budget.	Cost Management Plan	**Secondary:** Books, journals **Primary:** Meetings and discussions, observation	Quantitative	Expert Judgment, Meetings, Data analysis, Estimating technique, PMIS, Financing
To develop a Quality Management Plan to identify and outline the quality parameters and necessary procedures to control quality and ensure the project deliverables meet stakeholder acceptance criteria.	Quality Management Plan	**Secondary:** Books, articles **Primary:** Meetings and discussions	Mixed methods	Expert Judgment, Meetings, Data analysis, Inspection Planning, Quality improvement methods, Inspection, Testing/product evaluation

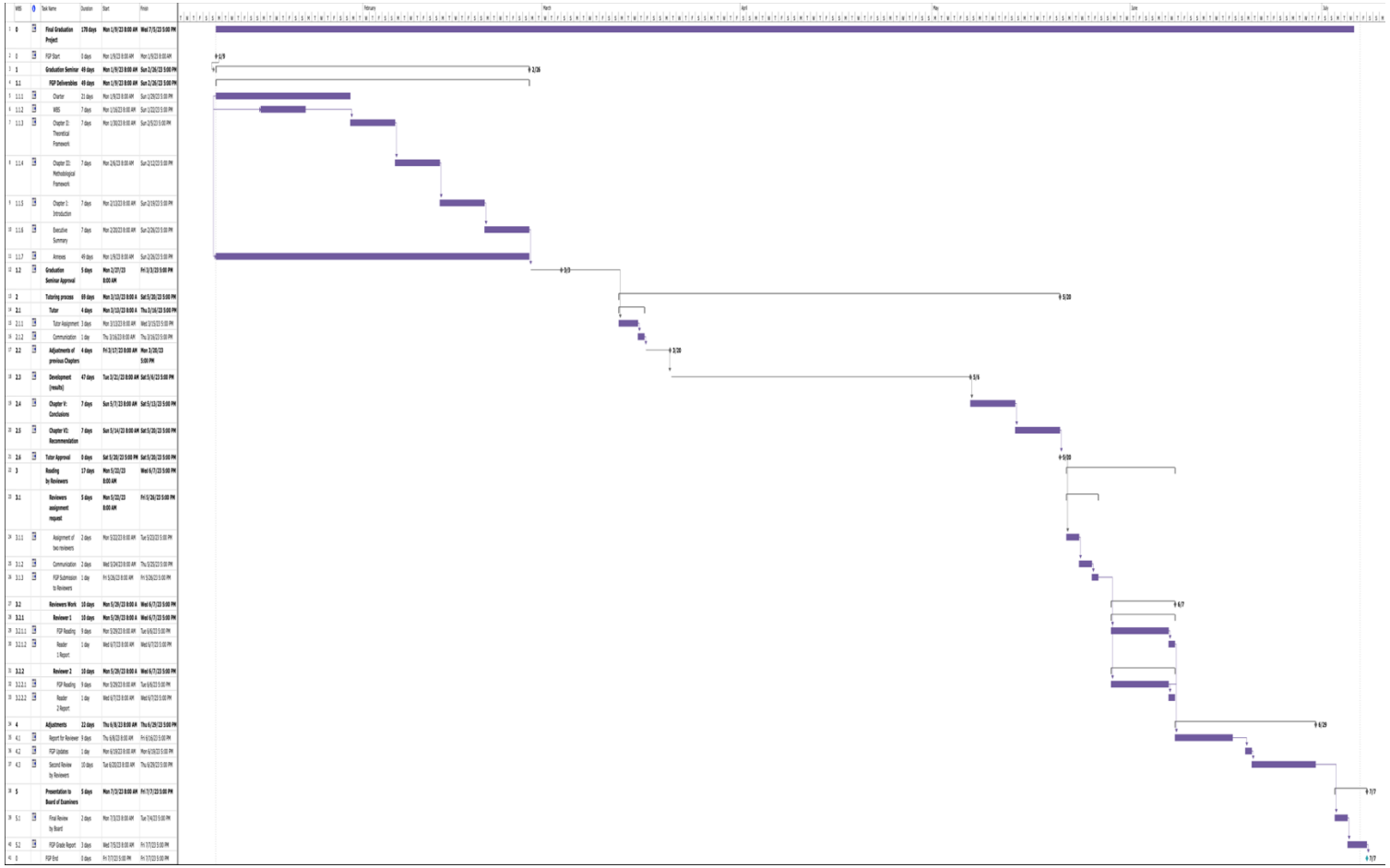
To develop a Resource Management Plan to outline clearly the project roles, responsibilities and needed skills and knowledge to successfully complete the project.	Resource Management Plan	**Secondary:** Books, articles **Primary:** Meetings and discussions,	Mixed methods	Expert Judgment, Meetings, Estimation technique, PMIS, Interpersonal and team skills, Communication technology, Virtual teams
To develop a Procurement Management Plan to identify, acquire and control the external products, services and results needed for the project's success.	Procurement Management Plan	**Secondary:** Books, articles **Primary:** Meetings and discussions	Mixed methods	Expert Judgment, Meetings, Source selection analysis, Advertising, Inspection
To develop a Risk Management Plan that defines the project's risk identification, analysis, response, and monitoring and controlling	Risk Management Plan	**Secondary:** Books, journals **Primary:** Meetings and discussions	Qualitative	Expert Judgment, Meetings, Data analysis (stakeholder analysis, SWOT analysis), Data gathering (brainstorming, checklists), Data representation (probability and impact matrix), Risk categorization, Strategies for threats, opportunities, PMIS

22. Validation of the work in the field of the regenerative and sustainable development.

The FGP will comply with the concepts and principles of regenerative development by ensuring that all six layers or principles are considered and accounted for during the planning for and development of all subsidiary plans and the final project management plan. This entails the ethical procurement of supplies, compensating subject matter experts fairly and on time, ensuring community buy-in and participation in ideation, planning and execution of individual field experiences, embracing and incorporating traditional indigenous knowledge in content, etc.

Appendix 2: FGP WBS

Appendix 3: FGP Schedule



Appendix 4: Quality Assurance Checklist

The Common Loop

Environmental Education through a Virtual Field Experience Project

Quality Assurance Checklist

Please use the following checklist to evaluate whether the quality standards for the project have been met.

Objective 1: Content Accuracy

☐ The information provided in the virtual field experience and digital activity book is factual, correct, and reliable.

☐ There are no noticeable factual errors or inaccuracies in the content.

Objective 2: User Experience and Engagement

☐ The virtual field experience is engaging and encourages exploration and learning.

☐ The virtual field experience holds the user's interest throughout the exploration.

Objective 3: Technical Performance and Reliability

- The virtual field experience operates smoothly without any technical difficulties or glitches.

- There are no noticeable issues with the performance and responsiveness of the virtual field experience.

Objective 4: Inclusivity and Accessibility

- The virtual field experience is accessible to users with diverse abilities.

- The virtual field experience is easy to navigate and use for users of different abilities.

- The visual elements of the virtual field experience are visually appealing and professional.

- The design elements are consistent and visually pleasing.

- The user interface of the virtual field experience is intuitive and user-friendly.

- Navigating through the virtual field experience is easy and straightforward.

- It is easy to locate and access the desired information or features.

Please provide any additional comments or notes below:

_____

_____

_____

_____

_____

_____

Completed By: _____

Date Completed: _____

Appendix 5: Philologist Dictum

SHENELLE DE JONGE
BACHELOR OF EDUCATION (SECONDARY- ENGLISH)
ASSOCIATE DEGREE (SECONDARY-ENGLISH)
TRAINED SECONDARY SCHOOL TEACHER

June 30, 2023.

Academic Advisor
Masters Degree in Project Management (MPM)
Universidad para la Cooperacion Internacional (UCI)

Dear Academic Advisor,

Re: **Review and Proofreading of Final Graduation Project submitted by Nakasi Fortune in partial fulfillment of the requirements for the Masters in Project Management (MPM) Degree.**

I hereby confirm that Nakasi Fortune has made all the corrections to the Final Graduation Project documents as I have advised. It is my belief that the document satisfies the literary and linguistics standards expected of a student for a degree at the Master's level.

Regards

.....
Shenelle De Jonge