UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL
(UCI)

PROJECT MANAGEMENT PLAN FOR THE MUFFLES COLLEGE HIGH SCHOOL RUNNING TRACK CONSTRUCTION

VANESSA N. JOHNSTON

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

Belize City, Belize

November 10th, 2018

UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL
(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

_____
Fabio Muñoz Jiménez
TUTOR

_____
James Pérez Céspedes
REVIEWER No.1

_____
Carlos Brenes
REVIEWER No.2

_____
VANESSA N. JOHNSTON
STUDENT

DEDICATION

To my beloved Grandmother and Uncle whom I lost during the process of this course.

The love of a Grandmother is unique, and my darling “Mami” was unlike any other. Obtaining an education was always of great importance to her and with this Master’s degree, I want to thank her for the sacrifices, the care, the concern, and the love she has always bestowed upon me and our entire family.

ACKNOWLEDGMENTS

I would like to express immense gratitude to all the professors, tutors and the Faculty of the University of International Cooperation (UCI) for enabling this process. To my fellow classmates and consistent team members, you all made the work load a delicious piece of cake!

To my family, thanks for the support and the consistent nudges towards the finishing line.

We made it!

INDEX OF CONTENTS

INDEX OF FIGURES

INDEX OF CHARTS

INDEX OF TABLES:

ABBREVIATIONS AND ACRONYMS

CR: Change Requests

FGP: Final Graduation Project

IAAF: International Association of Athletics Federations

MCHS: Muffles College High School

PMPlan: Project Management Plan

ROI: Return on Investment

WBS: Work Breakdown Structure

EXECUTIVE SUMMARY (ABSTRACT)

Track and Field is a sport that offers great benefits, and running in general is one of the most effective ways to stay in shape and train for each sport. Track can teach an individual the proper techniques for any kind of sprinting or distance. Muffles College High School (MCHS) focuses on academics but understands that high school students need to learn the fundamentals of any sport they participate in, and track is the perfect sport to teach them the basics they need in order to be successful in their sport, or simply to engage in healthy habits. The proposed running track project supports MCHS strategic goals of aligning sports and physical recreation encompassing an even greater variety of competitive options for male and female students. The new track would not only be the only one of its kind in the district but; it would also provide the campus and community with a facility available for a wide variety of needs, 365 days a year.

Currently the track and field runners utilize the grass track around the football field to practice. The surface is uneven and exposed to the elements, which makes it unusable and unsafe, especially after any rain. As the school grows, there has been greater interest and significant accomplishments in the track and field competitions within the district. The acclaims of the runners catapulted the MCHS principal, in early 2017, to make strides towards starting a discussion about the school having a state of the art running track. Later that year, the Sisters of Mercy and Board of Governors approved the project.

The general objective of the Final Graduation Project (FGP) was to develop a Project Management Plan (PMPlan) which clearly outlined the processes necessary for the Project Manager to apply the organizational resources in order to manage the construction of a 400m running track with six (6) lanes, red in color, installed around the schools existing football field. The PMPlan specific objectives included developing a: 1. Project Integration Management, this is the umbrella that covered all the other project management knowledge areas related to the MCHS Running Track. This Project Charter was one of the first steps towards achieving this. 2. The Project Scope Management Plan which defines, validates, and controls scope. This particular knowledge area ensured that the MCHS Running Track Project stayed on track and that everyone, including the project requester, understood what tasks were to be included in the project to prevent frustrating changes and unmet expectations. 3. The Project Time Management Plan was the most detailed process in which all activities were identified and determined for the MCHS running track. 4. The Project Cost Management allowed for the project to keep costs low or at least at an expected or reasonable level. The PMPlan continuously evaluated costs in order to avoid any surprises at the end of a project. The MCHS Running Track Project had a budget of USD $ 200,000.00. 5. The Project Quality Management Plan goal was for the MCHS running track project to achieve consistency across the lifespan of the project.

Throughout the meticulous execution of the MCHS project, the other objectives, which follow, were pivotal 6. The Project Human Resource Management plan

allowed for individual strengths and weaknesses to be identified and a synergistic relationship, which was created to benefit all involved in the project. 7. The Project Communications Management plan was crucial to identifying who needed to know what and when before the project started and ensuring that the relevant information was disseminated using the appropriate channels. 8. The Project Risk Management plan assisted in identifying major MCHS Running Track project risks and the mitigation plans associated with them. 9. The Project Procurement Management plan assisted in identifying areas of the project in which resources or labor were not to be “in house” and needed to be outsourced. The potential hiring of contractors or vendors to take on certain tasks occurred and required those areas be seamlessly integrated into MCHS Project. Lastly, objective 10. The Project Stakeholder Management plan included not only the project requester (Board of Directors, Faculty, Staff and Students), but also team members who have worked on the project, contractors, suppliers, customers and the public, and many other people internal and external to the organization.

The methodology section describes actions that were taken to investigate the MCHS Running Track Construction project. The type of research that was utilized in this study was qualitative and quantitative research, a mixed method study. The research investigated the “why” and “how” of the decision-making. Along with questionnaires, which answered “why” the running track was necessary, those allowed for respondents to provide their feedback, which was then utilized in the form of statistical representation of the findings in the study. The “how” of the project was answered via interviews with the key stakeholders and a few experts in the field. These two methods formed the basis of the study.

In conclusion, the top priorities of the PMPlan for the MCHS running track construction were to develop a comprehensive PMPlan along with ensuring the safety of the MCHS athletes, and ensuring the durability and performance of the running track while safeguarding the MCHS investment. The MCHS Running Track Project plan was an essential and challenging activity. It involved the definition of work tasks, the estimation of the required resources and durations for individual tasks, and the identification of various procurement alternatives.

It is recommended that the school should create and utilize project management plans for the execution of any future projects. A PMPlan for construction is the basis for developing the budget and the schedule for work. In addition to these technical aspects of construction planning, the human resource component was also a pivotal part of the project. Developing the MCHS PMPlan was ultimately a critical task in obtaining a successful project and the adherence to the specifics of the document is important and highly recommended.

1. INTRODUCTION

1.1 Background

Located in the beautiful town of Orange Walk in sunny Belize, Muffles College High School is in the middle of one of the most culturally diverse communities in the region, a true melting pot of cultures as it has been called. The student population is a reflection of this vibrant diversity. Muffles College High School is a Roman Catholic Institution under the auspices of the Sisters of Mercy, committed to quality education that is relevant to the needs of a Belizean society. It strives to develop the total person-spiritually, morally, psychologically, intellectually, emotionally, physically, and socially- in keeping with the teachings of Jesus and in the Mercy tradition. It also seeks to create, through active participation of all concerned, an environment of harmony, tolerance, and respect for individual differences.

The following Project Management Plan for the MCHS Running Track Construction supports MCHS strategic goals of aligning sports and physical recreation with an even greater variety of competitive options for male and female students. The new track will not only be the only one of its kind in the district but it would also provide the campus and community with a facility available for a wide variety of needs, 365 days a year. This Final Graded Project (FGP) will assist in clearly outlining what is to be done and to authorize the Project Manager to proceed, via the Project Management Plan (PMPlan), while also applying organizational resources where necessary in order to construct a 400m running track with six (6) lanes installed around the schools existing football field.

This PMPlan outlines the scope, cost, time, objectives, and overall approach for the work to be completed for the running track. This PMPlan is the single point of reference on the MCHS Running Track Project as it relates to the project goals and objectives, scope, estimates, work plan, and budget.

In addition, it serves as a contract between the Project Team and the Project Sponsors, stating what will be delivered according to the budget, time constraints, risks, resources, and standards agreed upon for the project.

1.2 Statement of the problem

Studies suggest that student athletes are less likely to participate in unhealthy or risky behavior when they are playing sports in high school. A 2002 study by the Department of Education found that students who spent no time in extracurricular activities in high school were forty nine (49) percent more likely to use drugs and thirty seven (37) percent more apt to become teen parents. Just four (4) hours in an extracurricular activity like sports each week dramatically improved those numbers. The problem at MCHS is the inability to accommodate for all of the sporting options and needs of the students. The lack of a proper running facility leaves approximately 200+ track and field aspirants training on unstable and unsafe terrain and countless other students doing the same when warming up for other sports.

As with any PMPlan several issues can arise such as undefined goals, scope changes, lack of accountability and improper risk management to name a few. When it comes to PMPlan for the MCHS Running Track construction, the top priorities include:

- Safety of the MCHS athletes
- Durability and Performance of the running track
- Maximum Protection on the Investment

To achieve these priorities the school has initially chosen who they deem to be the right contractor. The PMPlan will plan along with the winning contractors, Tidesun, to complete the project. Unfortunately, choosing the wrong sports facility contractor is all too easy and can be incredibly costly. Some unqualified contractors bring techniques from non-athletic facility construction into athletic facility construction, which can have disastrous results. The construction or of a running track requires consideration of the many elements that comprise the entire track and field facility.

Items that will be highly considered for this project, as they would be the items to bring about considerable setbacks to the PMPlan, are:

- Size and elevation of available site
- Subsurface site conditions
- Type of synthetic surface
- Sports to be played on the field
- Finish line location
- Level of competition to be run on the track
- Number of lanes
- Drainage
- Color
- Maintenance

The proper creation and execution of a PMPlan for the MCHS Running Track Construction will provide stakeholders with the added comfort of knowing that the required investment will be safeguarded with sound project management implementation.

1.3 Purpose

In the field of international development, sports can be a powerful tool. Given the inherent values of teamwork and fair play, building self-esteem and equal opportunities for boys and girls, sports can also be a means of promoting peace. MCHS understands these principles and wants to provide its students with a range of extracurricular sporting and beneficial lifestyle activities.

In fall of 2017, Muffles College High School (MCHS) embarked on a review of the Physical Education (P.E.) classes and conducted in-depth interviews with the school's board of directors, administrative staff, faculty and students about their concerns with the current P.E. classes, intramural and external sports competitions. It was identified that the existing "elite" sports of basketball, football and volleyball all has adequate courts to practice and compete on.

The objective of this PMPlan is to construct the new running track that meets budget and all other necessary project management and institutional requirements. The implementation phase is expected to commence mid-June 2018 and run through September 2018.

Modern synthetic surfaces for athletics tracks are high performance systems formulated to be durable and designed to offer the best combination of dynamic properties for athletes. An athletics facility should meet these requirements at the time of a competition. However, it is obvious that surfaces must retain their characteristics in the long-term in order for a fruitful return on investments (ROI). For this reason, MCHS has chosen a synthetic surface athletics tracks, which represent a considerable financial investment. Ultimately, the major purpose of this PMPlan is to assist in managing the execution of the project and safeguard the school's ROI.
To achieve a reasonable return on their investment, MCHS should expect that the PMPlan outline necessary requirements of the project and assign capable individuals to the necessary tasks.

1.4 General objective

To create a Project Management Plan for the Muffles College High School Running Track Construction in order to clearly outline the processes necessary for the Project Manager to apply the organizational resources in order to manage the construction of a 400m running track with 6 lanes, red in color, installed around the schools existing football field.

1.5 Specific objectives

1. To create a Project Scope Management Plan which will allow for the completion of the scope process groups, and will establish a management plan that defines, validates, and controls scope of the MCHS Running Track Project.

2. To develop a Project Schedule Management Plan in which the most detailed of this process will be Estimate Activity Resources process, to manage the completion of the project on time.

3. Design a Project Cost Management Plan to estimate, budget and control costs in such a way that the project is executed with the approved funds, so as not to exceed the estimate of the project.

4. Develop a Project Quality Management Plan where the processes and activities that determine responsibilities, objectives and quality policies are managed so that the project is executed satisfactorily.

5. To create a Project Human Resource Management plan in which the individual strengths and weaknesses will be identified and a synergistic relationship will be made to benefit all involved in the project.

6. To establish a Project Communications Management Plan to ensure adequate information flow and the proper documentation of the project development.

7. To create a Project Risk Management Plan that identifies all the risk of the project, implements all the necessary strategies and contingency plan in case the risk occurs.

8. To create a Project Procurement Management Plan to insure all the purchasing and contract need in the project have been meticulously reviewed and executed.

9. To create a Project Stakeholders Management Plan that list all the stakeholders that can affect positively or negatively the project, to insure an effective communication to ensure meet their needs or expectations.

2. THEORETICAL FRAMEWORK

The educational system in Belize has its roots in the English system which has been greatly influenced by the U.S. academic syllabus, primarily through the influence of the Jesuits. The Catholic Church, and to a lesser extent the Methodists and Anglicans, through agreements with the government, operate most of Belize's premier public schools under Church-State partnership that has its roots in Belize's history as a British colony. Muffles College High School is one such school. In Belize, the Ministry of Education, Youth, Sports and Culture is responsible for overseeing all schools. The mission is expressed in the following:

> *Is charged with the responsibility of ensuring that all Belizeans are given an opportunity to acquire that knowledge, skills, and attitudes required for their own personal development and for full and active participation in the development of the nation. In carrying out its mission, the Ministry of Education shall work in collaboration with all education stakeholders. (Abstract, Mission of Education Portfolio, 2014-2015)*

2.1 Company/Enterprise Framework

This Project Management Plan for the Construction of the MCHS Running Track will take place on the MCHS compound within the existing football field. This management plan is a guidance document and is intended to be flexible in its application. It is intended that revisions and improvements be made to the plan as warranted. Tidesun Co. Ltd has been awarded the contract to commence construction, and the respective Construction Manager is responsible for implementing the plan and issuing updates as appropriate.

Figures 1. MCHS Football Field and site of future Running Track.
Source: https://www.mufflescollege.com

This document outlines general activities, procedures, and requirements for meeting the expectations of MCHS under the guidance of the Tidesun Contractor and the Project Manager throughout the construction phase of the running track. These procedures must always be read and implemented in conjunction with the related Contract Conditions and specification section, which in the case of a conflict is more specific and supersedes these procedures. Compliance with these procedures is implicit with a Contract, and no additional measurement or payment will be associated.

2.1.1 Company/Enterprise background

In 1957, Muffles College which had begun as a two-year institution for young men went co-ed. Eight young women joined the fourteen young men who now constituted first and second forms. In 1960, Muffles expanded its curriculum to include all four high school years.

The Sisters of Mercy came to Muffles College in 1967 to replace the Jesuit community who was until then responsible for the school. They applied their usual determination to the mission of making Muffles College a respected and admired institution and were quickly successful. Today, Muffles College is a reference point when it comes to good quality education in Belize. Apart from creating academically successful individuals, “Mercy education aims to produce well-rounded, socially

conscious, spiritual members of society". (Muffles College High School Admissions Pamphlet, 2017). Financial Resources for MCHS and the per capita financing is made available by the Government of Belize (G.O.B.), which does not cover the salaries of all teachers. A fee of $675.00 is charged upon registering a student. This fee covers utilities, other expense, maintenance and balance of salaries.

The PMPlan is required to address the top priorities as mentioned above which include:

- Safety of the MCHS athletes
- Durability and Performance of the running track
- Maximum Protection on the Investment

The running track surface must be able to withstand the combined effects of compaction, abrasion, spike-damage, UV light, water, and variations in temperature. The dynamic interaction between the athlete and the surface is significant to the performance and safety of the athlete. The ultimate objective is to create a PMPlan, which follows the principles of Project Management, and ensure that Quality, Cost and Time are at a balance. The plan will ensure that the project will produce a facility that will provide performance for the athlete, value for the owner and longevity with ease of maintenance.

For these reasons, MCHS has contracted Tidesun Co. Ltd. which has focused on top quality sports material for over 10 years in China. Tidesun started as a R & D Company with many years of experiences of researching and developing new products, but now have become one of the leading suppliers in the sports material industry in China. Today, Tidesun is one of the top producers of quality sports material, such as high quality eco-friendly running track, all kinds of sports flooring, ground, artificial grass, shock pad, rubber granules and other new material. They have customers from both domestic market and oversea market. All the sales managers of the Oversea Market Department can speak fluent English which facilitates good communication. Their main sales market: "North America 20.00%, Europe 25.00%, and Middle East: 20%." (topsportsturf.com/about-us)

Figure 2: Tidesun Product Market

Source: http://www.topsportsturf.com/about-us

2.1.2 Mission and Vision statements

The mission of MCHS reads as follow:

> Muffles College, a Roman Catholic Institution under the auspices of the Sisters of Mercy, commits itself to quality education that is relevant to the needs of a Belizean society. It strives to develop the total person- spiritually, morally, psychologically, intellectually, emotionally, physically, and socially- in keeping with the teachings of Jesus and in the Mercy tradition. It also seeks to create, through active participation of all concerned, an environment of harmony, tolerance, and respect for individual differences (mufflescollege.com/mission-statement, 2014.)

The vision for the running track as expressed through an interview with the Principal is to create an energized atmosphere for students, alumni, and fans which will help to do the following:

- Construct a state of the art running track for the MCHS students
- Bring nationwide prominence to MCHS
- Provide an environment that will attract the nation's top athletes

2.1.3 Organizational Structure

MCHS presently has six hundred and fifty (650) students enrolled, with thirty-eight (38) teachers, eleven (11) administrative and maintenance staff, two (2) vice-principals and one (1) head principal. The school is overseen by the Sisters of Mercy and has a Board of Governors comprising of eight (8) members.

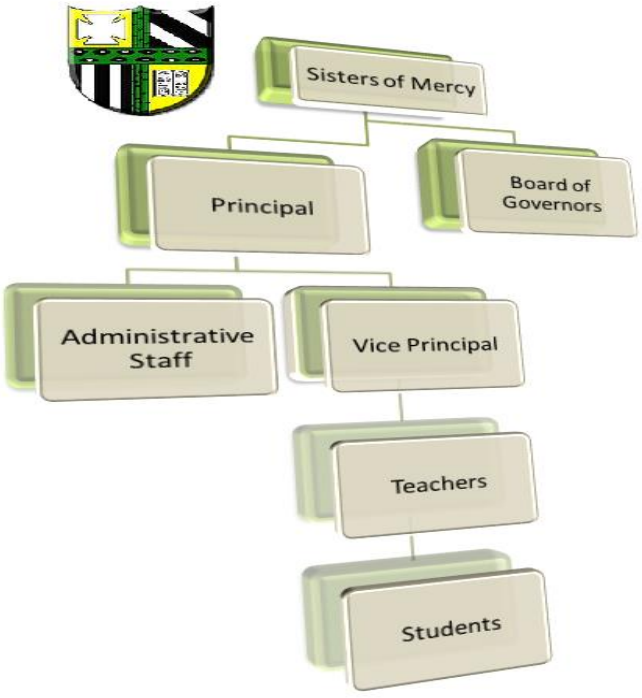


Figure 3: MCHS Organizational Chart.

Source: Own Elaboration

2.1.4 Products Offered

The school is located on 28 acres of land. It comprises of the following structures:

- 20 classrooms
- 1 Science Lab
- 1 Conference Room
- 2 Computer labs
- 1 football field
- 1 Basketball court
- 1 Volleyball court
- 1 Bike Shed
- 1 Cafeteria
- 1 snack shop
- Faculty rooms with bathrooms
- 1 centralized office
- 1 electronic Billboard
- 1 Chapel
- 24hr Security & Cameras
- 1 male student bathroom
- 1 female student bathroom
- Auditorium: 16,000 square feet

As with any high school, MCHS provides core subjects as seen below:

FRESHMAN **CORE**	CR.HRS	SOPHOMORE **CORE**	CR HRS
ENGLISH (LANGUAGE)	6	ENGLISH (LANGUAGE)	6
ENGLISH (LITERATURE)	5	ENGLISH (LITERATURE)	5
MATHEMATICS	7	MATHEMATICS	7
RELIGION	5	RELIGION	5
SPANISH	5	SPANISH	5
INTEGRATED SCIENCE	6	INTEGRATED SCIENCE	6
SOCIAL STUDIES	6	SOCIAL STUDIES	6
KEYBOARDING	4	INTERMEDIATE COMPUTER APP.	4
PHYSICAL EDUCATION	2	PHYSICAL EDUCATION	3
LIFE SKILLS	2	LIFE SKILLS	2
ELECTIVES	2	ELECTIVES	2
BASIC SKILSS MATH	2	BASIC SKILSS MATH	1
BASIC SKILLS LANGUAGE	2	BASIC SKILLS LANGUAGE	2
		ENGLISH LANGUAGE	5
*Students are placed in various Sport Houses for the purpose of intramural competitions.	1	MATHEMATICS	5
		READING/VOCABULARY	5
		COMPUTER LITERACY	5
*Each student is required to complete 25 hours of community service per year.		*Each course is offered daily for a period of three weeks, 50 minutes per class.	
	2	Students sit a final examination in each subject. The last day of S.E.P. is sports day.	

Figure 4: MCHS Core Subject Offerings
Source: https://www.mufflescollege.com

Physical Education (P.E.) is a requirement for all forms, first through fourth. This paper's objective is to create a Project Management Plan for the Muffles College High School Running Track Construction. This directly correlates to the improvement of the school's P.E. offerings and development of the students' physical development.

2.2 Project Management concepts

2.2.1 Project

The PMBOK 6th edition states “Projects are undertaken to fulfill objectives by producing deliverables. An objective is defined as an outcome toward which work is to be directed, a strategic position to be attained, a purpose to be achieved, a result to be obtained, a product to be produced, or a service to be performed.” (PMBOK 6th Edition, 2017, p. 4)

The MCHS PMPlan for the Running Track Construction will facilitate the analysis of the project, the project life cycle and the entire management functions needed from an owner’s perspective to identify proper roles of various activities and participants in all stages apart from the contractual engagements for different types of work. Project management for the MCHS project will deal mainly with coordinating resources and managing people and change.

2.2.2 Project Management

“Project management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements. Project management is accomplished through the appropriate application and integration of the project management processes identified for the project. Project management enables organizations to execute projects effectively and efficiently.” (PMBOK 6th Edition, 2017, p. 10)

This Project Management Plan for the Construction of the MCHS Running Track is to establish uniform policies and procedures that will be used by Tidesun Co. Ltd. construction management personnel and the Project Manager in order to implement technical and administrative tasks for the construction of the MCHS running track. Generally, “Managing a project includes: Identifying requirements, Establishing clear and achievable objectives, Balancing the competing demands for quality, scope, time and cost; Adapting specifications, plans, and approach to the different

concerns and expectations of the various stakeholders" (Project Management Institute (PMI, 2017).

2.2.3 Project Life Cycle

The PMBOK 6th edition notes, "A project life cycle is the series of phases that a project passes through from its start to its completion. It provides the basic framework for managing the project. This basic framework applies regardless of the specific project work involved. The phases may be sequential, iterative, or overlapping." (PMBOK 6th Edition, 2017, p. 19)

There are four project life cycle categories covered in the PMBOKO 6th edition. The Project Management Plan for the MCHS running track construction will utilize the Predictive life cycle approach. In a predictive life cycle, the three major constraints of the project, the scope, time and cost, are determined ahead of time not just at a high level, but in detail, as this PMPlan will outline.

The Project Manager, with guidance from the PMPlan, will be responsible for executing the plan in accordance to the pre-established guidelines. The table below provides a summary of the predictive life cycle, which will be observed with the MCHS Running Track Plan.

As per the PMBOK 6th edition, “A key thing to remember about life cycles is that each of them share the element of planning. What differentiates a life cycle is not whether planning is done, but rather how much planning is done and when. At the predictive end of the continuum, the plan drives the work. As much planning as is possible is performed upfront. Requirements are identified in as much detail as possible. The team estimates when they can deliver specific deliverables as well as when to perform comprehensive procurement activities.”

Topic	Predictive
Phases	Sequential, overlapping
High-Level Scope	Yes
Detailed Scope	At beginning of project
High-Level Planning	Yes
Detailed Planning	At beginning of project OR rolling wave
When Used	Product is well understood
Customer involvement	Beginning, when scope changes, and project end

Figure 5: Predictive Chart Summary (4squaresreview.com)

(PMI, 2017, p.20)

2.2.4 Project Management Processes

As per the PMBOK 6th edition, project management processes are “A systematic series of activities directed toward causing an end result where one or more inputs will be acted upon to create one or more outputs.” (PMBOK 6th Edition, 2017, p.18).

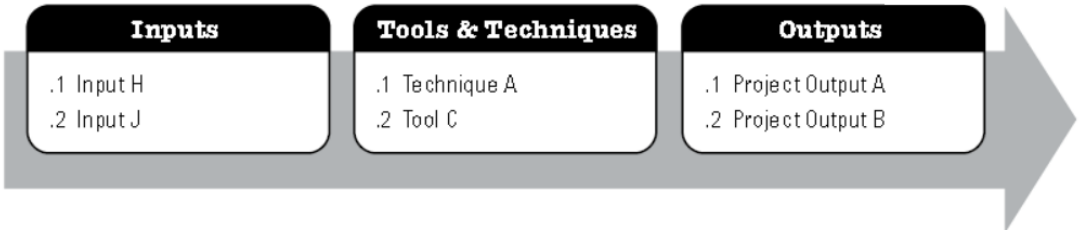


Figure 6: Example Process: Inputs, Tools & Techniques, and Outputs

(PMI, 2017, p.22)

For the PMPlan for the MCHS Running Track Construction, the outputs of one process will then become the inputs to other processes, and this is how they are connected together.

2.2.5 Project Management Knowledge Areas

As stated within the PMBOK 6th edition a “Knowledge Area is 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 6th Edition, 2017, p. 22)

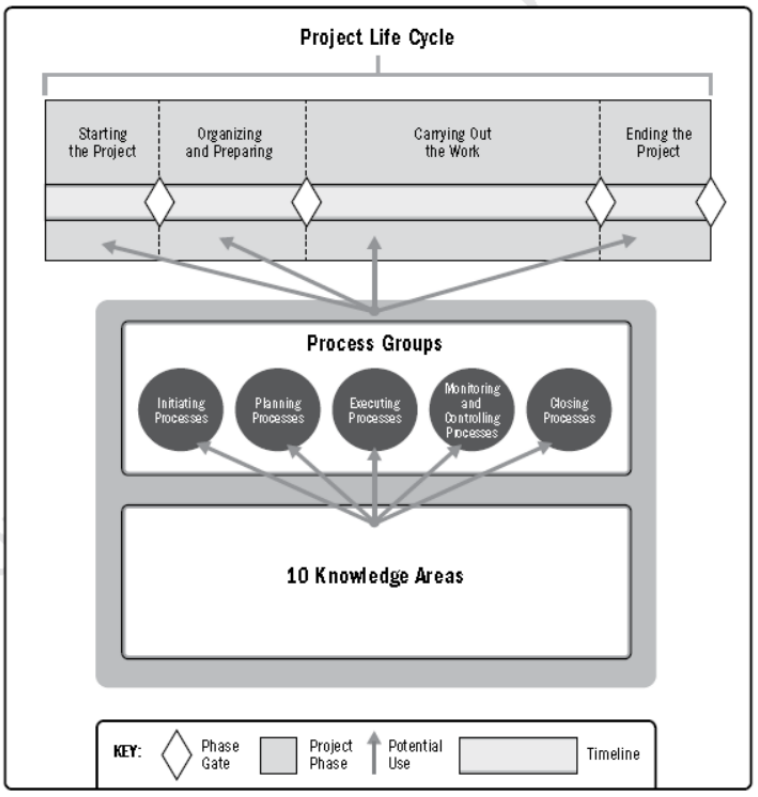


Figure 7: Interrelationship of areas
(PMI, 2017, p.18)

Project management and the requisite knowledge areas will assist the MCHS PMPlan to clarify goals and determine problem areas and risk as well as to isolate activities and easily monitor results. Furthermore, using PM enhances accountability, as works for the running track can be isolated and responsibilities can be assigned. Moreover, it helps to focus attention on few specific and important tasks.

The ten knowledge areas are listed below:

- Project Integration Management
- Project Scope Management
- Project Time Management

- Project Cost Management
- Project Quality Management
- Project Human Resources Management
- Project Communications Management
- Project Risk Management
- Project Procurement Management
- Project Stakeholder Management

Project Integration Management

This knowledge area is devoted to identifying and defining the work in the project that has been started via the Project Charter and further within the Project Management Plan for the MCHS Running Track Construction. This knowledge area also deals with efficiently integrating changes into the project.

Project Scope Management

For this project, this knowledge area deals with defining the project scope, project work, making the work breakdown structure, making the scope baselines and managing the scope of the project. This will allow the MCHS PMPlan to establish the strategies to keep the project within the established boundaries.

The deliverable of the project is a project management plan, which will describe every phase of a project. Ultimately, the project plan will outline the complete and comprehensive project plan for the construction of a 400m running track and field court with 6 lanes, red in color within a three (3) month span as seen in the rendering of the track below.

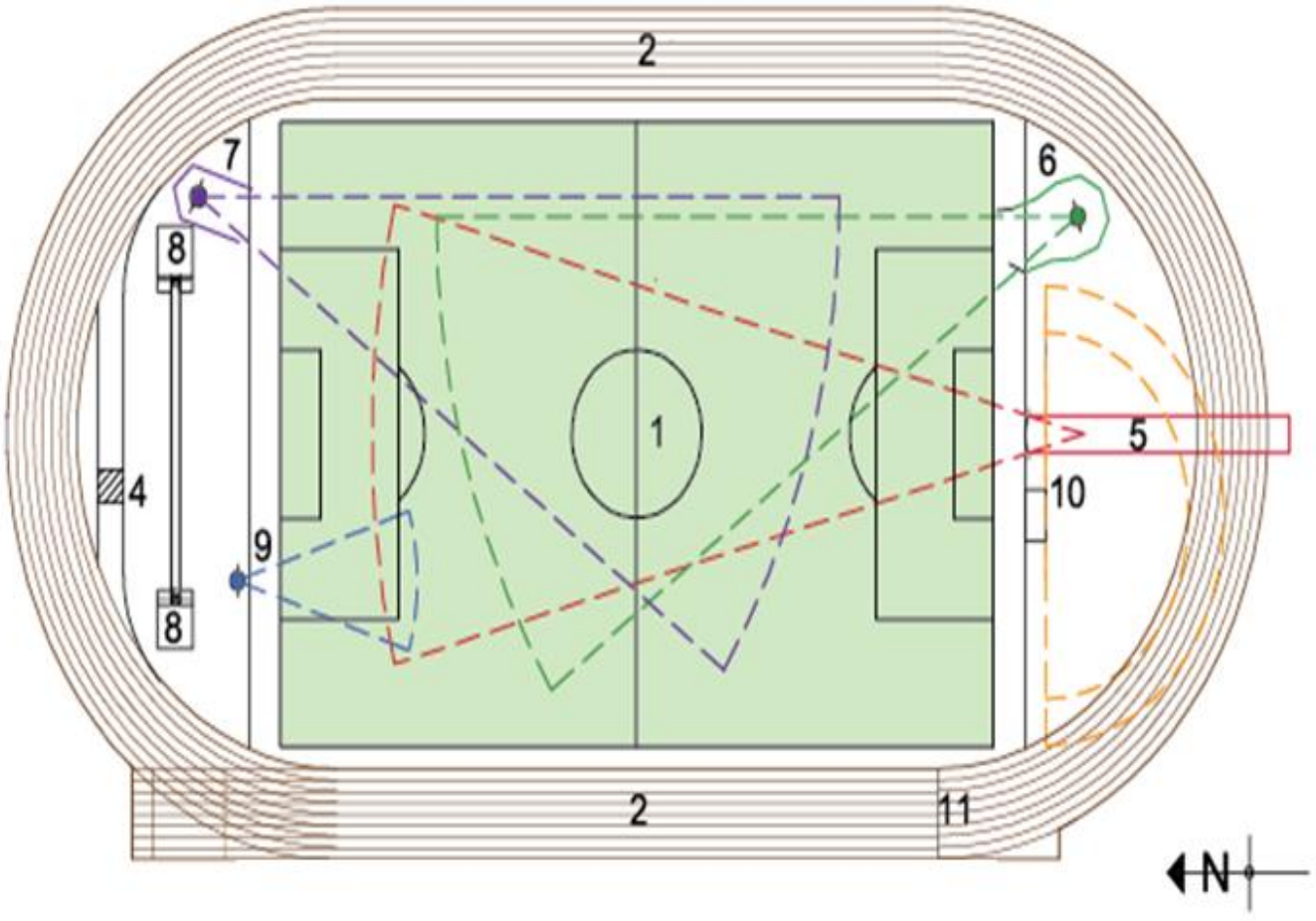


Figure 8: Tidesun rendering of Running Track.

Source: Tidesun

Project Time Management

The MCHS PMPlan will allow the project manager to document the estimate of duration of the tasks in this knowledge area. This is where the PM sequences the tasks and chooses the number of resources required to achieve the objective of the project. The running track schedule will be monitored and managed here via this knowledge area to keep the MCHS running track construction project on the track within the three (3) month span.

Project Cost Management

This area will outline the budget baseline and costs for the MCHS Running Track construction. The MCHS running track will revolve around a USD $200,000 budget.

Project Quality Management

The quality requirements for project deliverables are planned and tracked. In this area, all the quality issues are monitored and fixed for the construction of a 400m running track and field court with six lanes, red in color.

Project Human Resources Management

The HR management of the project, which due to the size of the MCHS Running Track construction project, will also be the function of the Project Manager, comprises of the defining the ways human resources will be utilized, developed, acquired and managed.

Project Communications Management

Here the project manager makes the communication management plan, ensures the plan is followed, and controls information flow within the project.

Project Risk Management

Project Risk Management consists of identifying risks, planning risk management, conducting risk assessments, and controlling risks.

The area concentrates on identifying, analyzing, planning responses to both ‘threat risks’ (negative) and ‘opportunity risks’ (positive).

Project Procurement Management

The PM will utilize this knowledge area to acquire required material for the successful completion of the project. The project manager will establish a plan for conducting procurements, controlling the procurements and closing out the procurements.

Project Stakeholder Management

Here the PM will recognize and satisfy the ones who are affected by the project. The affected party can either be internal or external, in nature. Stakeholders can have a powerful positive or negative impact on the project. Stakeholders include not only the project requester (Board of Directors, Faculty, Staff and Students) , but also team members who have worked on the project, contractors, suppliers, customers or the public, and many other people internal and external to the organization.

The figure below as per the PMBOK 6th edition succinctly describes all the knowledge areas and the major documents as they relate to the process groups. This diagram will help map the MCHS PMPlan for the Running Track Construction.

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	

Figure 9: Project Management Process Group and Knowledge Area Mapping

Source: (PMI, 2017, p. 25)

3. METHODOLOGICAL FRAMEWORK

In today's world, there is much greater access to a wider array of information sources than ever before. Listed below is a definition for the main types of information sources. The information source chosen for this FGP ultimately depends on what information is needed, why, and how much time there is to locate the required information.

3.1 Information sources

Information sources are distinguished by the form of representation: textual (books, journals, manuscripts), graphic (graphs, diagrams, plans, charts), and audiovisual (sound recordings, motion pictures, slides). Different information sources have arisen at various times, but they have all undergone significant evolution in the 20th century. The most important division of information sources was considered to be published and unpublished, since ideas and facts were acknowledged as introduced to scholarly use only after their publication, which implied wide dissemination and official registration of the corresponding documents. Information science has made a different division of information sources — into primary and secondary. (https://encyclopedia2.thefreedictionary.co/Information+Source)

3.1.1 Primary sources

Primary sources are firsthand documents that provide direct evidence on your topic. "A primary source is most often created during the time the events you are studying occurred, such as newspaper articles from the period, correspondence, diplomatic records, original research reports and notes, diaries etc. They may also include items created after the events occurred, but that recount them such as autobiographies and oral histories." (Primary, Secondary and Tertiary Sources, SIA New York Library Guide, https://sia.libguides.com/c.php?g=521408)

For the PMPlan for the MCHS Running Track Construction, the primary sources of information will be:

- Meeting minutes
- Photographs
- Personal interviews with:
    - Members of MCHS Board, Faculty and Staff
    - Key Stakeholders, such as outsourced construction Company
- Email correspondence with Tidesun Co.
- Observations

Chart 1 below provides further details on the specific primary information sources used.

3.1.2 Secondary Sources

Secondary Sources of information are accounts written after the fact with the benefit of hindsight. They are interpretations and evaluations of primary sources. “Secondary sources are not evidence, but rather commentary on and discussion of evidence.” (Primary, Secondary and Tertiary Sources, SIA New York Library Guide, https://sia.libguides.com/c.php?g=521408)

For the FGP the secondary sources of information are:

- Books
- Websites
- Documentaries

Chart 1 below provides further details on the specific secondary information sources used.

Chart 1. Information Sources. Source: (Own elaboration).

Objectives	Information sources	
	Primary	**Secondary**
To create a Project Scope Management Plan which will allow for the completion of the scope process groups, and will establish a management plan that defines, validates, and controls scope of the MCHS Running Track Project.	• Email Correspondence with Tidesun Co. • Discussions with local contractors • Board of Governors Meeting Minutes • Interviews with MCHS Principal, staff and students	• PMBOK guide 6th edition • Websites
To develop a Project Schedule Management Plan in which the most detailed of this process will be Estimate Activity Resources process, necessary in order to manage the completion of the project on time.	• Project Manager • Email Correspondence with Tidesun Co. • Discussions with local contractors.	• PMBOK guide 6th edition Websites outlining previous running track projects.
Design a Project Cost Management Plan to estimate, budget and control costs in such a way that the project is executed with the approved funds, so as not to exceed the estimate of the project.	• Board of Governors Meeting Minutes • Interview with MCHS Principal • Project Manager Interview	• PMBOK guide 6th edition • Websites
Develop a Project Quality Management Plan where the processes and activities that determine responsibilities,	• Project Manager Interview • MCHS Principal	• PMBOK guide 6th edition

objectives and quality policies are managed so that the project is executed satisfactorily.	• Email correspondence with Tidesun Co. • Interview with Local Contractor	• Websites • Research on International Standards
To create a Project Human Resource Management Plan where individual strengths and weaknesses will be identified and a synergistic relationship will be developed to benefit all involved in the project.	• Project Manager Interview • MCHS Principal • Email correspondence with Tidesun Co. • Interview with Local Contractor	• PMBOK guide 6th edition • Websites
To establish a Project Communications Management Plan to ensure adequate information flow and the proper documentation of the project development.	• Project Manager Interview	• PMBOK guide 6th edition • Websites
To create a Project Risk Management Plan that identifies all the risks of the project, implements all the necessary strategies and contingency plans in case the risks occur.	• Project Manager Interview	• PMBOK guide 6th edition • Websites
To create a Project Procurement Management Plan to guarantee all the purchasing and contract need in the project have been meticulously reviewed and executed.	• Email correspondence with Tidesun Co. • Interview with Local Contractor	• PMBOK guide 6th edition • Websites

To create a Project Stakeholders Management Plan that lists all the stakeholders that can affect the project positively or negatively to ensure that there is effective communication to enable their needs and expectations are met.	• Interviews with Project Manager, Board of Governors, Tidesun CO., staff and students, contractors, suppliers.	• PMBOK guide 6th edition • Websites

3.2 Research Methods

The business dictionary refers to research methods as the process used to collect information and data for the purpose of making business decisions. The methodology may include publication research, interviews, surveys and other research techniques, and could include both present and historical information. (http://www.businessdictionary.com/definition/research-methodology.html)

The FGP will study the PMPlan for the MCHS Running Track Constriction with research methods that will thoroughly examine the plan and present detailed and accurate information. The key to completing this section successfully is planning and organization.

3.2. Analytical Method

An analytical approach is the use of analysis to break a problem down into the elements necessary to solve it. This method sometimes “uses facts or information already available and analyses to make a critical evaluation” (Sridhar, 2008, slide 20). The approach one takes to solving a problem determines the probability of solving it. The analytical approach uses analysis to look much deeper into the problem, find its root causes, and then find out how to resolve the root causes. (http://www.thwink.org/sustain/glossary/AnalyticalApproach.htm)

Being able to apply critical thinking (e.g., application of analytical methods to reach decisions) (PMBOK 6th edition). The following chart will expound further on the Analytical method utilized.

Chart 2: Research Methods. Source: (Own elaboration).

Objectives	**Research methods**
	Analytical Method
To create a Project Scope Management Plan which will allow for the completion of the scope process groups, and will establish a management plan that defines, validates, and controls scope of the MCHS Running Track Project.	The analytical method will employ this particular knowledge area which ensures that the MCHS Running Track Poject stay on task and that everyone, including the project requester, understands what tasks will be included in the project to prevent frustrating changes and unmet expectations.
To develop a Project Schedule Management Plan in which the most detailed of this process will be Estimate Activity Resources process, to manage the completion of the project on time.	Analyzes of activity sequences, durations, resource requirements, and schedule constraints toc create the project schedule and time management plan.
Design a Project Cost Management Plan to estimate, budget and control costs in	The processes analyzed in cost management essentially involves planning, controlling, budgeting and estimating costs required for

such a way that the project is executed with the approved funds, so as not to exceed the estimate of the project.	undertaking the MCHS Running Track project so as to ensure that it is within the estimated/ approved budget.
Develop a Project Quality Management Plan where the processes and activities that determine responsibilities, objectives and quality policies are managed so that the project is executed satisfactorily.	The purpose of incorporating and analyzing this area into the selected project is to ensure standard and improved quality of the PMPlan to deliver the success completion of the MCHS running track construction. Areas to be analyzed for the project are Quality planning, quality assurance and quality control.
To create a Project Human Resource Management Plan where individual strengths and weaknesses will be identified and a synergistic relationship will be made to benefit all involved in the project.	The analysis of the stakeholders including all project sponsors, partners, client, customers, team members, and individual contributors will be evaluated.
To establish a Project Communications Management Plan to ensure adequate information flow and the proper documentation of the project development.	The analytical method will be employed by using this knowledge areas objective to create the documents that will comprise the communications management plan.

To create a Project Risk Management Plan that identifies all the risk of the project, implements all the necessary strategies and contingency plan in case the risk occurs.	The construction planning and development essentially involves certain events that might potentially affect the level of success for the project. For this purpose, the analysis of a risk management plan is essential. This area will cover.
To create a Project Procurement Management Plan to insure all the purchasing and contract need in the project have been meticulously reviewed and executed.	The potential hiring of contractors or vendors to take on certain tasks will occur and this will need to be seamlessly integrated into MCHS Project. The plan and its analysis will help determining the suitable ways to manage procurement planning as well as contracts, multiple providers and establishing coordination within schedule and project execution.
To create a Project Stakeholders Management Plan that list all the stakeholders that can affect positively or negatively the project, to insure an effective communication to ensure meet their needs or expectations.	All stakeholders are not equally involved or impacted in the project. Therefore, this analytical method will assist in understanding how to engage these different types of stakeholders. For this reason, stakeholder analysis is necessary.

3.3 Tools

As per the PMBOK 6th edition “Tool is something tangible, such as a template or software program, used in performing an activity to produce a product or result.” (PMBOK 6th edition, 2017, p. 725).

“The primary purpose of project management tools is to help managers plan, execute and control all aspects of the project management process. Companies rely on key tools for managing a project to ensure that each task is completed on time and to balance staff workload for optimal time management. Because project management tools enhance resource efficiency and ensure project scope, such tools are especially important for project managers involved with large, complex projects.”(https://bizfluent.com/info-8320824-importance-project-management-tools.html). A summary of tools used in this FGP are outlined below.

Chart 3: Tools (Source: V. Johnston, Author, 2018)

Objectives	Tools
To create a Project Scope Management Plan which will allow for the completion of the scope process groups, and will establish a management plan that defines, validates, and controls scope of the MCHS Running Track Project.	• Flexibility Matrix • Work Breakdown Structure

To develop a Project Schedule Management Plan in which the most detailed of this process will be Estimate Activity Resources process, to manage the completion of the project on time.	• Define activities
	• Develop Schedule/ Activity List
	  ○ Estimate activity resources
	  ○ Estimate activity Duration

Design a Project Cost Management Plan to estimate, budget and control costs in such a way that the project is executed with the approved funds, so as not to exceed the estimate of the project.	• Estimate cost Determine budget
Develop a Project Quality Management Plan where the processes and activities that determine responsibilities, objectives and quality policies are managed so that the project is executed satisfactorily.	• Quality planning • Quality assurance • Quality Control Plan

To create a Project Human Resource Management Plan where individual strengths and weaknesses will be identified and a synergistic relationship will be made to benefit all involved in the project.	• Organizational Chart • Develop human resource plan • Roles and Responsibilities Chart
To establish a Project Communications Management Plan to ensure adequate information flow and the proper documentation of the project development.	• Plan Communication • Distribute information • Communication Request Forms • Change Management Plan
To create a Project Risk Management Plan that identifies all the risk of the project, implements all the necessary strategies and contingency plan in case the risk occurs.	• Plan risk management • Identify risk • Risk Probability Scale • Monitor Risk
To create a Project Procurement Management Plan to ensure all the purchasing and contract need in the project have been meticulously reviewed and executed.	Procurement Activity Plan • Plan • Conduct • Administer • Close procurements

To create a Project Stakeholders Management Plan that lists all the stakeholders that can affect positively or negatively the project, to ensure an effective communication to ensure meet their needs or expectations.	Stakeholder Framework • Identify Stakeholders • Manage stakeholder expectation • Power / Interest Grid

3.4 Assumptions and Constraints

The PMBOK 6th edition classifies an assumption as “a factor in the planning process that is considered to be true, real, or certain, without proof or demonstration.” It also defines a constraint as “a limiting factor that affects the execution of a project, program, portfolio, or process.” (PMBOK 6th edition, 2017, p.699, 701). The assumptions and constraints can be identified and documented throughout the project’s life cycle. These parameters play an important role during the planning process. Your risk management plan is heavily dependent on assumptions. If you failed to properly analyze them, it may affect your project’s outcome. (https://pmstudycircle.com/2012/10/assumptions-and-constraints-in-pm/)

The project team should use these assumptions and constraints to identify potential risks that may affect project implementation and delivery or have a negative impact on end-user expectations.

General Assumptions and Constraints for the School

1. The establishment of a running track will attract more student intake and will result in increased economic activity for the upcoming school year in January.

2. The project is expected to encourage physical, educational, and recreational activities in a safe and green environment. The combination of sports science

and material science, factory prefabrication process can fully meet and reflect the athlete's professional requirements on the running track allowing MCHS to become more victorious in track and field activities.

3. With the running track, MCHS will be the only school in the country, apart from the National stadium to have a prefabricated running track therefore bringing nationwide prominence to the school.

Constraints

1. Certain construction techniques and expertise that may minimize the project execution duration are unavailable in the region and will need to be imported.

2. There could be a potential increase in cost due to unforseen events while developing the project if the scope changes.

The summary of assumptions and constraints for the FGP are outlined in chart 4 below.

Chart 4. Assumptions and Constraints (Source: Own Elaboration)

Objectives	Assumptions	Constraints
To create a Project Scope Management Plan which will allow for the completion of the scope process groups, and will establish a management plan that defines, validates, and controls scope of the MCHS Running Track Project.	It's assumed that the student has all necessary resources to construct a charter, which will be created before all other documents.	A time frame of three months for project completion may be insufficient. If necessary planning does not occur and resources are not available, time to deliver will increase.

Objectives	Assumptions	Constraints
		This may also increase project cost. The PMPlan and subsequent FGP may not be completed.
To develop a Project Schedule Management Plan in which the most detailed of this process will be Estimate Activity Resources process, to manage the completion of the project on time.	Proper identification of activities and persons responsible will be done.	The outsourcing of work may not meet expectations.
Design a Project Cost Management Plan to estimate, budget and control costs in such a way that the project is executed with the approved funds, so as not to exceed the estimate of the project.	It is assumed that the estimated cost will be within a reasonable range and not exceed the estimated budget.	When synthetic turf is considered as an option the concern is the upfront cost to install the field compared to a natural turf field. Price fluctuations can happen.
Develop a Project Quality Management Plan where the processes and activities that determine responsibilities, objectives	Prefabricated running tracks are made of environmentally friendly natural rubber and synthetic rubber to ensure that from the	Electricity and internet are unreliable on the area.

Objectives	Assumptions	Constraints
and quality policies are managed so that the project is executed satisfactorily.	source to avoid the source of the poisonous running track, the construction of a small amount of green glue to complete the construction of adhesive, rapid safety and environmental protection.	
To create a Project Human Resource Management Plan where individual strengths and weaknesses will be identified and a synergistic relationship will be made to benefit all involved in the project.	The project team and stakeholders assigned to this project are enough to complete the project.	Several contract workers will be required whose availability may be unknown
To establish a Project Communications Management Plan to ensure adequate information flow and the proper documentation of the project development.	It is assumed that all team members will understand the communications plan.	Lack of education and inability to speak English could affect the development of the project.

Objectives	Assumptions	Constraints
To create a Project Risk Management Plan that identifies all the risk of the project, implements all the necessary strategies and contingency plan in case the risk occurs.	It is assumed that no major risk will take place during the project.	Adverse weather conditions could prolong the project. All other project risk should be identified in the early stages of the project.
To create a Project Procurement Management Plan to ensure all the purchasing and contract need in the project have been meticulously reviewed and executed.	It is assumed that the purchasing of products will be done on time and in budget.	Market price fluctuations and uncertain custom duty charges could arise.
To create a Project Stakeholders Management Plan that lists all the stakeholders that can affect the project positively or negatively, to ensure that there is effective communication to enable their needs and expectations are met.	It is expected that the stakeholder management plan will list all relevant key stakeholders.	Stakeholders can switch positions and priorities and impede certain work from being completed.

3.5 Deliverables

As per the My Management Guide's website,

> A project deliverable is a tangible, measurable and observable output that is planned to be achieved or produced to accomplish a project or its separate part within a certain documented time period and at certain cost. In other words, deliverables are all the items (products and services) that are gained or produced upon project completion.
> (https://www.mymanagementguide.com/project-deliverables-statement/)

A summary of deliverables is outlined in chart 5 below.

Chart 5. Deliverables (Source: Own Elaboration)

Objectives	Deliverables
To create a Project Scope Management Plan which will allow for the completion of the scope process groups, and will establish a management plan that defines, validates, and controls scope of the MCHS Running Track Project.	Project Scope Statement: The narrative description of the project scope, including major deliverables, project objectives, project assumptions, project constraints, and a statement of work. Work Breakdown Structure: A deliverable oriented hierarchical decomposition of the work to be executed by the project team to accomplish the MCHS running track construction project objectives and deliver the required deliverables. Flexibility Matrix: Gives the team a tool for making tradeoff decisions once typical resource, time, or cost constraints arise during detailed requirements and planning work.

To develop a Project Schedule Management Plan in which the most detailed of this process will be Estimate Activity Resources process, to manage the completion of the project on time.	Activity definition: The major tasks and activities associated with the basic project deliverables are identified in order to produce the list of activities and a revised work breakdown structure using decomposition technique Activity sequencing: It deals with maintaining the interdependencies among the concerned activities by applying precedence and arrow diagram/ conditional diagram method. Activity duration estimating: For the individual activities, the required number of work periods is estimated for producing thee activity duration estimation and update of activity list. Schedule development: In order to develop the project schedule different tools and techniques such as critical path method, project management software (e.g. Microsoft Project) are applied and ultimately the final project schedule is developed. Schedule control: It is essential to control the changes in the schedule as and when change is necessary (Bolles and Hubbard 2015). For this purpose, a regular performance measurement is to be carried out for the MCHS Construction project.

Design a Project Cost Management Plan to estimate, budget and control costs in such a way that the project is executed with the approved funds, so as not to exceed the estimate of the project.	Approved budget: This particular process concerns with the allocation of costs into individual tasks/ activities. Resource planning: The resource planning involves identification of required resources such as equipment, people and materials along with the accurate number/ quantities of each of them. Cost estimating: It concerns with development of an estimation plan based on the costs for performing the project activities and proforma invoice. In addition to that, controlling costs also involves providing timely updates to the stakeholders about necessary changes in order to keep the costs within acceptable limits.
Develop a Project Quality Management Plan where the processes and activities that determine responsibilities, objectives and quality policies are managed so that the project is executed satisfactorily.	Quality assurance plan: Evaluating the project plan is essential to perform in a regular basis, which in turn provides a satisfactory quality standard to the project outcomes/ deliverables (Gomes 2013). Quality control plan: The project management plan needs to incorporate appropriate control techniques and methods for efficiently evaluating the desired outcomes and results.

To create a Project Human Resource Management Plan where individual strengths and weaknesses will be identified and a synergistic relationship will be made to benefit all involved in the project.	Human Resource Management Plan Staff acquisition: deals with acquiring human resources based on departmental project management expertise to work on the website development job. Team development: it is important to develop the PM team based on team member competencies for enhancing overall performance. Organizational Charts: Helps build and design the organization structure to meet the projects objectives. Roles and Responsibilities Chart: Is a chart in which the specific activities or obligations and those held accountable—or are assigned to—is outlined for the project team.
To establish a Project Communications Management Plan to ensure adequate information flow and the proper documentation of the project development.	Project Communications Management Plan and Matrix Information distribution: It concerns with making the required information available to certain groups of stakeholders by conveying appropriate messages following a specific approach. Communication Request Forms : It incorporates project status reports, performance measurement reports, progress tracking information, updates on individual works/ tasks and so on.

	Change Management Plan: Helps manage the change process, and also ensures control in communication, and resources.
To create a Project Risk Management Plan that identifies all the risk of the project, implements all the necessary strategies and contingency plan in case the risk occurs.	Project Risk Management Plan/ Risk Register Qualitative risk analysis: Risks that are identified are then analyzed based on their individual priority set for their impacts and probability of occurrence. Quantitative risk analysis: It deals with performing measurements of the risks based on their probability and consequences and severity of impact on the outcomes of the particular project undertaken (Morris 2013). Risk response planning: tools, techniques, procedures and methods are adopted for treating and mitigating the risks in order to reduce their impacts. Risk monitoring and control: Monitoring the identified potential risk events is significantly important for the project. Additionally, identifying new risks and residual risks are important.
To create a Project Procurement Management Plan to ensure all the purchase and contract needs in	Project Procurement Management Plan Source Selection Analysis: deals with documenting the major requirements along with an identification of the potential resources. Meetings: deals with actually obtaining bids, offers, quotations, and proposals.

the project have been meticulously reviewed and executed.	Source selection: Concerns with the process of selecting from a number of potential sellers. Contract administration: deals with management of the relationship among the company/ project authority and seller. Contract closeout: deals with completing and settling the contract.
To create a Project Stakeholders Management Plan that lists all the stakeholders that can affect the project positively or negatively to ensure that there is effective communication to enable their needs and expectations are met.	Project Stakeholder Management Plan Stakeholder Analysis & Matrix Identify Stakeholders – identifies by name and title the people, groups, and organizations that have significant influence on project direction and its success. Plan Stakeholder Management – identifies the strategies and mechanisms that will be used to achieve the greatest support of stakeholders and minimize resistance. Manage Stakeholder Engagement – outlines the processes and steps that will be undertaken to carry out the planned strategies. Stakeholder Power Interest Grid- Is a simple tool that helps categorize project stakeholders with increasing power and interest in the project. This tool helps to focus on the key stakeholders who can make or break the project.

4. RESULTS

As found within the PMBOK, the Scope Management Plan is “a component of the project or program management plan that describes how the scope will be defined, developed, monitored, controlled, and validated”. (PMBOK 6th edition, 2017, p.135). (PMI, 2017).

The plan will not only provide a roadmap for MCHS Running Track Project Manager to follow, but also exploring why it is the project manager's premier communications and control tool throughout the project. The initial Project Charter, as seen below, outlines the scope, objectives, and stakeholders involved in the project. It documents everything the project needs and its expected outcomes.

APPENDIX 1. PROJECT CHARTER (Source: Own Elaboration)

PROJECT CHARTER **Formalizes the project start and confers the project manager with the authority to assign company resources to the project activities. Benefits: it provides a clear start and well defined project boundaries.**	
Date	**Project Name:**
May 14th 2018	Project Management Plan for the Muffles College High School Running Track Construction.
Knowledge Areas / Processes	**Applicacion Area (Sector / Activity)**
Knowledge areas: **Scope, Time, Cost, Quality, Human Resources, Communications, Risk, Stakeholder and Procurement.** **Process groups:** **Planning, Execution, Closure, Monitoring.** **Planning:** This will entail creating a project plan, resource plan, WBS, and a communications plan. **Execution/Monitoring:** Here the deliverables will be built and strict control of the project delivery, scope, costs, quality, risks and issues will be kept. **Closure:** This will involve the winding-down of the project by releasing staff, handing deliverables over to the school and completing a review**.**	Construction
Start date	**Finish date**
October 2018	Feb 2018
Project Objectives (general and specific)	
General objective: The proposed running track project supports MCHS strategic goals of aligning sports and physical recreation encompassing an even greater variety of competitive options for male and female students. The new track would not only be the only one of its kind in the district but it would also provide the campus and community with a facility available for a wide variety of needs, 365 days a year. The following highlights the reasons this project is both necessary and timely: 1. Create an energized atmosphere for students, alumni, and fans 2. Bring nationwide prominence to MCHS	

3. Provide an environment that will attract the nation's top athletes

Specific objectives:

The design and project feasibility outcomes for the Muffles College High School Running Track will provide these specific objectives:

- Developing an internationally recognized running track to address the current lack of appropriate track and field training environment.
- The project provides will provide a new avenue which will aid in immersing a fan in a sporting event – this new interaction will promote more fan participation and increase the satisfaction of the entire sporting experience.
- Contributing to the urban design of the school and community
- Supporting all performance levels of play, practice and events.
- Contributing to the excellence of MCHS in the area of sports and community organizations which it supports.
- Serving the functional needs of numerous sport activities at one location
- Community Wellness in which the project will not only benefit the alumni but benefit the health, well-being and social development of the community (particularly children and youth (based on demographics))
- For business, this project can generate new revenue streams through targeted marketing to other institutions via rental opportunities.
- The Project will consider industry best practices and provide the alumni and community with a running track constructed with sound project management

Project purpose or justification (merit and expected results)

Studies suggest that student athletes are less likely to participate in unhealthy or risky behavior when they are playing sports in high school. A 2002 study by the Department of Education found that students who spent no time in extracurricular activities in high school were forty nine (49) percent more likely to use drugs and thirty seven (37) percent more apt to become teen parents. Just four (4) hours in an extracurricular activity like sports each week dramatically improved those numbers.

For these reasons Muffles College High School (MCHS) has encouraged sports such as basketball, football, volleyball and now the need for a track and field running facility. For the students who have a passion for track and field, they practiced and trained around the football field whose surface did not safeguard the athletes nor was it conducive for optimal performance due to its uneven terrain.

The proposed running track project supports MCHS strategic goals of aligning sports and physical recreation encompassing an even greater variety of competitive options for male and female students. The new track would not only be the only one of its kind in the district but it would also provide the campus and community with a facility available for a wide variety of needs, 365 days a year. The project management plan will add structure to the process by assigning an order to all the important parts involved in the plan.

Other merits of the plan include:

- (i) The development of a Project Charter
- (ii) Develop Preliminary Project Scope Statement
- (iii) Develop Project Management Plan
- (iv) Scope Planning
- (v) Risk Analysis etc.

Proper monitoring and guidance will be in place via the plan in order to work will be executed to accomplish the project objectives.

The following highlights the reasons this PMPlan for the Muffles College High School Running Track Construction is both necessary and timely. The main expected result of the PMPlan is the advancement and understanding of the services and procedures necessary to execute the MCHS running track project.

- The plan will establish the project boundaries, scope and deliverables
- Will identify the project management team, project stakeholders and will indicate the project schedule and major milestones
- Will establishe baseline plan for schedule, scope and cost which will provide a tracking mechanism against a established baseline and will help in project performance reporting

The PMPlan will ultimately improve the monitoring and control of project activities geared towards the execution of the MCHS Running Track. It will identifiy existing resources and indicates additional requirements needed to successfully complete the project and meet stakeholders expectations.

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

The MCHS Running Track Project will be elaborated and guided by a Project Management Plan which will describe every phase of a project. The components include, planning, executing, monitoring and controlling, and closing. Ultimtaley the project plan will outline the complete and comrehensive project plan for the construction of a 400m running track and field court with 6 lanes, red in color within a three (3) month span.

The charter provides the opportunity for the sponsor to authorize the project based on measurable objectives in relation to a business need, and defined parameters such as scope, milestones, roles, responsibilities, and budget. Project management plans require steps to be followed for the successful completion of a project. The knowledge areas also greatly assit in providing structure to the execution of the plan. The PMPLan specific objectives include :

1. Project Integration Management- This is the umbrella that covers all the other project management knowledge areas related to the MCHS Running Track. It knits together all the individual processes and tasks into one project with defined goals and deliverables. This Project Charter is one of the first steps towards achieving this.

2. To create a Project Scope Management Plan which will allow for the completion of the scope process groups, and will establish a management plan that defines, validates, and controls scope of the MCHS Running Track Project.

3. To develop a Project Schedule Management Plan in which the most detailed of this process will be Estimate Activity Resources process, necessary to manage the completion of the project on time.

4. Design a Project Cost Management Plan to estimate, budget and control costs in such a way that the project is executed with the approved funds, so as not to exceed the estimate of the project.

5. Develop a Project Quality Management Plan where the processes and activities that determine responsibilities, objectives and quality policies are managed so that the project is executed satisfactorily.

6. To create a Project Human Resource Management plan in which the individual strengths and weaknesses will be identified and a synergistic relationship will be developed to benefit all involved in the project.

7. To establish a Project Communications Management Plan to ensure adequate information flow and the proper documentation of the project development.

8. To create a Project Risk Management Plan that identifies all the risks of the project, implements all the necessary strategies and contingency plans in case the risks occurs.

9. To create a Project Procurement Management Plan to ensure all the purchasing and contract need in the project have been meticulously reviewed and executed.

10. To create a Project Stakeholders Management Plan that lists all the stakeholders that can affect the project positively or negatively, to ensure an effective communication to ensure meet their needs or expectations.

Assumptions

1. The establishment of a running track will attract more student intake and will result in increased economic activity for the upcoming school year in January.

2. The project is expected to encourage physical, educational, and recreational activities in a safe and green environment. The combination of sports science and material science, factory prefabrication process can fully meet and reflect the athlete's professional requirements on the running track allowing MCHS to become more victorious in track and field activities.

3. With the running track, MCHS will be the only school in the country, apart from the national statium to have a prefabricated running track therefore bringing nationwide prominence to the school.

Constraints

1. A time frame of three months for project completion may be insufficient.
2. Communications barriers may exist between project teams.

Preliminary risks

1. Adverse weather conditions
2. Inadequate preliminary studies may affect the total cost of the project.
3. Communication barriers.

Budget

- The MCHS running track will revolve around a USD $200,000 budget.

Milestones and dates

	PROJECT DURATION	69 Days	Mon 10/8/18	Wed 2/13/19		
1	**Design**	11 days	Mon 10/8/18	Mon 10/22/18		Board of Directors / Project Manager
1.1	Meeting with stakeholders	2 days	Mon 10/8/18	Tue 10/9/18		Project Manager
1.2	Skype meeting with Tidesun	3 days	Wed 10/10/18	Fri 10/12/18	2	PM/ Assistant Engineer
1.3	Develop project charter	3 days	Mon 10/15/18	Wed 10/17/18	3	Project Manager
1.4	Sign approved project charter	3 days	Thu 10/18/18	Mon 10/22/18		Board of Directors / Project Manager
2	**PLANNING**	12 days	Tue 10/23/18	Wed 11/7/18	4	Project Manager
2.1	Acquire project team	3 days	Tue 10/23/18	Thu 10/25/18		PM/ Assistant Engineer
2.2	Project Team Meeting	5 days	Fri 10/26/18	Thu 11/1/18	7	Project Team
2.3	Develop project management plan	4 days	Fri 11/2/18	Wed 11/7/18	8	Project Manager

3	**EXECUTION**	43 days	Thu 11/8/18	Mon 1/7/19		Project Team
3.1	Validate, survey and layout of the specified work	9 days	Thu 11/8/18	Tue 11/20/18	9	Assistant Engineer
3.2	Identify and marking all running track and event lines	9 days	Wed 11/21/18	Mon 12/3/18		Assistant Engineer/ Local Contractors
3.3	Install asphalt base and concrete foundation	8 days	Tue 12/4/18	Thu 12/13/18		Assistant Engineer/ Local Contractors
3.4	Apply micro foamed elastic layer	7 days	Fri 12/14/18	Mon 12/24/18	10	TIDESUN / Local Contractors
3.5	Apply high strength PU Layer	6 days	Thu 12/27/18	Thu 1/3/19	10	TIDESUN / Local Contractors
3.6	Define self-knot pattern polyurea layer (Top Layer)	4 days	Fri 1/4/19	Wed 1/9/19	10	TIDESUN / Local Contractors
4	MONITORING AND CONTROL	9 days	Thu 1/10/19	Tue 1/22/19		Project Manager
4.1	Paint official lines and Markings	4 days	Thu 1/24/19	Tue 1/29/19	11	Assistant Engineer/ Local Contractors
4.2	Risk Management	5 days	Wed 1/30/19	Tue 2/5/19		Project Manager
5	**CLOSING**	3 days	Wed 2/6/19	Fri 2/8/19		Board of Directors / Project Manager
5.1	Hand-over	1 day	Mon 2/11/19	Mon 2/11/19		Board of Directors / Project Manager
5.2	Document lessons learned	2 days	Tue 2/12/19	Wed 2/13/19		Project TEAM

Relevant historical information

Extensive research and due diligence was performed in allocating the appropriate contractors for the MCHS running track project to ensure the construction of a professional grade track. The contract was awarded to Jiangmen Tidesun Environmental Protection Material Co., Ltd.

Tidesun has focused on top quality sports material for over 10 years in China. They started as a R & D Company with many years of experiences of researching and developing new products but now have become one of the leading suppliers in the sports material industry in China. Today, Tidesun has been one of the top producers of quality sports material, such as: high quality ecofriendly running track, all kinds of sports flooring, ground, artificial grass, shock pad, rubber granules and other new material etc.

To ensure completion of the project within 5 months MCHS has also opted to utilize a prefabricated running track using natural rubber and synthetic rubber as the main raw material, made by curing, to ensure the maximum performance of the rubber composition. This “fast track” to constructing the running track is to make the new addition a feature to upsell the school for their September enrollment.

Stakeholders

Direct stakeholders:

- MCHS Board of Directors
- MCHS Students, Faculty and Staff

Indirect stakeholders:

- Orange Walk Community
- Students from other schools
- Project Manager
- Accountant
- Tidesun
- Suppliers

Project Manager: **Vanessa N. Johnston**	**Signature:** 
Authorized by:	**Signature:**

4.1. Project Scope Management Plan

The scope of work for the MCHS Running Track Project consists of the supply, installation and warranting of all materials, and products, including all labour, superintendence, equipment, and tools related to the construction of the work as herein specified and shown of the drawings. The specific scope of work consists of the following:

1. The supply and install of approximately 400m running track with 6 lanes, red in color, installed around the schools existing football field.
2. The accurate surveying and layout of the specified work program, including the painting of lines and event markings on a synthetic running track surface and adjacent areas as per the drawings and specifications herein. All lines and event markings are to be to the requirements of the International Amateur Athletic Association (hereafter referred to as the IAAF).
3. The marking of event labels on the synthetic running track surface identifying all event lines and markings.
4. The provision of three (3) references from owners who have the submitted product installed at a similar outdoor track & field facility. References must be for projects completed within the past 5 years.
5. Attend the site to review and accept in writing, in the presence of the Consultant, the asphalt base and adjacent concrete curbing planarity. All costs for attending this review are the responsibility of the synthetic running track surfacing Contractor.
6. Protection of the synthetic turf on the track oval infield from contamination and damage from the processes of the work.
7. Complete site clean-up is required upon completion of the work.

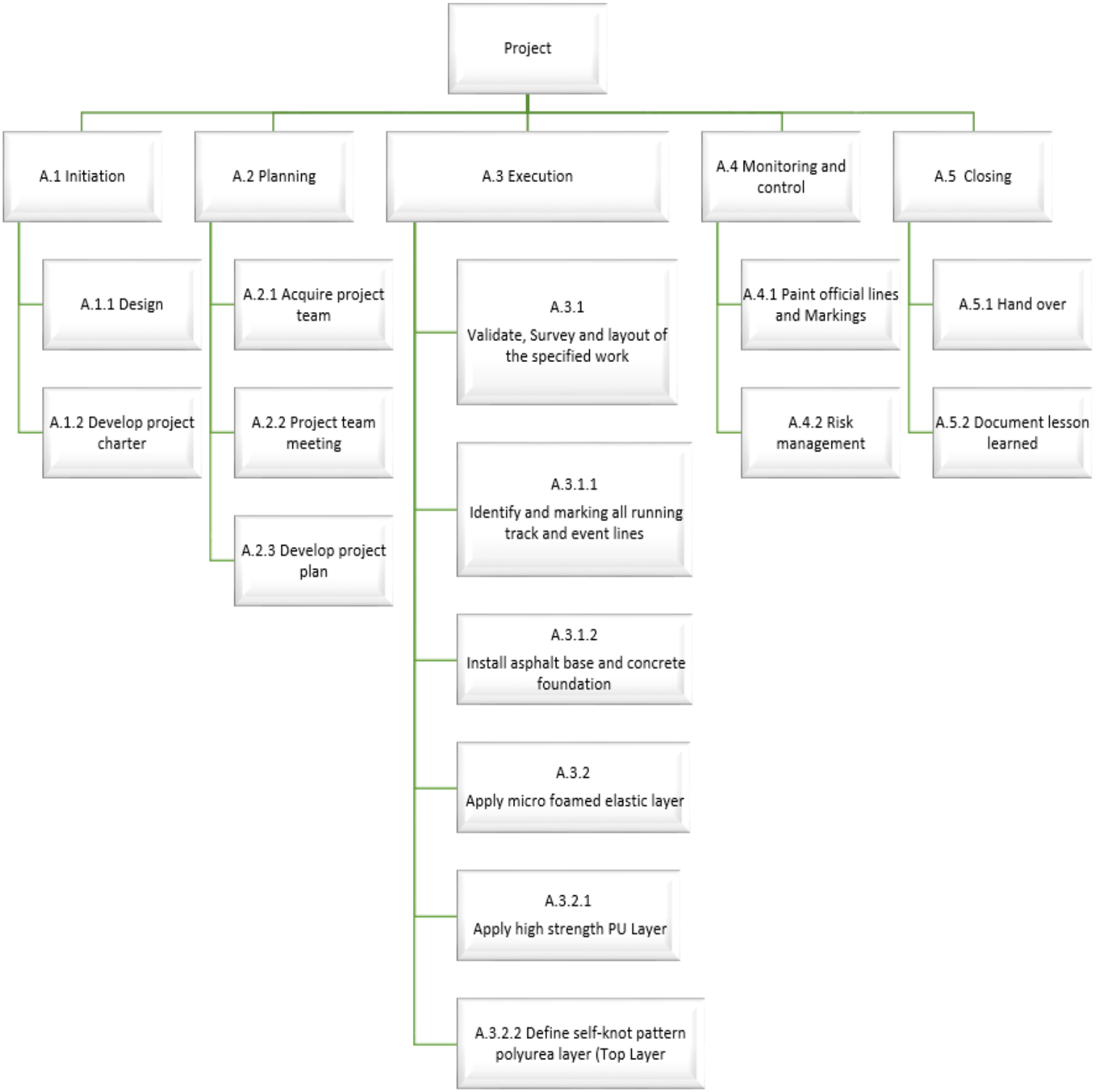
Table 1. Flexibility Matrix for the MCHS Running Track Project: (Source: Own Elaboration)

Flexibility	Rigid	Relatively Flexible	Flexible
Scope		X	
Schedule		X	
Cost	X		
Quality	X		

In this project, scope and schedule are relatively flexible because the deliverables and how these are achieved (No. of employees, type of equipment etc.) can be adjusted based on the availability. On the other hand, both cost and quality are rigid and where the least trade-off can be assumed. In this project, a budget has been established for the completion of activities as determined by the agencies and stakeholders that are investing. Since the project is aimed at improving the school and its students, the quality of work and impact cannot be negotiated. The project is required to ensure that the satisfaction and acceptance of the school community is priority because they represent the primary users and consumers of the facility.

Work Breakdown Structure: A deliverable oriented hierarchical decomposition of the work to be executed by the project team to accomplish the MCHS Running Track Construction Project objectives and deliver the required deliverables.

Chart 6. WBS Activity Sequence for MCHS Running Track Project.
(Source: Own Elaboration)



The WBS Dictionary for the MCHS Running Track Project contains all the details of the WBS, which are necessary to successfully complete the project. Most importantly, it contains a definition of each Work Package which can be thought of as a mini scope statement. Resources on the project will look at the WBS dictionary to determine the scope of the Work Package they have been assigned, so it's important to be clear when writing the definition.

Chart 7: WBS Dictionary. (Source: Own Elaboration)

Level	WBS Code	Element Name	Definition
1	1	**INITIATION**	MCHS running track project initiated.
1	1.1	Design	All design work to implement an athletics running track.
1	1.2	Develop project charter	Project Manager to develop the Project Charter.
2	2	**PLANNING**	The work for the planning process for the project.
2	2.1	Acquire Project Team	Team comprises primarily of PM, Assistant Engineer, Local Contractors and Tidesun.
2	2.2	Meeting with stakeholders	The work deliverables needed to be discussed to initiate the project.
2	2.2.1	Skype meeting with Tidesun	Because of location. A skype meeting with Tidesun to review deliverables.
2	2.2.2	Project Team Meeting	Project Manager conducts a formal kick off meeting with the project team, project stakeholders and project sponsor to determine the project team and requests the resources.
3	2.3	Develop project management plan	Under the direction of the Project Manager, the team develops the project plan.
2	2.3.1	Sign approved project charter	The Project sponsor reviews the Project Charter and signs the Project Charter, which authorizes the Project Manager to move to the Planning Process.
3	3	**EXECUTION**	The project plan is approved and the Project Manager has permission to proceed to execute the project according to the project plan.

3	3.1	Validate, Survey and layout of the specified work	Work involved in executing the project.
3	3.1.1	Identify and marking all running track and event lines	Work involved in executing the project.
2	3.1.2	Install asphalt base and concrete foundation	Work involved in executing the project.
3	3.2	Apply micro foamed elastic layer	Work involved in executing the project.
3	3.2.1	Apply high strength PU Layer	Work involved in executing the project.
3	3.2.2	Define self-knot pattern polyurea layer (Top Layer)	Work involved in executing the project.
4	4	**MONITORING AND CONTROL**	Final tests done to ensure running track specifications are fulfilled.
4	4.1	Paint official lines and Markings	Work involved in executing the project.
4	4.2	Risk Management	Risk management efforts as defined in the Risk Management Plan.
5	5	**CLOSING**	The work to close out the project.
5	5.1	Hand-over	The Project Sponsor formally accepts the project by signing the acceptance document included in the project plan.
5	5.2	Document lessons learned	The work involved for the control process of the project.

4.2. Project Schedule Management Plan

The most detailed section of this process will be activity sequencing and duration process, in which activity resource estimations are planned. This will outline who will perform an individual activity or if it will be outsourced; all these activities will be identified and determined for the MCHS Running Track which stakeholders foresee to be completeted by Spring 2019.

4.2.2 Define Activities

Define activities is the process of identifying and documenting the specific actions to be performed to produce the project deliverables.

Chart 8. MCHS Activity List. (Source: Own Elaboration)

MCHS Activity List			
Level			
A.1	**INITIATION**		
A.1.1	**Design**		Project Team
A.1.1.2	Meeting with stakeholders	Define objectives and expectations	Project Manager & Assistant Engineer
A.1.1.3	Skype meeting with Tidesun	Finalize requirements and needs analysis	Project Manager & Assistant Engineer
A.1.2	**Develop project charter**	Elaborate project charter	Project Manager
A.1.2.1	Sign approved project charter	Approval of project charter	Project Manager
A.2	**PLANNING**		
A.2.1	Acquire project team	Contractors/Team Selection	Project Manager
A.2.2	Project Team Meeting	Kick-off meeting	Project Manager
A.2.3	Develop project management plan	Documentation	Project Manager
A.3	**EXECUTION**		
A.3.1	Validate, Survey and layout of the specified work	Develop the specifications and dimensions for the running track	Assistant Engineer &Project Team
A.3.1.1	Identify and mark all running track and event lines	Ensure compliance with Ministry of Sports and recognized athletics running track	Assistant Engineer & Project Team
A.3.1.2	Install asphalt base and concrete foundation	Installation of asphalt base and initial foundation	Tidesun Specialist & Project Team

A.3.2	Apply micro foamed elastic layer	Tidesun Specialist will oversee the application of this first layer	Tidesun Specialist & Project Team
A.3.2.1	Apply high strength PU Layer	Tidesun Specialist will oversee the application of this second layer	Tidesun Specialist & Project Team
A.3.2.2	Define self-knot pattern polyurea layer (Top Layer)	Tidesun Specialist will oversee the application of this last layer	Tidesun Specialist & Project Team
A.4	**MONITORING AND CONTROL**		
A.4.1	Paint official lines and Markings	Contractors will apply official line markings	Project Team
A.4.2	Risk Management	Review risks	Project Manager
A.5	**CLOSING**		
A.5.1	Hand-over	Hand over the project to the MCHS	Project Manager
A.5.2	Document lessons learned	Document lessons learned	Development for Communication Specialist

4.2.3 Estimate Activity Duration and Sequence

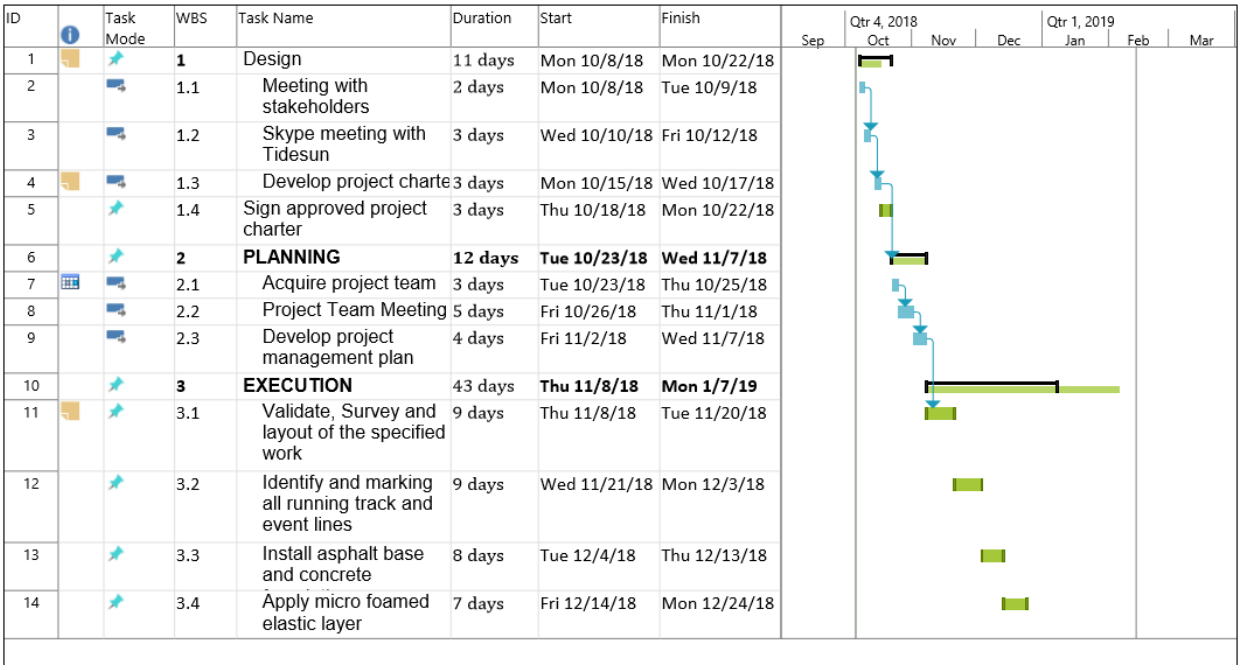
The PERT method as seen in Table 2 below, is a weighted average technique to determine the approximate duration of the MCHS Running Track Project. It uses three time estimates to determine an approximate average duration of an activity. During the project, resources may not be as readily available. This can have an effect on the schedule in which the Estimate Activity Duration helps to assist with.

“Activity duration estimates are quantitative assessments of the likely number of time period that are required to complete an activity” (PMI 2017, p. 172).

Table 2: Three Point Estimating (Source: Own Elaboration)

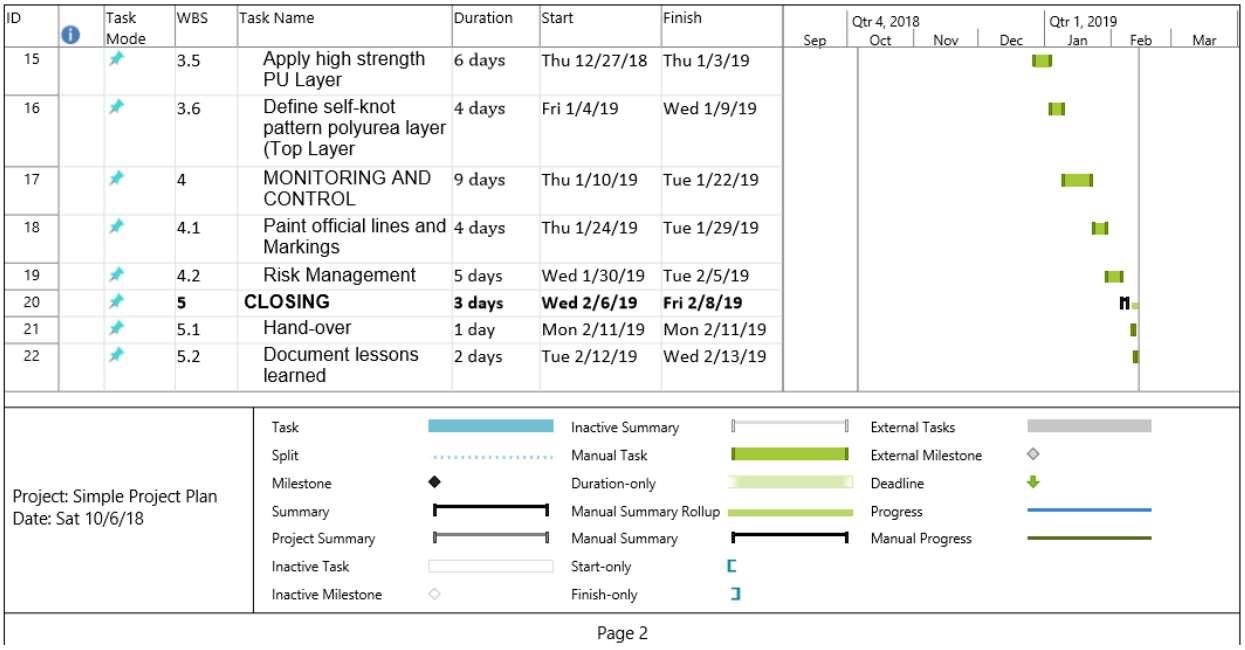
Description	Optimistic	Most likely	Pessimistic	Expected	Variance	Standard Deviation
	Duration	Duration	Duration	Duration		
INITIATION						
Design	9	11	14	67	0.69	0.83
Meeting with stakeholders	0.5	1	2	6.5	0.06	0.25
Skype meeting with Tidesun	0.25	1	3	7.25	0.21	0.46
Develop project charter	1	2	3	12	0.11	0.33
Sign approved project charter	0.5	2	3	11.5	0.17	0.42
Acquire project team	3	4	5	24	0.11	0.33
Project Team Meeting	1	2	3	12	0.11	0.33
Develop project management plan	1	3	5	18	0.44	0.67
Validate, Survey and layout of the specified work	2	3	4	18	0.11	0.33
Identify and marking all running track and event lines	2	3	5	19	0.25	0.50
Install asphalt base and concrete foundation	4	7	9	41	0.69	0.83

Apply micro foamed elastic layer	3	7	9	40	1.00	1.00
Apply high strength PU Layer	5	7	8	41	0.25	0.50
Define self-knot pattern polyurea layer (Top Layer)	3	5	7	30	0.44	0.67
Paint official lines and markings	3	4	6	25	0.25	0.50
Risk Management	1	2	4	13	0.25	0.50
Hand-over	0.5	1	3	7.5	0.17	0.42
Document lessons learned	1	2	4	13	0.25	0.50
					Critical Variance	0.94
					Critical Path Standard Deviation	0.98



ID	Task Mode	WBS	Task Name	Duration	Start	Finish
1		**1**	Design	11 days	Mon 10/8/18	Mon 10/22/18
2		1.1	Meeting with stakeholders	2 days	Mon 10/8/18	Tue 10/9/18
3		1.2	Skype meeting with Tidesun	3 days	Wed 10/10/18	Fri 10/12/18
4		1.3	Develop project charte	3 days	Mon 10/15/18	Wed 10/17/18
5		1.4	Sign approved project charter	3 days	Thu 10/18/18	Mon 10/22/18
6		**2**	**PLANNING**	**12 days**	**Tue 10/23/18**	**Wed 11/7/18**
7		2.1	Acquire project team	3 days	Tue 10/23/18	Thu 10/25/18
8		2.2	Project Team Meeting	5 days	Fri 10/26/18	Thu 11/1/18
9		2.3	Develop project management plan	4 days	Fri 11/2/18	Wed 11/7/18
10		**3**	**EXECUTION**	43 days	**Thu 11/8/18**	**Mon 1/7/19**
11		3.1	Validate, Survey and layout of the specified work	9 days	Thu 11/8/18	Tue 11/20/18
12		3.2	Identify and marking all running track and event lines	9 days	Wed 11/21/18	Mon 12/3/18
13		3.3	Install asphalt base and concrete	8 days	Tue 12/4/18	Thu 12/13/18
14		3.4	Apply micro foamed elastic layer	7 days	Fri 12/14/18	Mon 12/24/18

Figure 10: Gantt Chart (Source: Own Elaboration)



ID	Task Mode	WBS	Task Name	Duration	Start	Finish
15		3.5	Apply high strength PU Layer	6 days	Thu 12/27/18	Thu 1/3/19
16		3.6	Define self-knot pattern polyurea layer (Top Layer	4 days	Fri 1/4/19	Wed 1/9/19
17		4	MONITORING AND CONTROL	9 days	Thu 1/10/19	Tue 1/22/19
18		4.1	Paint official lines and Markings	4 days	Thu 1/24/19	Tue 1/29/19
19		4.2	Risk Management	5 days	Wed 1/30/19	Tue 2/5/19
20		**5**	**CLOSING**	**3 days**	**Wed 2/6/19**	**Fri 2/8/19**
21		5.1	Hand-over	1 day	Mon 2/11/19	Mon 2/11/19
22		5.2	Document lessons learned	2 days	Tue 2/12/19	Wed 2/13/19

Figure 11: Gantt Chart (Source: Own Elaboration)

4.2.4 Control Schedule

When needed, the Project Schedule will require amendments in which the Project Manager is responsible for making the necessary alterations as seen in the Change Control Schedule below. Meetings will be held in which the team will be apprised with any such impacts.

After any meetings regarding impacts in the project, the project manager will reformulate schedules and necessary resources to keep the project on track since this control provides a basis for schedule updates and corrective actions.

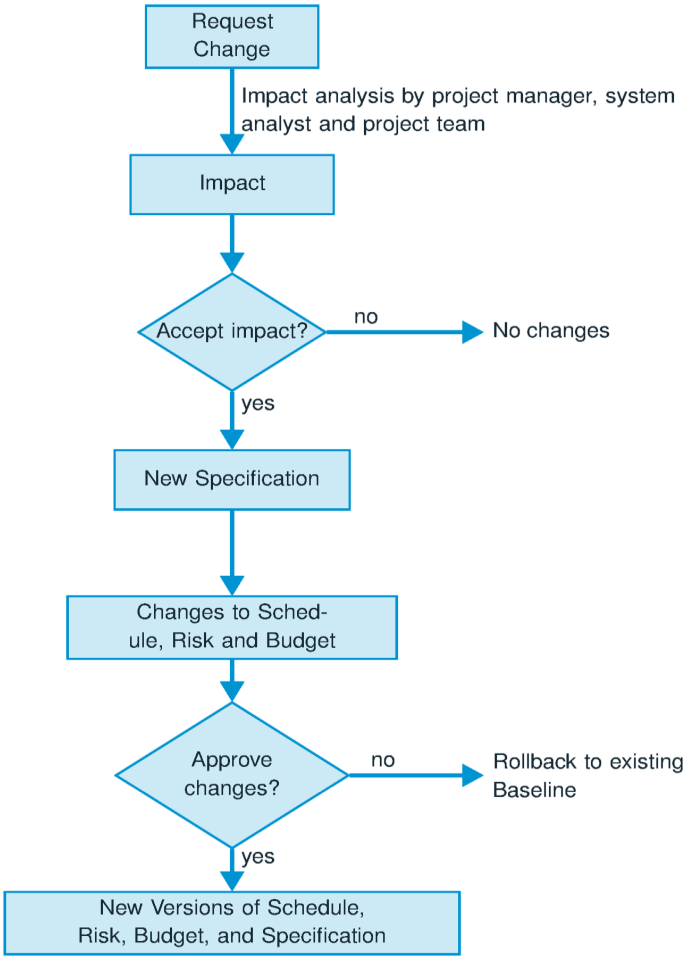


Figure 12. Schedule – Change control (Source: Technoparkcorp.com)

4.3. Project Cost Management Plan

The MCHS Running Track Project cost management process mainly aims to determine the cost of each activity, determine the budget of the project and maintain the budget.

4.3.1. Determine Budget

The PMPlan will continuously evaluate costs in order to avoid any surprises at the end of a project. The MCHS Running Track Project has a budget of USD $ 200,000.00. Its developmet helps to define the best use of funds, estimates work costs and resources necessary for the certain project.

Table 3: Project Budget (Source: Own Elaboration)

EXPENSE BUDGET: MCHS Running Track Project

Expense	Quantity	Unit Cost	Total
Project Manager	10	500 $	5,000.00
Assistant Engineer	10	350 $	3,500.00
Head Contractor Fees	10	200 $	2,000.00
Validate, Survey and layout of the specified work	2	120 $	240.00
Identifying all event lines and markings.	6	60 $	360.00
Wiring	10	40 $	400.00
Asphalt base and concrete foundation	4	600 $	2,400.00
TIDESUN as per PROFORMA		$	163,369.40
Clean-Up	4	30 $	120.00
Miscellaneous	1	1500 $	1,500.00
Sub-Total	$	168,389.40	
Contingency Reserve (7 %)		$	11,787.26
Sub-Total (Cost Baseline)	$	180,176.66	
Management Reserve (2 %)		$	9,008.83
Total Expenses		$	199,685.49

Jiangmen Tidesun Environmental Protection Material Co.,Ltd

PU Runway Flooring Series
Proforma Invoice

400m standard sized track and field court,6 lanes, red color. The area for the track and field+support area is about $3082m^2+3180m^2=6262m^2$

To: Muffles College High School Division — PI No.: MS20180418

Attn: Maria Johnston — Date: Apr.18,2018

13MM SPU/FULL PU RUNWAY FLOORING (CEMENT BASED MATERIAL USAGE PER SQUARE METERS DETAILS):

NO	Structure	Layer Name	Packing Specification (kg/Barrel)	Usage (kg/sqm)	quantity (sqm)	Unite Price (USD/kg)	Quantity(Barrel)	TOTAL Usage (KG)	Amount (USD/kg)	CBM
1	Permeable primer	Base Primer (F01)	16kg/barrel	0.2	6262	$3.10	79	1,264.00	$3,918.40	4.10
		Self-leveling Base Cover Layer (CP02T)	16kg/barrel	0.4	6262	$1.90	157	2,512.00	$4,772.80	8.10
2	Micro foamed elastic layer	Elastic/Cushion layer (CP02)	16kg/barrel	6	6262	$1.90	2,349	37,584.00	$71,409.60	121.00
3	High strength PU Layer	Strengthened Layer (CP03)	16kg/barrel	3.6	6262	$1.90	1,409	22,544.00	$42,833.60	72.50
4	Self-knot pattern polyurea layer (Top Layer)	Self-knot surface layer (CP05)	45kg/set	1.5	6262	$3.00	209	9,405.00	$28,215.00	10.80
TOTAL:(13mm Internation Standard Thickness include running track and pitch support area)							**4203**	**73,309.00**	**$151,149.40**	**216.50**
Freight cost(from Jiangmen to Belize)			**3pcs of 40HQ,1pce 20GP**						**$10,000.00**	
airfare(one way)									**$1,520.00**	
allowance for engineer							**10 days**	**$70/day**	**$700.00**	
TOTAL									**$163,369.40**	

Figure 13: Tidesun Proforma Invoice (Source: Tidesun)

Cost is one of the key performance indicators for projects. Involved in controlling costs for the MCHS Running Track are processes centered around planning, estimating, budgeting, financing, funding and managing costs so that the project can be completed within the approved budget. As seen above the budget is on target.

4.3.2 Change Control Process

As per the Schedule and Changes process in the budget, the cost of resources also would need to undergo the Change Control Process, if necessary.

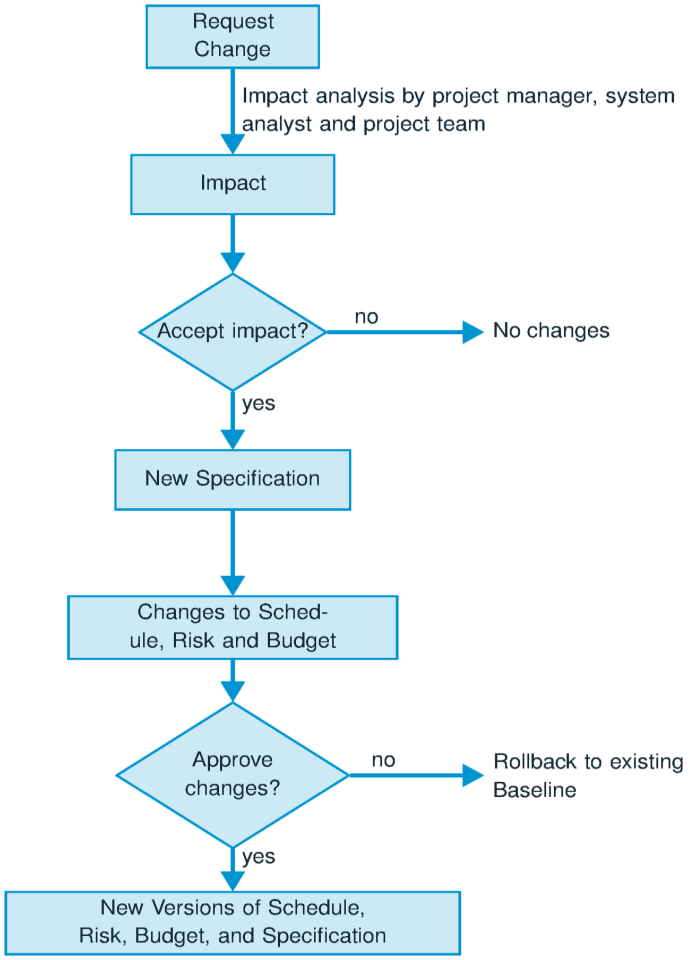


Figure 14. Schedule – Change control (Source: Technoparkcorp.com)

4.4. Project Quality Management

To devise and adhere to a Project Quality Management Plan where the goal of project quality management for the MCHS Running Track Project is to achieve consistency across the lifespan of the project.

The requirements of a synthetic surface for an athletics track are two-fold:

- Is it effective as an athletics surface?
- Is it durable - will it retain its effectiveness over a period of time?

An athletics facility should meet these requirements at the time of a competition. However, it is obvious that surfaces must retain their characteristics in the long-term, both because of the need to ensure a wide network of good quality facilities around the world, and as a matter of commercial prudence on the part of the owners of the facilities. Synthetic surfaced athletics tracks represent a considerable financial investment and it is only natural that they should be put to the best possible use.

It is important that, during construction, quality control of all aspects of the work is rigorously adopted. This should extend from the installation of the drainage system, through the entire project, to the application of the finished synthetic surface and line markings.

4.4.1 Plan Quality Management: Tools and Techniques

Cost of Quality as seen below, “is a methodology that allows an organization to determine the extent to which its resources are used for activities that prevent poor quality, that appraise the quality of the organization's products or services, and that result from failures.” (http://asq.org/learn-about-quality/cost-of-quality.html)

Table 4. Cost of Quality (Source: Own Elaboration)

Cost of Conformance	Cost of Non-conformance
Accurate measurements	Improper measurements
Proper equipment	Equipment breakdowns
Schedule management	Rework
Inspections & testing	Lost business
Reporting	

4.4.2 Quality Control Plan

In order to keep a close eye on what is happening internally and externally, the strategy should first be reviewed daily. Benefits to be derived from the intended reviews are as follows:

- The team would get a sense of the progression
- The reviews would bring to light the accomplishments in terms of achieving goals and objectives and failures in terms of what has not been accomplished
- The setbacks in strategy would be brought to the forefront, as well as the possible causes of the setbacks would be revealed as the reviews are conducted
- A weekly review will be set aside to do the following:
    - To revamp the strategy where necessary and to get it realigned to what it was initially intended or perhaps with some improvements
    - To measure the actual performance against planned or expected performance to help determine the way forward
    - To analyze any variance and to make the necessary adjustments.

4.5 Project Human Resource Management

Successful project management relies on how project managers manage teams and their communications. We will use multiple communication channels to exchange ideas, information, and reports.

According to the PMI (2017), Project Human Resource Management includes “the processes that organize, manage, and lead the project team. The project team is comprised of the people with assigned roles and responsibilities for completing the project.” The processes include:

- Plan Human Resource Management (Planning process group)
- Acquire Project Team (Executing process group)
- Develop Project Team (Executing process group)
- Manage Project Team (Executing process group)

Figure 15. Project Organizational Chart. (Source: Own elaboration)

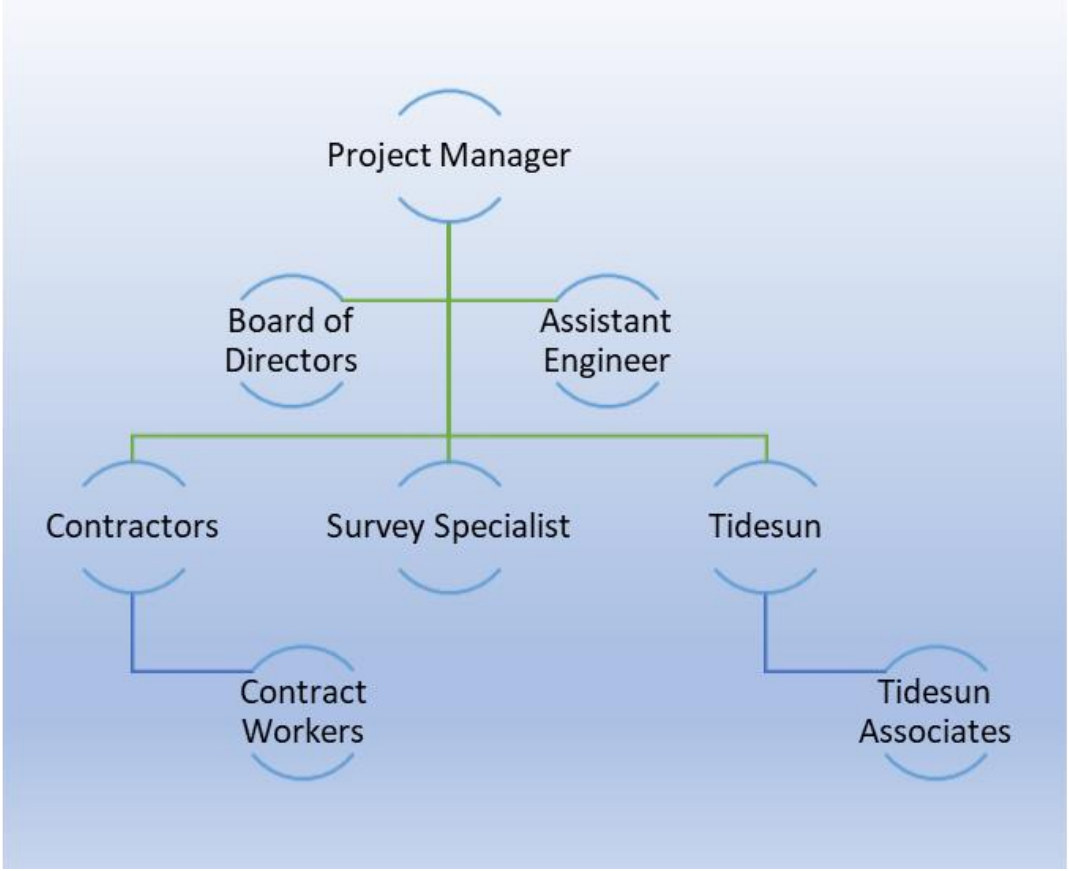


Chart 9. Roles and Resposibilities (Source: Own Elaboration).

Role	Responsibility
Project Manager	Managing and leading the project team. Managing co-ordination of the partners and working groups engaged in project work. Detailed project planning and control including: Developing and maintaining a detailed project plan. Providing status reports to the Muffles Board of Directors

Board of Directors	Championing the project and raising awareness Resolving strategic and policy issues Communicating with other key organizational representatives.
Assistant Engineer	Understand the current situation of project at all times Jointly estimate the work that will be assigned to them Plan and carry out work Report status of their work at team meetings Be accountable for the quality of all other parties work Suggest improvements to the project plan
Local Contractors	Act as main point of contact between the supplier and the organization. Oversees day-to-day management of contractors and the suppliers assigned to the project.
Survey Specialist	Survey and make appropriate demarcations Development of the line markings
Tidesun Specialist	Install running track along with local contractor assistance.

The RACI matrix outlined below denotes Responsible, Accountable, Consulted and Informed, which are four parameters used in this matrix for decision-making. The RACI chart will outline the activities undertaken for the completion of the MCHS Running Track Project and the persons who will either be held Responsible, Accountable, Consulted and/ or Informed.

Table 5: RACI Matrix (Source: Own Elaboration)

	PERSON				
Activity	Board Of Directors	PM	Assistant Engineer	Contractors	Tidesun
Design	C	R	A	R	C
Meeting with stakeholders	C	R	C	A	C
Skype meeting with Tidesun	I	A	C	I	R
Develop project charter	I	R	A	C	C
Sign approved project charter	A	R	C	I	I
PLANNING	C	R	C	I	A
Acquire project team	I	R	A	I	C
Project Team Meeting	I	R	A	C	I
Develop project management plan	I	R	A	C	C
EXECUTION	I	C	C	A	R
Validate, Survey and layout of the specified work	I	A	C	R	C
Identify and marking all running track and event lines	I	C	C	R	A
Install asphalt base and concrete foundation	I	A	C	I	R
Apply micro foamed elastic layer	I	R	A	R	R
Apply high strength PU Layer	I	A	C	R	R

Define self-knot pattern polyurea layer (Top Layer)	I	C	A	R	R
MONITORING AND CONTROL	I	C	A	R	C
Paint official lines and Markings	I	C	A	R	C
Risk Management	C	R	A	C	C
CLOSING	I	A	C	R	I
Hand-over	R	R	I	I	C
Document lessons learned	I	R	A	C	C

- **Responsible:** This is a person, who performs a task or work and he/she is responsible for the work.
- **Accountable:** Primarily the person in charge of the task or work.
- **Consulted:** Person, who gives feedback, contribute as and when required.
- **Informed:** Person in charge who needs to know the action or decision taken

4.5.1 Acquire Project Team

The Project Manager and the Assistant Engineer reserve all rights for the hiring of local contractors around the area who will be able to fulfil the project requirements. MCHS has contracted Tidesun to perform the final installation of the running track.

- **Training:** Contractors are expected to have the necessary knowledge and skill set to perform required tasks. Training will be implemented by Tidesun during the latter part of the execution phase in installing the imported synthetic track.
- **Team Meetings:** The project team will meet every week, or as necessary, via Skype with Tidesun and face to face with the local contractors in order to

disseminate information and provide updates as well as resolve any outstanding issues.

- **Resource Calendars:** This construction of the MCHS Running Track Project will have a duration of 69 days. The cycle is extended because of the several holidays experienced during the Christmas and New Year's season. The team also does not work on weekends unless there was a disruption in schedule, which requires immediate action and weekends to be worked.

Table 6: Resource Calendar (Source: Own Elaboration)

WBS	Task Name	Duration	Start	Finish	Predecessors	Resource Names
	PROJECT DURATION	69 Days	Mon 10/8/18	Wed 2/13/19		
1	**Design**	11 days	Mon 10/8/18	Mon 10/22/18		Board of Directors / Project Manager
1.1	Meeting with stakeholders	2 days	Mon 10/8/18	Tue 10/9/18		Project Manager
1.2	Skype meeting with Tidesun	3 days	Wed 10/10/18	Fri 10/12/18	2	PM/ Assistant Engineer
1.3	Develop project charter	3 days	Mon 10/15/18	Wed 10/17/18	3	Project Manager
1.4	Sign approved project charter	3 days	Thu 10/18/18	Mon 10/22/18		Board of Directors / Project Manager
2	**PLANNING**	12 days	Tue 10/23/18	Wed 11/7/18	4	Project Manager
2.1	Acquire project team	3 days	Tue 10/23/18	Thu 10/25/18		PM/ Assistant Engineer
2.2	Project Team Meeting	5 days	Fri 10/26/18	Thu 11/1/18	7	Project Team
2.3	Develop project management plan	4 days	Fri 11/2/18	Wed 11/7/18	8	Project Manager
3	**EXECUTION**	43 days	Thu 11/8/18	Mon 1/7/19		Project Team
3.1	Validate, Survey and layout of the specified work	9 days	Thu 11/8/18	Tue 11/20/18	9	Assistant Engineer

3.2	Identify and marking all running track and event lines	9 days	Wed 11/21/18	Mon 12/3/18		Assistant Engineer/ Local Contractors
3.3	Install asphalt base and concrete foundation	8 days	Tue 12/4/18	Thu 12/13/18		Assistant Engineer/ Local Contractors
3.4	Apply micro foamed elastic layer	7 days	Fri 12/14/18	Mon 12/24/18	10	TIDESUN / Local Contractors
3.5	Apply high strength PU Layer	6 days	Thu 12/27/18	Thu 1/3/19	10	TIDESUN / Local Contractors
3.6	Define self-knot pattern polyurea layer (Top Layer)	4 days	Fri 1/4/19	Wed 1/9/19	10	TIDESUN / Local Contractors
4	MONITORING AND CONTROL	9 days	Thu 1/10/19	Tue 1/22/19		Project Manager
4.1	Paint official lines and Markings	4 days	Thu 1/24/19	Tue 1/29/19	11	Assistant Engineer/ Local Contractors
4.2	Risk Management	5 days	Wed 1/30/19	Tue 2/5/19		Project Manager
5	**CLOSING**	3 days	Wed 2/6/19	Fri 2/8/19		Board of Directors / Project Manager
5.1	Hand-over	1 day	Mon 2/11/19	Mon 2/11/19		Board of Directors / Project Manager
5.2	Document lessons learned	2 days	Tue 2/12/19	Wed 2/13/19		Project TEAM

4.5.2 Change Control Process

Any changes to be experienced by the work team regarding responsibilities need to undergo the approval via the Change Control Process.

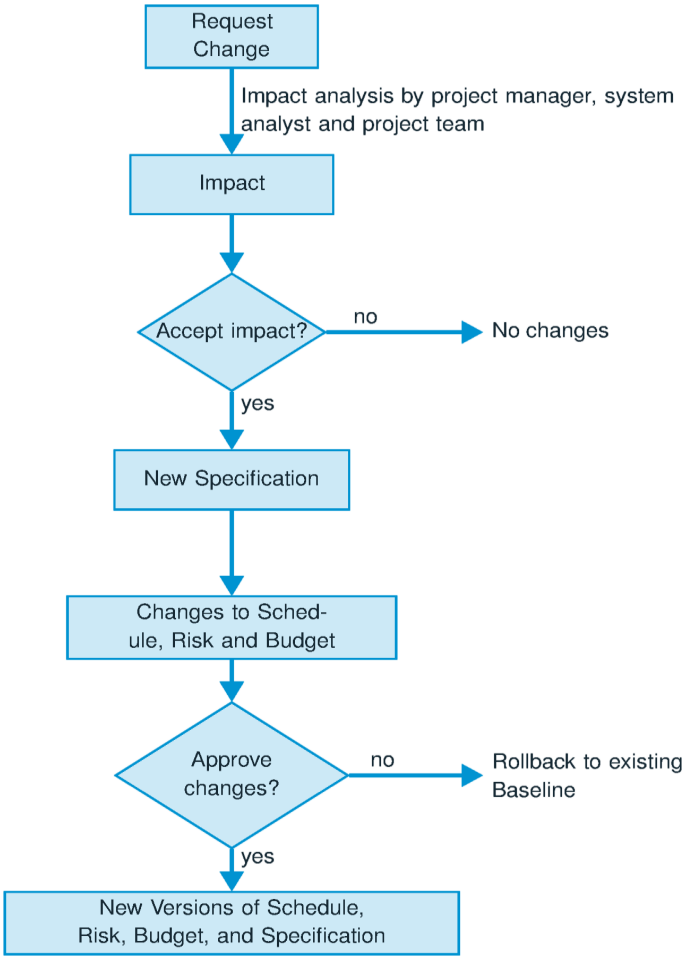


Figure 16. Schedule – Change control (Source: Technoparkcorp.com)

4.5.3 Manage Project Team

Managing a project team addresses specific team management challenges associated with the execution of the MCHS running track project. The project manager takes charge of managing the project team and ensuring success of team

management activities. The project manager should have and should use the following interpersonal skills for managing project team:

- **Leadership** Effective project managers strive to ensure that team morale remains high and that workers are motivated to perform well. Leaders can affect morale by helping to instill a sense of confidence and trust in workers so that they take a positive approach to their jobs and the company as a whole.

- **Influencing** and the ability to influence others is a fundamental skill that leaders must master in order to be effective. It is critical for bearing influence on project stakeholders and their decisions. The project manager needs to develop this interpersonal skill to reach mutual agreements with project team members and address critical issues. (ccl.org/articles/leading-effectively)

- **Effective decision making** is an ability to undertake the decision-making process, which entails conducting negotiations with stakeholders and project team for the purpose of studying environment factors, developing personal quality of team members, stimulating team creativity, and managing risks and opportunities. Effective decisions result from a systematic process, with clearly defined elements, that is handled in a distinct sequence of steps' (Drucker, 1967).

4.6 Project Communications Management

The MCHS Communications Management Plan is crucial to identifying who needs to know what and when before your project starts.

Methods for Progress

1. Interactive meetings & Presentations – Information Seeking
2. Interactive meetings & Presentations – Technical information & Education
3. Detailed programming meetings and questions

4. Task Matrix Review
5. Design Documentation (meeting minutes)
6. Design Documentation – Design Plans & Renderings
7. MCHS Board of Directors involvement and presentations
8. Periodic detailed cost estimates and budget reconciliation

4.6.1. Manage Communication

The benefit of the Manage Communications Process in project management is that it allows efficient communication flow among all stakeholders of the project. Managing communications are very important because it allows the project managers to relay the information to the stakeholders and make the right decisions based on the information.

As a manager and team leader, the aim will always be to help team members perform well, as quickly as possible. To do this, the model as seen below will be utilized to effectively manage communication at each stage.

4.6.2 Project Information Collection, Reporting, and Distribution

Information required as per the communications methods above must be collected, summarized, and reported in order to produce the communication outputs that fulfill the information requirements. Communicating tasks and deadlines across multiple stakeholders is challenging. The communication matrix below is an assessment tool designed to pinpoint exactly how the MCHS Running Track Project Team will communicate.

Table 7: Communication Matrix (Source: Own Elaboration)

Name/Nature of Communication	From	To	Content Provided By	Frequency	Format Used	Delivery Media
New Issues or Action Items	Program Manager, Project Managers and Team members, and other persons	Program Manager	Project Managers, Project Team Members, and other persons	(1) Weekly (via the Project Status Report) (2) As needed (via Program Manager) (3) As needed (via Stakeholder Meeting minutes)	(1) Project Status Report form (2) Stakeholder Meeting Minutes document	(1) E-mail (2) Written
Issue Items Status / Updates / Resolution	Program Manager, Project Managers	Program Manager	Program Manager, Project Managers, Project Team Members	Weekly (via the Project Status Report) Bi-weekly MCH B.O.D	(1) Project Status Report form	(1) E-mail (2) Notes Issued
Change Requests	Project Managers	Program Manager	Project Managers	As needed	Standard Change Request form	E-mail
Project Status Reports	Project Managers	Program Manager	Project Managers and Team Members	Weekly (by Wednesdays)	Standard Form	E-mail

Table 8. Communication Request Form (Source: Own Elaboration)

Report/Document Title	Project Status Report
Information Requirement	1. Reporting current project status 2. Identifying milestones 3. Discussing project issues and corrective actions. 4. Making key decisions for realization of project activities 5. Making Key decisions regarding financing
Information Provider	Project Manager
Collection Timeframe/Frequency	Weekly
Collection Method	Email

4.6.3 Schedule Change Management Process

The key principle of this process is that the changes should not just be reacted to but should also be controlled and communicated proactively. A schedule change management process will:

- Analyze the schedule to determine which areas may be need corrective action.
- Deciding what specific corrective actions should be taken.
- Revising the plan to incorporate the chosen corrective actions.
- Recalculate the schedule to evaluate the efforts of the planned corrective actions.

These changes must also be communicated. There are basic elements to communications in the context of change management.

Identifying the stakeholders and those impacted by the change by scheduling regular face-to-face interactions and email communications to keep stakeholders updated on progress is essential. As seen below a change management plan describes how changes will be monitored and controlled.

Table 9. Change Management Plan (Source: Own Elaboration)

MCHS Running Track Project Change Management Plan			
Title	**Frequency**	**Content**	**Usage**
Approved Change Requests	Weekly Team Meeting	Summary of the approved Change Requests (CRs) since last reported.	Keeps the project team and stakeholders informed about the changes being made.
Overdue Items	Weekly or as needed	Change Requests overdue	Discussed at Weekly Meetings

Completed Change Request Analysis	As Completed	A Change Request Analysis with information on impact to project scope, schedule and/or cost	Used by management to select course of action to resolve issue.
Metrics Report	Monthly	Number of CRs resolved, number of CRs overdue, number of days to resolve; number of rejected CRs	Discussed at the weekly management meeting

Communication should be consistent, thorough, and regular. Communication should also clearly explain the change, define the reasons for change, present the benefits of the change, and always include proper documentation of the change.

4.7 Project Risk Management Plan

There are no guarantees on any project. Even the simplest activity can turn into unexpected problems. Anything that might occur to change the outcome of The MCHS Running Track Project will be labelled a risk. A risk can be an event or any condition that was not forecasted to occur.

Proper risk management implies control of possible future events and is proactive rather than reactive. The MCHS Running Track Risk Management Plan will utilize the following processes will be utilized:

- Plan Risk Management (Planning process group)
- Identify Risk (Planning process group)
- Perform Qualitative Risk Analysis (Planning process group)
- Perform Quantitative Risk Analysis (Planning process group)
- Plan Risk Responses (Planning process group)
- Control Risks (Monitoring and Controlling process group)

4.7.1 Plan Risk Management

Risk management is an ongoing process that continues through the life of a project. It includes processes for risk management planning, identification, analysis, monitoring and control. Many of these processes are updated throughout the project lifecycle as new risks can be identified at any time. For the MCHS Running Track construction, it is the objective of risk management to decrease the probability and impact of events adverse to the project. On the other hand, any event that could have a positive impact should be exploited.

This plan documents the processes, tools and procedures that will be used to manage and control those events that could have a negative impact on the project. It is the controlling document for managing and controlling all project risks.

4.7.2 Risk Identification: Risk Breakdown Structure

Risk identification will involve the project team, appropriate stakeholders, and will include an evaluation of environmental factors, organizational culture and the project management plan including the project scope. Careful attention will be given to the project deliverables, assumptions, constraints, WBS, cost/effort estimates, resource plan, and other key project documents.

Prior to elaborating on the RBS the figure below describes the risk categories:

RISK SOURCE	DESCRIPTION
ENVIRONMENTAL CONDITION	Storms, earthquake, seaquake, flood, waters, air, soil pollution, consequential from other/previous activities existing in the reference area (e.g. nuclear tests) etc.
PROJECT MANAGEMENT	Poor project plans, inconsistencies among time, scope and cost, unrealistic project objectives, adequate level of project definition Human resources skill, project organisation, team locations Procurement plans & strategies, contractor claims
TECHNICAL	Reservoir uncertainties, drilling technologies, innovative technologies, challenging operating conditions, logistic design criteria, technical assumptions, uncertain data design changes
EXTERNAL FACTORS	Geo political conditions, media, authorities, laws and regulations, taxes and duties, inflation, currency fluctuations, political instability, local rules and habits, unions, environmental groups, competing projects
MARKETPLACE	Company's product market, i.e. new competitors, increase/ decrease of demand, change in oil/gas price, etc.

Figure 17: Risk Categories.

Source: (https://www.pmi.org/learning/library/link-qualitative-quantitative-risk-)

The RBS is an invaluable aid to understand the risks faced by the project. Just as the WBS forms the basis for many aspects of the project management process, so the RBS can be used to structure and guide the risk management process.

Chart 10: MCHS RBS (Source: Compiled by Author)

MCHS Risk Breakdown Structure Table		
RBS Level 0	**RBS Level 1**	**RBS Level 2**
0.All Sources	1.Technical Risk	1.1 Requests Definition
		1.2 Technical Know-how
		1.3 Estimates, assumptions, & constraints
		1.4 Unavailability of Equipment

of Risks		1.5 Use of Technical terminology by Tidesun
	2.Management Risk	2.1 Resource Management
		2.2 Operations Management
		2.3 Communication
		2.4 Staffing Issues
	3.Commercial Risk	3.1 Contracts -Terms and Conditions
		3.2. Partnerships with Local Contractors
		3.3 Sub-leasing Equipment
	4.External Risk	4.1 Surrounding Spaces
		4.2 Environmental/ Climate
		4.3 Funding
		4.4 Foreign Exchange
		4.5 Vandalism

Throughout all phases of the project, a specific topic of discussion will be risk identification. The intent is to instruct the project team in the need for risk awareness, identification, documentation and communication. Risk awareness requires that every project team member be aware of what constitutes a risk to the project, and being sensitive to specific events or factors that could potentially impact the project in a positive or negative way. Risk identification consists of determining which risks are likely to affect the project and documenting the characteristics of each. Risk communication involves bringing risk factors or events to the attention of the project manager and project team.

4.7.2 Probability Scale: Perform Qualitative Risk Analysis

The probability scale is a quantitative analysis method that will be used to assess the likelihood for potential risk to materialize. This tool will be used to ascertain the risks that are more likely to happen thus giving the Project Team an indication about which risk require more monitoring and the level of elaboration when planning risk response measures.

Chart 11. Risk Probability Scale and Legend (Source: Compiled by Author)

CAUSE	RISKS	CONSEQUENCE	PROBABILITY
High Demand/Low Supply	Unavailability of equipment	Delays	4
Supplier consolidated shipment in Miami for extended periods	Delays in the importation of equipment	Delays	4
Designated experts unavailable in time for start of project	Shortage of Alternative contractors/day workers	A key area of the project can be delayed.	3
Climate Change	Unpredictable Hurricane Presence	Belize is occasionally threatened by this unpredictable natural phenomenon hence any hurricane during execution of this project will affect time, cost and scope.	3
Ineffective communication methods and lack of interpersonal skills	Deficiency in communication	No cohesion among project team and management which negatively affects the tasks to be	2

		carried out and thus on project deliverables.	
Unavailability of specified material and changes in the cost of materials as per pro-forma invoice	Breach of contract	Increase cost of project with unavailable additional resources to bear additional cost.	1

Probability Scale Legend	
Scale	Probability
Very Low (1)	Very low probability of this happening as it has not happened before
Low (2)	Low probability, has happened once
Medium (3)	Medium probability, this has occurred 3 times before
High (4)	High probability, this has happened more than 5 times
Very High (5)	Very high probability, this usually happens

4.7.3 Perform Qualitative Risk Analysis

The main advantages of a quantitative approach are:

- Categorize risks requiring most consideration by quantifying their relative contribution to project risk
- Regulate the probability of achieving a specific project objective
- Quantify the risk contact for the project, and determine the size of cost and schedule contingency that may be needed
- Identify realistic and achievable costs, schedule, or scope targets for deviations.

This assessment is particularly used to forecast potential project schedule and cost results listing the associated confidence level for each potential value of the considered value.

4.7.4 Plan Risk Response

After the risk has been identified and evaluated, a risk mitigation plan, which is a plan to reduce the impact of an unexpected event, will be developed. The project team mitigates risks in various ways:

- Risk avoidance
- Risk sharing
- Risk reduction
- Risk transfer

These mitigation techniques will be operative means in reducing individual risks. The risk response plan uses expert knowledge in order to apply the best tactic and the actions the project management team will take to reduce or eliminate the risk.

Risk avoidance will involve the developing of an alternative strategy that has a higher probability of success but usually at a higher cost associated with accomplishing a project task.

Risk sharing involves collaborating with others to share responsibility for the risky activities. Collaborating with another company to share the risk associated with a portion of the project is advantageous when the other company has expertise and experience the project team does not have.

Risk reduction is an investment of funds to reduce the risk on a project. An example of this would be the need to hire an expert to review the technical plans or the cost estimate on a project to increase the confidence in that plan and reduce the project risk.

Risk transfer shifts the risk from the project to another party. The purchase of insurance on certain items is a risk-transfer method. The risk is transferred from the project to the insurance company.

4.7.5 Control Risks

For this project, a contingency of 7% of the total budget which amounts to $11,787.26 will be contingency funds set aside by the project team to address unforeseen events that cause the project costs to increase.

The popular adage states: If you fail to plan, you plan to fail. Project risk management dispels this notion because it sets the plan to first identify the risks that would most likely threaten the success of the project. In addition, the risk plan would provide a broad picture of the project as it relates to the entire risks (positive and negative) associated to that particular project. For example, the risk responses and their associated costs among other things would be highlighted. The key benefit of this process is to identify the various elements of the risk register (as per organization) to address the risks identified in an effort to reduce the likelihood of an impact.

4.8. Project Procurement Management Plan

The objective will be to identify a Project Procurement Management plan since in some cases or areas of the project; all the resources or labor will not be “in house” to complete a task. The potential hiring of contractors or vendors to take certain tasks will occur and this will need to be seamlessly integrated into MCHS Project. Those are:

- Plan Procurement Management (Planning process group)
- Conduct Procurements (Executing process group)
- Control Procurements (Monitoring and controlling process group)
- Close Procurements (Closing process group)

The project manager will work with the project team, contracts/purchasing department, and other key players to manage the procurement activities. The subsequent chart will proceed to outline the procurement activities which will be conducted taking into consideration the best practices exposed by the Project Management Institute.

Chart 12. Procurement Activities (Source: Compiled by Author)

	PMI	MCHS Procurement Plan
INPUTS	Project Management Plan	This describes how the procurement processes will be managed for the MCHS running track project with a budget of $200,000.00 USD.
	Project Documents	The project will follow the schedule as per the Activity List Chart and time durations allocated.
	Procurement Documentation	Formal quotation request will be required to solicit proposals from prospective contractors and sellers. Independent cost estimates are initially established within the respective budget. This will guide the acquisition process. All legal documents include an action plan with dates per agreed deliverable.
	Seller Proposal	We will expect a formal response to a procurement request received from an interested seller via a Price Quote or Bid.
	Enterprise Environmental Factor	A factor in this area are hurricane/excessive rain delaying project and/or sourcing of the equipment will have as a major impact in the timely and efficient execution due to potential issues with importation of goods.
	Organizational Process Asset	Listing of pre-qualified contractors/sellers will been established. Experience with sellers utilized by the school will be given high consideration.
TOOLS AND TECH-	Expert Judgement	Used to evaluate seller proposals, this will entail a multi-discipline review with the team's expertise in each of the areas covered by the procurement documents and proposed procurement contract.

NIQUES	Advertising	Lists of potential sellers may be expanded by advertisements in publications such as newspapers, websites, social media pages or trade publications.
	Bidder Conferences	Bidder conference is defined as the meeting between the buyer and sellers before the submission of proposals or bids. It is a process of selecting vendors that can provide the services and goods to a particular project.
	Data Analysis	Formal evaluation of contracts will be done by attorneys to ensure compliance with the law.
	Interpersonal and Team Skills	Managing contractors or suppliers require effective communication, interpersonal and negotiation skills to achieve the desired rehabilitation park prevent cost overruns and achieve timely completion of the park.
OUTPUTS	Selected Sellers	Based on quotations and risk evaluation selection of the contractor/sellers will be based on: • The competitive range based on the evaluation of their bid or proposal.
	Agreements	Includes terms and conditions that specify what the seller is to perform or provide to the buyer.

4.8.1 Conduct Procurements

Purchasing Plan

Procurement planning and the respective Purchasing Plan is the process of deciding what to buy, when and at what cost. The purchasing plan below outlines these requirements as well as the purchaser in charge of obtaining respective estimates.

Source Selection Criteria will also be used to rate or score seller proposals and can be objective or subjective. The selection criteria includes:

- Purchase price
- Item is readily available
- Understanding of project need
- Overall or life cycle cost – lowest total cost of ownership

- Technical capability
- Risk
- Management approach – can they develop and manage properly
- Technical approach
- Warranty
- Production capacity and interest
- Business size and type
- Past performance of sellers
- References

In addition to this list of procurement items, the following individuals are authorized to approve purchases for the project team:

Name	**Role**
Vanessa Johnston	Project Director
Danny Singh	Assistant Engineer

Chart 13: Purchasing Plan (Source: Own Elaboration)

WBS	Task Name	Start	Purchaser/ Resource Names	Cost
	PROJECT DURATION	Mon 10/8/18		
1	**Design**	Mon 10/8/18	PM/ Total Prints	$100
2	**PLANNING**	Tue 10/23/18		
3	**EXECUTION**	Thu 11/8/18		
3.1	Validate, Survey and layout of the specified work	Thu 11/8/18	Surveyor	$120
3.2	Identify and marking all running track and event lines	Wed 11/21/18	Contractor / Paint	$60
3.3	Install wiring and concrete foundation	Tue 12/4/18	Assistant Engineer/Local Contractor	$3,000

			Wire, Concrete, Mixer, Sand, Labour	
3.4	Apply micro foamed elastic layer	Fri 12/14/18	TIDESUN/ Imported Material	$163,369.40
3.5	Apply high strength PU Layer	Thu 12/27/18		
3.6	Define self-knot pattern polyurea layer (Top Layer)	Fri 1/4/19		
4	MONITORING AND CONTROL	Thu 1/10/19	PM/ Report Printing	$100
4.1	Paint official lines and Markings	Thu 1/24/19	Contractor/ Paint	$300

4.8.2 Contract Type

The purpose of the following section is to describe the type of contract to be used so the contracts and purchasing department can proceed accordingly. There are many different types of contracts like firm-fixed price, time and materials, cost-reimbursable, and others. Different procurement items may also require different contract types. A well-defined product may be a firm-fixed price while a product which will require a research and development effort may be a time and material contract.

All items and services to be procured for the MCHS Running Track Project will be solicited under firm-fixed price contracts. The project team will work to define the item types, quantities, services and required delivery dates. This firm fixed price contract is also applicable to TideSun who has been contracted to execute the major running track functions for USD $163,369.40.

4.8.3 Control & Close Procurements

In order to establish purchasing controls the following metrics are established for vendor performance for this project's procurement activities.

Each metric is rated on a 1-3 scale (1 – Unsatisfactory, 2 – Acceptable, 3 – Exceptional) as indicated in the sample below:

Vendor	Product Quality	On Time Delivery	Quality	Costs	Time	Cost per Unit	Transactional Efficiency
Vendor #1							
Vendor #2							

Table 10: Vendor Description (Source: Own Elaboration)

4.8.4 Change Requests

Any changes or constraints that involve procuring goods, services or resources should go through the Perform Integrated Change Control process.

As constraints are identified, they must be considered every step of the way as procurement activities are planned and conducted. Every effort must be made to identify all constraints prior to any project or procurement planning as constraints identified later in the project lifecycle can significantly impact the project's likelihood of success

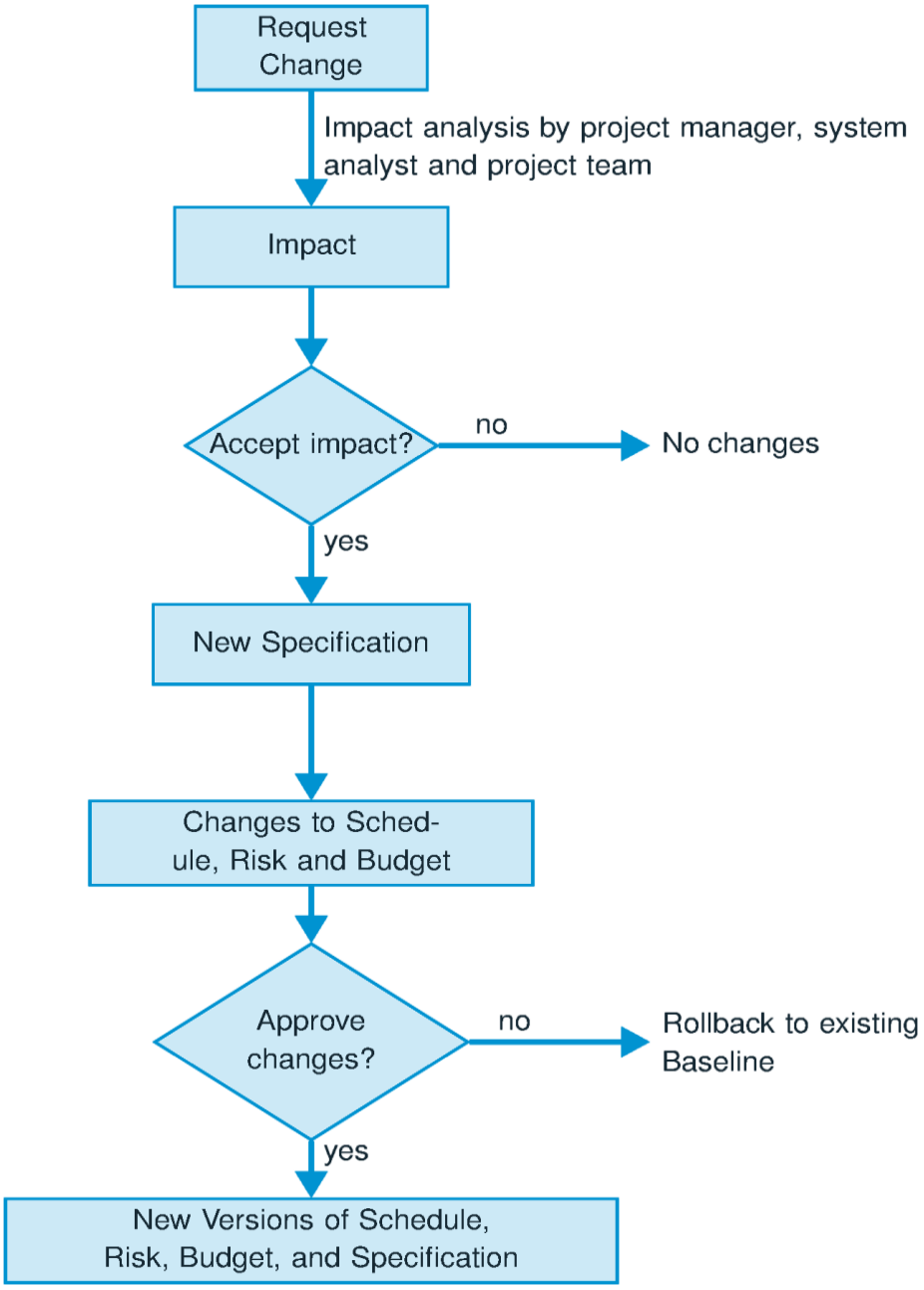


Figure 17. Schedule – Change control (Source: Technoparkcorp.com)

4.9 Project Stakeholder Management Plan

The Stakeholder Management Plan helps to ensure that stakeholders are effectively involved in project decisions and execution. The Stakeholder Management Plan details the project's activities related to engaging stakeholders and making the most effective use of their participation.

Stakeholder Management includes the processes required to identify the people, groups and organizations that could affect or be affected by the project, to analyze stakeholder expectations and their impact on the project, and to develop appropriate strategies and tactics for effectively engaging stakeholders in a manner appropriate to the stakeholders' interest and involvement in the project. The Stakeholder Management Plan helps to ensure that stakeholders are effectively involved in project decisions and execution (PMBOK 7th Edition) throughout the lifecycle of the project, to gain support for the project and anticipate resistance, conflict, or competing objectives among the project's stakeholders. The Stakeholder Management Plan includes several sections:

- Identify Stakeholders – identify by name and title the people, groups, and organizations that have significant influence on project direction and its success or who are significantly impacted by the project.
- Plan Stakeholder Management – identify the strategies and mechanisms that will be used to achieve the greatest support of stakeholders and minimize resistance.
- Manage Stakeholder Engagement – outlines the processes and steps that will be undertaken to carry out the planned strategies.
- Control Stakeholder Engagement – describes the methods that will be used to monitor stakeholder engagement and alert the project team if problems are surfacing.

4.9.1 Identify Stakeholders

In order to develop an effective plan for managing stakeholders, they first need to be clearly identified and assessed. Stakeholders will be identified by performing a stakeholders' analysis in which potential stakeholders and relevant information (interests, involvement, interdependencies, influence, and potential impact on project success) are gathered, documented and analyzed. (PMBOK 5th Edition).

Some questions that are relevant for deciding who should be considered a stakeholder for the project:

- Will the person or their organization be directly or indirectly affected by this project?
- Does the person or their organization hold a position from which they can influence the project?
- Can the person have an impact on the project's resources (material, personnel, funding)?
- Will the person or their organization have any special skills or capabilities the project will require?
- Will the person potentially benefit from the project or will they be in a position to resist this change?

4.9.2 Plan Stakeholders Management

Plan Stakeholder Management is the process of developing appropriate management strategies to effectively engage stakeholders throughout the lifecycle of the project, based on the analysis of their needs, interests and potential impact on project success. The key benefit of this process is that it provides a clear, actionable plan to interact with project stakeholders to support the project's interests (PMBOK 7th Edition).

Table 11. Barron and Barron Stakeholder's Framework for the MCHS Running Track Project (Source: Own Elaboration)

KEY STAKEHOLDERS						
Stakeholders	Level of influence/interest	Ability to influence & interest-ratings				
		VH†	H	M	L	VL
Board of Directors	Top management must be provided with adequate information at all phases of the project life cycle	X				
The Project Team includes: Project Manager (PM)	The PM functions include allocating tasks, communicating with stakeholders, control scope and manage crisis; ensuring that project delivers expected deliverables.	X				
Engineers	A well- organized project team will work towards the common objective of ensuring the delivery of a successful rehabilitation park.	X				
Tidesun	As the main contractor and component in completing the project their input and cohesion are valuable.	X				
Contractors	The PM has secured the resources from resource managers. The PM needs to continue to build effective communications with resource managers and keep them informed of project developments.		X			
Internal Customer/ Students	The project manager needs to understand the City Councils' Organizational Culture and work with the student body to clarify and document the project deliverables.			X		

Contractors/ Workers	Managing contractors or suppliers require effective communication, interpersonal and negotiation skills to achieve the desired rehabilitation park, prevent cost overruns and achieve timely completion of the park		X			

† VH: Very High; H: High; M: Medium; L: Low; VL: Very Low.

Power/Interest Classification

The MCHS Running Track Project is assessing each group's position, as well as their impact on the project and/or how they are impacted by the project. One purpose of this activity is to help identify and categorize groups so that appropriate attention can be given to each group according to the level of engagement needed. To help in this process, the project will use the PMBOK Power/Interest Grid to categorize each stakeholder group. The Power/Interest Grid analyzes stakeholder groups in a visual manner to further establish stakeholders' level of interest or concern and their ability to influence the project outcomes.

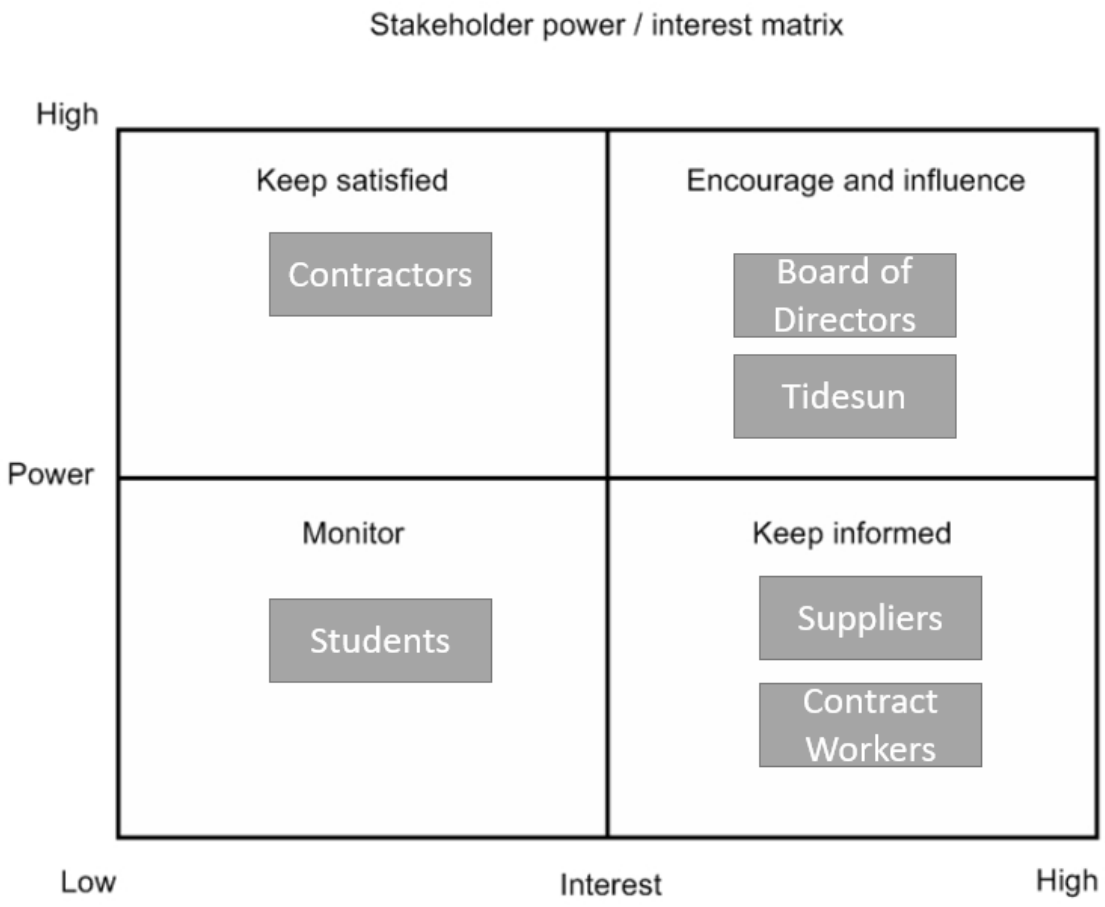


Figure 18. MCHS Power/Interest Matrix (Source: Own elaboration)

As mentioned in the Communications Plan and the Risk Management Plan, the MCHS Running Track Project will have mechanisms to receive ongoing direct feedback from key stakeholders. Individual stakeholders will be encouraged to participate and to voice questions and concerns, with the most serious issues and concerns that are raised addressed in a formal, rigorous process through the Issues and Risk logs. As described in the Scope Management Plan, the project will solicit broad participation in the collection and validation of requirements, which will uncover issues and concerns early on so they can be addressed. Stakeholders are critical to the project's success. The project team has planned for and will work to involve, engage and listen to all key stakeholders throughout the project lifecycle.

Chart 15: Stakeholder Register: (Source: Own Elaboration)

Stakeholder Register						
Project Name:	**MCHS Running Track Project**					
Stakeholder	**Role in Project**	**Stakeholder Type**	**Communication Methods**	**Expectations**	**Interests**	**Influence on Project Outcome**
Board of Directors	Fund and preliminary design running track	Internal	Meetings; Reports	Successful execution of project within schedule and budget	To be the first high school with an official track and field running track in the district.	Very High
The Project Team	Execute Project	Internal	Meetings; Face to Face Interaction	The impact of constraints will be very minimal to non-existent	Ensuring the delivery of a successful running track.	Very High
Project Manager	Lead Project Team in executing project	Internal	Meetings; Telephone ; Reports	Project Team will perform in accordance with project plan	Meet and excced the expectations of the clients	Very High
Tidesun	Provide consultation and imported synthetic materials for track.	External	Skype Meetings; Meetings; Telephone ; Reports	Initially they will be kept in the loop for consoltation until the excution phase when they lead the local contacting team.	Opportunities for more business in Belize through the proper execution of the MCHS running Track .	Very High
Contractor/Suppliers	Provide technical skills and labour to carry out project work,	External	Meetings; Telephone Email	Resources will be available within the contraints of the project	To produce the desired requirements and prevent cost overruns and achieve timely completion of the running track	High

4.10 Manage Stakeholder Engagement

To effectively manage stakeholder engagement, the MCHS Running Track Project will utilize the other plans and strategies identified above to communicate project related information to key stakeholders in a proactive and timely manner. Managing stakeholder engagement provides a better outlook for the project and the probability of project success by ensuring that stakeholders clearly comprehend the project plans, intentions, risk and ultimate benefits.

To guarantee the appropriate level of engagement with the stakeholders, the Project Manager will analyze current levels of engagement by using the PMBOK Stakeholders Engagement Assessment Matrix, as seen below.

Chart 16. Stakeholder Engagement Assessment Matrix.
(Source: Own Elaboration)

Stakeholder	Unaware	Resistant	Neutral	Supportive	Leading
Board of Directors			C	D	
The Project Team			C	D	
Project Manager					D
Assistant Engineer	C			D	
Tidesun			C		D
Contractor/Suppliers	C			D	

C" for their current level of engagement and "D" in the column of their desired level of engagement.

4.11 Control Stakeholder Engagement

The MCHS Running Track Project Stakeholders are pivotal to the project's success. The project team will strategize and make it a priority to foster an inclusive environment in which all will be able to engage and listen to all key stakeholders throughout the project development. Communication Plans will be key to fostering this relationship.

5. CONCLUSIONS

1. The Project Scope Management Plan was established to define, validate, and control scope. The completion of this plan will ensure that the MCHS Running Track Project stay on task and that everyone, including the project requester, understands what tasks will be included in the project to prevent frustrating changes and unmet expectations.

2. A Project Schedule Management Plan was developed to outline individual activities and milestones.

3. A Project Cost Management Plan was established to continuously evaluate costs in order to avoid any unforseen changes at the end of a project and keep in line wit h the MCHS running track budget of USD $ 200,000.00.

4. The Project Quality Management Plan was designed to ensure that the MCHS Running Track Project will achieve consistency across the lifespan of the project via quality planning identifying the required quality standards that will be to the execution of the project.

5. Project Human Resource Management Plan was created to identify the individual strengths and weaknesses desired to develop a synergistic relationship to benefit all involved in the project.

6. A Project Communications Management Plan was established since it will be crucial to identifying communications lines and requirements for the team.

7. The formulation of a Project Risk Management plan was completed to assist in identifying major MCHS Running Track project risks and the mitigation plans associated with them.

8. A Project Procurement Management plan was created which identified the potential hiring of contractors or vendors to take on certain tasks which will occur and this was seamlessly integrated into MCHS Project.

9. The identification and establishment of a Project Stakeholder Management Plan which included not only the project requester, but also team members who will work on the project will help ensure that all stakeholders are effectively involved and monitored in project decisions and execution.

6. RECOMMENDATIONS

1. The Board of Directors contracted Tidesun to perform the installation of the synthetic running track with their materials and thereafter opened the bid for the remaining project. MCHS, for any project hereafter, may want to reconsider the sequence of events and utilize a Project Manager to assist in procuring an external partner. Local and international bids could have been made in order to have sound selection process as well as price comparison.

2. MCHS should implement the best check of the quality of the finished track facility by having a performance test undertaken by an International Association of Athletics Federations (IAAF) accredited laboratory. Such a test is mandatory for a facility seeking an IAAF Class 1 certificate. Although this is not the goal of MCHS, it would be a great benefit and would gain them international recognition.

3. In addition to the Communication Matrix and change request process, the criteria for determining the appropriate type, form, and timing of a review should include project complexity; severity and types of inherent risks. These criteria should be developed jointly by the PM and external parties, Tidesun.

4. For future projects the MCHS Board should also assess whether the particular project management team, i.e., project manager, project team, Tidesun, has the ability to execute the project successfully. This assessment should evaluate the qualifications and experience of the project management team, the project's organizational structure, and the communication and decision-making processes in place.

7. References

Analytical Approach. (2016) Retrieved from http://www.thwink.org/sustain/glossary/AnalyticalApproach.htm

Assumption and Constraints in Project Management, retrieved from: https://pmstudycircle.com/2012/10/assumptions-and-constraints-in-project-management/

Boehm, H. (Dec 5, 2016). Why High School Sports Are So Important. Retrieved from https://www.theodysseyonline.com/high-school-sports-important

Bolles, D.L. and Hubbard, D.G. (2007) The Power of Enterprise-Wide Project Management. AMAKOM Books, New York.

Cabanis-Brewin, J. (2014). Government Project Management Offices Struggle to Prove Their Value. *Public Manager, Health Business Elite*

Fewings, P. (2013). Construction project management: an integrated approach. Routledge.

Information Source, The Free Dictionary, retrieved from: https://encyclopedia2.thefreedictionary.co/Information+Source

MindTools. (2018). Forming, Storming, Norming and Performing. Understanding the Stages of Team Formation.Retrieved on February 1, 2018. From https://www.mindtools.com/pages/article/newLDR_86.htm

Primary, Secondary and Tertiary Sources, SIA New York Library Guide, retrieved from: https://sia.libguides.com/c.php?g=521408

Project Management Framework. Deliverables. Definition. Retrieved from: https://ocio.wa.gov/pmframework/initiation/charter/deliverables

Project Management Institute. (2004). Developing an effective project, planning and team building combined. Retrieved on February 1, 2018. From https://www.pmi.org/learning/library/developing-effective-project-planning-team-building-5580

Project Management Institute. (2013). A Guide to the Project Management Body of Knowledge, (*PMBOK® Guide*) - Fifth Edition, Project Management Institute, Inc., 2013.

Riley, M. (2008). The real challenges of leading virtual teams. Paper presented at PMI® Global Congress 2008—North America, Denver, CO. Newtown Square, PA: Project Management Institute.

The Importance of Project Management Tools, retrieved from: https://bizfluent.com/info-8320824-importance-project-management-tools.html

8. APPENDICES

Appendix A: FGP Charter

PROJECT CHARTER

PROJECT CHARTER **Formalizes the project start and confers the project manager with the authority to assign company resources to the project activities. Benefits: it provides a clear start and well defined project boundaries.**	
Date	**Project Name:**
May 14th 2018	Project Management Plan for the Muffles College High School Running Track Construction.
Knowledge Areas / Processes	**Applicacion Area (Sector / Activity)**
Knowledge areas: **Integration, Time, Scope, Quality, Human Resources, Communications, Risk, Stakeholder and Procurement Management** **Process groups:** **The project life cycle will go through the following stages: Planning, Execution, Closure, Monitoring** **Planning:** This will entail creating a project plan, resource plan, WBS, and a communications plan. **Execution/Monitoring:** Here the deliverables will be built and strict control of the project delivery, scope, costs, quality, risks and issues will be kept. **Closure:** This will involve the winding-down of the project by releasing staff, handing deliverables over to the school and completing a review**.**	Construction
Start date	**Finish date**
May 14th 2018	November 14th 2018

Project Objectives (general and specific)

General objective:
To develop a Project Management Plan which clearly outline the processes necessary for the Project Manager to apply the organizational resources in order to manage the construction of a 400m running track with 6 lanes, red in color, installed around the schools existing football field.

Specific objectives:

Project Integration Management- This is the umbrella that covers all the other project management knowledge areas related to the MCHS Running Track. It knits together all the individual processes and tasks into one project with defined goals and deliverables. This Project Charter is one of the first steps towards achieving this.

To create a Project Scope Management Plan which will allow for the completion of the scope process groups and will establish a management plan that defines, validates, and controls scope of the MCHS Running Track Project.

Project Integration Management- This is the umbrella that covers all the other project management knowledge areas related to the MCHS Running Track. It knits together all the individual processes and tasks into one project with defined goals and deliverables. This Project Charter is one of the first steps towards achieving this.

To develop a Project Schedule Management Plan in which the most detailed of this process will be Estimate Activity Resources process, to manage the completion of the project on time.

Design a Project Cost Management Plan to estimate, budget and control costs in such a way that the project is executed with the approved funds, so as not to exceed the estimate of the project.

Develop a Project Quality Management Plan where the processes and activities that determine responsibilities, objectives and quality policies are managed so that the project is executed satisfactorily.

To create a Project Human Resource Management plan in which the individual strengths and weaknesses will be identified and a synergistic relationship will be made to benefit all involved in the project.

To establish a Project Communications Management Plan to ensure adequate information flow and proper documentation of the project development.

To create a Project Risk Management Plan that identifies all the risks of the project, implements all the necessary strategies and contingency plans in case the risks occur.

To create a Project Procurement Management Plan to ensure all the purchasing and contract needs in the project have been meticulously reviewed and executed.

To create a Project Stakeholders Management Plan that lists all the stakeholders that can affect the project positively or negatively, to ensure an effective communication to ensure meet their needs or expectations.

Project purpose or justification (merit and expected results)

Studies suggest that student athletes are less likely to participate in unhealthy or risky behaviors when they are playing sports in high school. A 2002 study by the Department of Education found that students who spent no time in extracurricular activities in high school were forty nine (49) percent more likely to use

drugs and thirty seven (37) percent more apt to become teen parents. Just four (4) hours in an extracurricular activity like sports each week dramatically improved those numbers.

For these reasons Muffles College High School (MCHS) has encouraged sports such as basketball, football, volleyball and now the need for a track and field running facility. For the students who have a passion for track and field, they practiced and trained around the football field whose surface did not safeguard the athletes nor was it conducive for optimal performance due to its uneven terrain.

The proposed running track project supports MCHS strategic goals of aligning sports and physical recreation encompassing an even greater variety of competitive options for male and female students. The new track would not only be the only one of its kind in the district, but it would also provide the campus and community with a facility available for a wide variety of needs, 365 days a year. The project management plan will add structure to the process by assigning an order to all the important parts involved in the plan. Other merits of the plan include:

- The development of a Project Charter (ii) Develop Preliminary Project Scope Statement (iii) Develop Project Management Plan (iv) Scope Planning (v) Risk Analysis etc.
- Proper monitoring and guidance will be in place via the plan in order to accomplish the project objectives.

The following highlights the reasons this PMPlan for the Muffles College High School Running Track Construction is both necessary and timely. The main expected result of the PMPlan is the advancement and understanding of the services and procedures necessary to execute the MCHS running track project.

- The plan will establish the project boundaries, scope and deliverables
- Identifies the project management team, project stakeholders and will indicate the project schedule and major milestones
- Establishes baseline plan for schedule, scope and cost which provides a tracking mechanism against an established baseline and helps in project performance reporting

The PMPlan will ultimately improve the monitoring and control of project activities geared towards the execution of the MCHS Running Track. It will identifiy existing resources and indicate additional requirements needed to successfully complete the project and meet stakeholders expectations.

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

The deliverable of the project is a project management plan which will describe every phase of a project. The components include planning, executing, monitoring and controlling, and closing. Initiating has been excluded since the school has initiated the process and selected a contractor and requires management of the aforementioned knowledge areas. Ultimatley the project plan will outline the complete and comprehensive project plan for the construction of a 400m running track and field court with 6 lanes, red in color within a three (3) month span.

The purpose of the project plan is to clearly outline what is to be done and authorize the Project Manager to proceed and apply organizational resources.

The charter provides the opportunity for the sponsor to authorize the project based on measurable objectives in relation to a business need, and defined parameters such as scope, milestones, roles, responsibilities, and budget. Project management plans require steps to be followed for the successful completion of a project. The knowledge areas also greatly assist in providing structure to the execution of the plan. The PMPLan specific objectives include :

1. To create a Project Scope Management Plan which will allow for the completion of the scope process groups, and will establish a management plan that defines, validates, and controls scope of the MCHS Running Track Project.

2. To develop a Project Schedule Management Plan in which the most detailed of this process will be Estimate Activity Resources process, to manage the completion of the project on time.

3. Design a Project Cost Management Plan to estimate, budget and control costs in such a way that the project is executed with the approved funds, so as not to exceed the estimate of the project.

4. Develop a Project Quality Management Plan where the processes and activities that determine responsibilities, objectives and quality policies are managed so that the project is executed satisfactorily.

5. To create a Project Human Resource Management plan in which the individual strengths and weaknesses will be identified and a synergistic relationship will be made to benefit all involved in the project.

6. To establish a Project Communications Management Plan to ensure adequate information flow and the proper documentation of the project development.

7. To create a Project Risk Management Plan that identifies all the risks of the project, implements all the necessary strategies and contingency plans in case the risks occur.

8. To create a Project Procurement Management Plan to ensure all the purchasing and contract needs of the project have been meticulously reviewed and executed.

9. To create a Project Stakeholders Management Plan that lists all the stakeholders that can affect the project positively or negatively, and to ensure an effective communication to meet their needs or expectations.

Assumptions

1. UCI's Master's in Project Management course has imparted on us the requiste information to carry out the project.
2. All the necessary information for the project is readily available and accessible.

Constraints

3. A time frame of three months for project completion may be insufficient.
4. Communications barriers may exist between student, teacher and tutor

Preliminary risks

4. Insufficient time to complete the study will impact the scope and quality of the project.
5. Inadequate preliminary studies may affect the project plan and total cost of the project.
6. Communication barriers.

Budget

- The budget for the FGP is $0 since all necessary material is already owned to create the project plan.
- The MCHS Running Track will revolve around a USD $200,000 budget.

Milestones and dates

Milestone		Start date	End date
1	FGP Charter Individual	20-May-18	24-May-18
2	FGP Work Breakdown Structure (FGP WBS) Individual	20-May-18	24-May-18
3	Weekly self-assessment Individual	20-May-18	20-May-18
4	Corrections Individual 2	07-May-18	31-May-18
5	Introduction chapter Individual	27-May-18	31-May-18
6	FGP schedule Individual	27-May-18	31-May-18
7	Synchronic activity Group	26-May-18	NA
8	Weekly self-assessment Individual	27-May-18	27-May-18
9	Corrections Individual	03-Jun-18	07-Jun-18
10	Theoretical framework chapter Individual	03-Jun-18	07-Jun-18
11	Corrections Individual	10-Jun-18	14-Jun-18
12	Methodological framework chapter Individual	10-Jun-18	14-Jun-18
13	Synchronic activity Group	09-Jun-18	NA
14	Corrections Individual	17-Jun-18	24-Jun-18
15	Executive summary Group	17-Jun-18	24-Jun-18
16	Bibliography Individual	17-Jun-18	24-Jun-18
17	Signed charter Group	17-Jun-18	24-Jun-18
18	Reading by reviewers	25-Jun-18	01-Jul-18
19	Reviewers assignment request	02-Jul-18	07-Jul-18
20	Assignment of two reviewers	07-Jul-18	09-Jul-18
21	Communication	09-Jul-18	11-Jul-18
22	FGP submission to reviewers	11-Jul-18	12-Jul-18

23	Reviewers work	12-Jul-18	22-Jul-18	
24	Reviewer	22-Jul-18	02-Aug-18	
25	FGP1 reading	02-Aug-18	11-Aug-18	
26	Reader, report	11-Aug-18	12-Aug-18	
27	FGP2 reading	12-Aug-18	13-Aug-18	
28	Reader, report	13-Aug-18	14-Aug-18	
29	Adjustments	14-Aug-18	04-Sep-18	
30	FGP 3reading	04-Sep-18	13-Sep-18	
31	Reader, report	13-Sep-18	24-Sep-18	
32	FGP4 reading	12/11/18	29-Sep-18	
33	Reader, report	29-Sep-18	01-Oct-18	
34	Adjustments	01-Oct-18	16-Oct-18	
35	FGP5 reading	16-Oct-18	30-Oct-18	
36	Report for reviewers	01- Nov -18	12- Nov -18	
37	Second review by reviewers	12- Nov -18	17- Nov -18	
38	Presentation to Board of Examiners	17- Nov -18	19- Nov -18	
39	Final review by board	19- Nov -18	25- Nov -18	
40	FGP grade report	25- Nov -18	30-Nov-18	
41	FGP END	November 30th 2018		

Relevant historical information

Extensive research and due diligence was performed in allocating the appropriate contractors for the MCHS Running Track Project to ensure the construction of a professional grade track. The contract was awarded to Jiangmen Tidesun Environmental Protection Material Co.,Ltd.

Tidesun has focused on top quality sports material for over 10 years in China. They started as a R & D Company with many years of experiences of researching and developing new products but now have become one of the leading suppliers in the sports material industry in China. Today, Tidesun has been one of the top producers of quality sports material, such as: high quality ecofriendly running track, all kinds of sports flooring, ground, artificial grass, shock pad, rubber granules and other new material etc.

To ensure completion of the project within 5 month, MCHS has also opted to utilize a prefabricated running track using natural rubber and synthetic rubber as the main raw material, made by curing, to ensure the maximum performance of the rubber composition. This “fast track” to constructing the running track is to make the new addition a feature to upsell the school for their September enrollment.

Stakeholders

Direct stakeholders:

- MCHS Board of Directors
- MCHS Students, Faculty and Staff

Indirect stakeholders:

- Orange Walk Community
- Students from other schools
- Project Manager
- Accountant
- Tidesun
- Suppliers

Project Manager: **Vanessa N. Johnston**	**Signature:** 
Authorized by:	**Signature:**

APPENDIX B: FGP WBS

Work Breakdown Structure

PROJECT TITLE	Final Graduation Project
PROJECT MANAGER	Vanessa N. Johnston
COMPANY	Muffles College High School
DATE	20/05/2018

PROJECT TITLE:
Project Management Plan for the Muffles College High School Running Track Construction.

	Milestones
1	FGP Start
1.1	FGP Charter Individual
1.1.1	FGP Work Breakdown Structure (FGP WBS) Individual
1.1.2	Weekly self assessment Individual
1.1.3	Corrections Individual 2
1.1.4	Chapter 1. Introduction chapter Individual
1.1.5	FGP schedule Individual
1.1.6	Synchronic activity Group
1.1.7	Weekly self assessment Individual
1.1.8	Corrections Individual
1.2	Chapter 2.Theoretical framework
1.2	Corrections Individual
1.3	Chapter 3. Methodological framework
1.3	Synchronic activity Group
1.3	Corrections Individual
1.4	Executive summary Group
1.5	Bibliography Individual
1.6	Signed charter Group
2	Tutoring Process
2.1	Tutor Assignment
2.1.1	Communication
2.1.2	Adjustments (If needed)
2.2	Chapter 4. Development- Results
2.3	Chapter 5. Conclusion
2.4	Chapter 6. Recommendation
2.5	Tutor Approval
3	Reading by reviewers
3.1.1	Reviewers assignment request
3.1.2	Assignment of two reviewers
3.1.3	Communication
3.1.4	FGP submission to reviewers
3.2	Reviewers work
3.2.1	FGP reading
3.2.2	Reader 1, report
3.3	Reviewer
3.3.1	FGP reading
3.3.2	Reader 2, report
4	Adjustments
4.1	Report for reviewers
4.2	Second review by reviewers
5	Presentation to Board of Examiners
5.1	Final review by board
5.2	FGP grade report
5.3	FGP END

APPENDIX C: FGP SCHEDULE

WBS OUTLINE

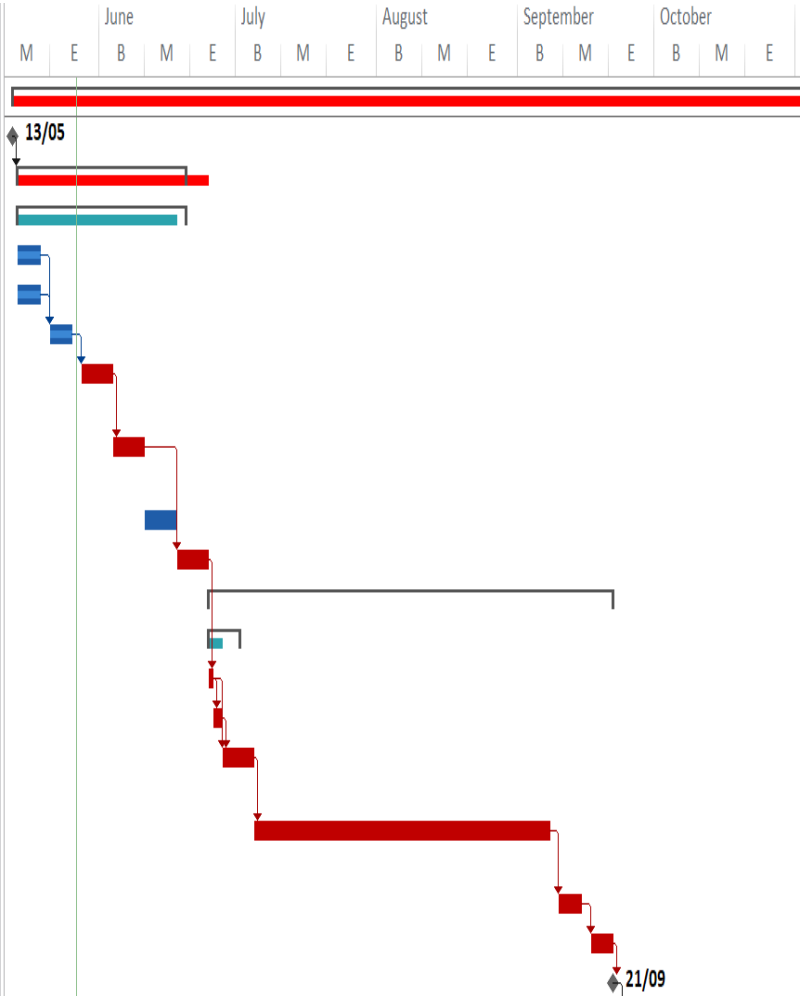
PROJECT TITLE	Final Graduation Project	**COMPANY**	Muffles College High School
PROJECT MANAGER	Vanessa N. Johnston	**DATE**	13/05/2018

Task Name	Duration	Start	Finish	Predecessors
Final Graduation Project	**130 days**	**Sun 13/05/18**	**Thu 08/11/18**	
FGP Start	0 days	Sun 13/05/18	Sun 13/05/18	
1,Graduation Seminar	**27 days**	**Mon 14/05/18**	**Tue 19/06/18**	**2**
1.1,FGP Deliverables	**27 days**	**Mon 14/05/18**	**Tue 19/06/18**	
1.1.1,Charter	5 days	Mon 14/05/18	Fri 18/05/18	
1.1.2,WBS	5 days	Mon 14/05/18	Fri 18/05/18	
1.1.3,Chapter I. Introduction	5 days	Mon 21/05/18	Fri 25/05/18	5,6
1.1.4,Chapter II. Theoretical framework	5 days	Mon 28/05/18	Sun 03/06/18	7
1.1.5,Chapter III. Methodological framework	5 days	Mon 04/06/18	Sun 10/06/18	8
Bibliography	5 days	Mon 11/06/18	Sun 17/06/18	
1.2,Graduation Seminar approval,	5 days	Mon 18/06/18	Sun 24/06/18	9
2,Tutoring process	**65 days**	**Mon 25/06/18**	**Fri 21/09/18**	
2.1,Tutor	**6 days**	**Mon 25/06/18**	**Sun 01/07/18**	
2.1.1,Tutor assignment	1 day	Mon 25/06/18	Mon 25/06/18	11
2.1.2,Communication	2 days	Tue 26/06/18	Wed 27/06/18	14
2.2,Adjustments of previous chapters (If needed)	5 days	Thu 28/06/18	Wed 04/07/18	14,15

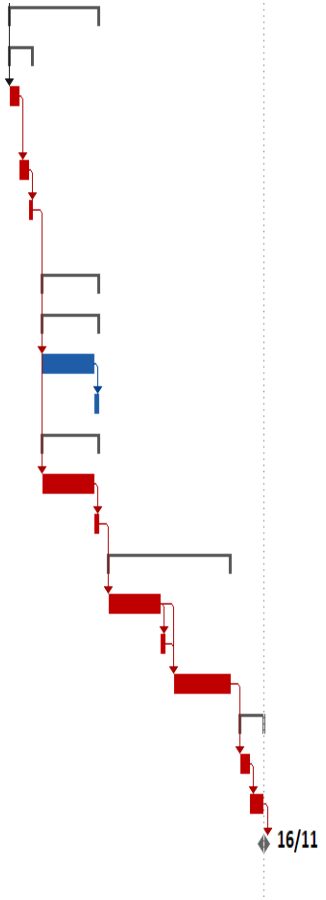
2.3,Charter IV. Development (Results)	47 days	Thu 05/07/18	Fri 07/09/18	16
2.4,Chapter V. Conclusions	5 days	Mon 10/09/18	Fri 14/09/18	17
2.5,Chapter VI. Recommendations	5 days	Mon 17/09/18	Fri 21/09/18	18
Tutor approval	0 days	Fri 21/09/18	Fri 21/09/18	19
3,Reading by reviewers	**15 days**	**Mon 24/09/18**	**Fri 12/10/18**	
3.1,Reviewers assigment request	**5 days**	**Mon 24/09/18**	**Fri 28/09/18**	
3.1.1,Assigment of two reviewers	2 days	Mon 24/09/18	Tue 25/09/18	20
3.1.2,Communication	2 days	Wed 26/09/18	Thu 27/09/18	23
3.1.3,FGP submission to reviewers	1 day	Fri 28/09/18	Fri 28/09/18	24
3.2,Reviewers work	**10 days**	**Mon 01/10/18**	**Fri 12/10/18**	
3.2.1,Reviewer	**10 days**	**Mon 01/10/18**	**Fri 12/10/18**	
3.2.1.1,FGP reading	9 days	Mon 01/10/18	Thu 11/10/18	25
3.2.1.2,Reader 1 report	1 day	Fri 12/10/18	Fri 12/10/18	28
3.2.2,Reviewer	**10 days**	**Mon 01/10/18**	**Fri 12/10/18**	
3.2.2.1,FGP reading	9 days	Mon 01/10/18	Thu 11/10/18	25
3.2.2.2,Reader 2 report	1 day	Fri 12/10/18	Fri 12/10/18	31
4,Adjustments	**20 days**	**Mon 15/10/18**	**Fri 09/11/18**	
4.1,Report for reviewers	9 days	Mon 15/10/18	Thu 25/10/18	32
4.2,FGP update	1 day	Fri 26/10/18	Fri 26/10/18	34
4.3,Second review by reviewers	10 days	Mon 29/10/18	Fri 09/11/18	34,35
5,Presentation to Board of Examiners	**5 days**	**Mon 12/11/18**	**Fri 16/11/18**	
5.1,Final review by board	2 days	Mon 12/11/18	Tue 13/11/18	36
5.2,FGP grade report	3 days	Wed 14/11/18	Fri 16/11/18	38
FGP End	0 days	Fri 16/11/18	Fri 16/11/18	39

APPENDIX D: FGP GNATT CHART

	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		**Final Graduation Project**	**130 days**	**Sun 13/05/18**	**Thu 08/11/18**	
2		FGP Start	0 days	Sun 13/05/18	Sun 13/05/18	
3		**1,Graduation Seminar**	**27 days**	**Mon 14/05/18**	**Tue 19/06/18**	**2**
4		**1.1,FGP Deliverables**	**27 days**	**Mon 14/05/18**	**Tue 19/06/18**	
5		1.1.1,Charter	5 days	Mon 14/05/18	Fri 18/05/18	
6		1.1.2,WBS	5 days	Mon 14/05/18	Fri 18/05/18	
7		1.1.3,Chapter I. Introduction	5 days	Mon 21/05/18	Fri 25/05/18	5,6
8		1.1.4,Chapter II. Theoretical framework	5 days	Mon 28/05/18	Sun 03/06/18	7
9		1.1.5,Chapter III. Methodological framework	5 days	Mon 04/06/18	Sun 10/06/18	8
10		Bibliography	5 days?	Mon 11/06/18	Sun 17/06/18	
11		1.2,Graduation Seminar approval,	5 days	Mon 18/06/18	Sun 24/06/18	9
12		**2,Tutoring process**	**65 days**	**Mon 25/06/18**	**Fri 21/09/18**	
13		**2.1,Tutor**	**6 days**	**Mon 25/06/18**	**Sun 01/07/18**	
14		2.1.1,Tutor assigment	1 day	Mon 25/06/18	Mon 25/06/18	11
15		2.1.2,Communication	2 days	Tue 26/06/18	Wed 27/06/18	14
16		2.2,Adjustments of previous chapters (If needed)	5 days	Thu 28/06/18	Wed 04/07/18	14,15
17		2.3,Charter IV. Development (Results)	47 days	Thu 05/07/18	Fri 07/09/18	16
18		2.4,Chapter V. Conclusions	5 days	Mon 10/09/18	Fri 14/09/18	17
19		2.5,Chapter VI. Recommendations	5 days	Mon 17/09/18	Fri 21/09/18	18
20		Tutor approval	0 days	Fri 21/09/18	Fri 21/09/18	19



21	**3,Reading by reviewers**	**15 days**	**Mon 24/09/18**	**Fri 12/10/18**	
22	**3.1,Reviewers assigment request**	**5 days**	**Mon 24/09/18**	**Fri 28/09/18**	
23	3.1.1,Assigment of two reviewers	2 days	Mon 24/09/18	Tue 25/09/18	20
24	3.1.2,Communication	2 days	Wed 26/09/18	Thu 27/09/18	23
25	3.1.3,FGP submission to reviewers	1 day	Fri 28/09/18	Fri 28/09/18	24
26	**3.2,Reviewers work**	**10 days**	**Mon 01/10/18**	**Fri 12/10/18**	
27	**3.2.1,Reviewer**	**10 days**	**Mon 01/10/18**	**Fri 12/10/18**	
28	3.2.1.1,FGP reading	9 days	Mon 01/10/18	Thu 11/10/18	25
29	3.2.1.2,Reader 1 report	1 day	Fri 12/10/18	Fri 12/10/18	28
30	**3.2.2,Reviewer**	**10 days**	**Mon 01/10/18**	**Fri 12/10/18**	
31	3.2.2.1,FGP reading	9 days	Mon 01/10/18	Thu 11/10/18	25
32	3.2.2.2,Reader 2 report	1 day	Fri 12/10/18	Fri 12/10/18	31
33	**4,Adjustments**	**20 days**	**Mon 15/10/18**	**Fri 09/11/18**	
34	4.1,Report for reviewers	9 days	Mon 15/10/18	Thu 25/10/18	32
35	4.2,FGP update	1 day	Fri 26/10/18	Fri 26/10/18	34
36	4.3,Second review by reviewers	10 days	Mon 29/10/18	Fri 09/11/18	34,35
37	**5,Presentation to Board of Examiners**	**5 days**	**Mon 12/11/18**	**Fri 16/11/18**	
38	5.1,Final review by board	2 days	Mon 12/11/18	Tue 13/11/18	36
39	5.2,FGP grade report	3 days	Wed 14/11/18	Fri 16/11/18	38
40	FGP End	0 days	Fri 16/11/18	Fri 16/11/18	39



APPENDIX E: WBS GNATT CHART

WBS OUTLINE & Gantt Chart

PROJECT TITLE	Final Graduation Project		**COMPANY**	Muffles College High School
PROJECT MANAGER	Vanessa N. Johnston		**DATE**	20/05/2018

PROJECT TITLE: Track and Field Running Track Construction for Muffles College High School

	Milestones	Duration	Start date	End date
1	FGP Start	130d	May 14th 2018	
1.1	FGP Charter Individual	5d	20-May-18	24-May-18
1.1.1	FGP Work Breakdown Structure (FGP WBS) Individual	5d	20-May-18	24-May-18
1.1.2	Weekly self-assessment Individual	1d	20-May-18	20-May-18
1.1.3	Corrections Individual 2	19d	07-May-18	31-May-18
1.1.4	Chapter 1. Introduction chapter Individual	5d	27-May-18	31-May-18
1.1.5	FGP schedule Individual	5d	27-May-18	31-May-18
1.1.6	Synchronic activity Group	1d	26-May-18	NA NA
1.1.7	Weekly self-assessment Individual	5d	27-May-18	27-May-18
1.1.8	Corrections Individual	5d	03-Jun-18	07-Jun-18
1.2	Chapter 2.Theoretical framework	5d	03-Jun-18	07-Jun-18
1.2	Corrections Individual	5d	10-Jun-18	14-Jun-18
1.3	Chapter 3. Methodological framework	3d	10-Jun-18	14-Jun-18
1.3	Synchronic activity Group	4d	09-Jun-18	NA NA
1.3	Corrections Individual	2d	17-Jun-18	24-Jun-18
1.4	Executive summary Group	5d	17-Jun-18	24-Jun-18
1.5	Bibliography Individual	2d	17-Jun-18	24-Jun-18

1.6	Signed charter Group	2d	17-Jun-18	24-Jun-18
2	Tutoring Process	4d	24-Jun-18	25-Jun-18
2.1	Tutor Assignment	20d	25-Jun-18	29-May-18
2.1.1	Communication	5d	25-Jun-18	26-Jun-18
2.1.2	Adjustments (If needed)	6d	26-Jun-18	30-Jun-18
2.2	Chapter 4. Development- Results	1d	30-Jun-18	30-Jul-18
2.3	Chapter 5. Conclusion	12d	30-Jul-18	05-Aug-18
2.4	Chapter 6. Recommendation	5d	05-Aug-18	10-Aug-18
2.5	Tutor Approval	2d	10-Aug-18	11-Aug-18
3	Reading by reviewers	3d	12-Aug-18	27-Aug-18
3.1.1	Reviewers assignment request	2d	27-Aug-18	01-Sep-18
3.1.2	Assignment of two reviewers	7d	01-Sep-18	03-Sep-18
3.1.3	Communication	8d	03-Sep-18	05-Sep-18
3.1.4	FGP submission to reviewers	2d	05-Sep-18	06-Sep-18
3.2	Reviewers work	8d	06-Sep-18	16-Sep-18
3.2.1	FGP reading	7d	16-Sep-18	25-Sep-18
3.2.2	Reader 1, report	2d	25-Sep-18	26-Sep-18
3.3	Reviewer	4d	26-Sep-18	06-Oct-18
3.3.1	FGP reading	2d	06-Oct-18	15-Oct-18
3.3.2	Reader 2, report	5d	15-Oct-18	16-Oct-18
4	Adjustments	4d	16-Oct-18	21-Oct-18
4.1	Report for reviewers	3d	21-Oct-18	22-Oct-18
4.2	Second review by reviewers	2d	22-Oct-18	27-Oct-18
5	Presentation to Board of Examiners	1d	27-Oct-18	31-Oct-18
5.1	Final review by board	2d	31-Oct-18	02-Nov-18
5.2	FGP grade report	3d	02-Nov-18	05-Nov-18
5.3	FGP END		Nov. 5th 2018	

APPENDIX F: REVISION LETTER

Belize City, Belize

7 November 2018

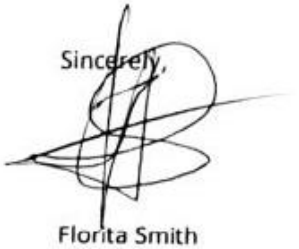
TO WHOM IT MAY CONCERN

I am a trained teacher with a Diploma in Secondary Education in English and Science. I also hold an undergraduate University Degree in Secondary Education in English and a Master of Education in Secondary Education with a cognate in TESOL (copies attached). I have taught English at the primary, secondary and tertiary level and am currently teaching a Research Methods class at the tertiary level. In addition, I have been a table leader and supervisor for the marking of the English National Exams at the primary and secondary levels.

I have reviewed Ms Vanessa Johnston Final Graduation Project making grammatical and typographical error corrections as well as correcting errors relating to the standardization of the font sizes and style. Suggestions about error correction relating to in-text citations, references as well as the overall formatting of the document were given.

The project management project shows evidence of being thoroughly developed, presented and analysed.

Sincerely,



Florita Smith

APPENDIX G: LINGUISTIC CREDENTIALS

University of North Florida

has conferred on

Florita Diana Smith

the degree

Master of Education

Secondary Education

and all the rights and privileges thereunto appertaining.
In Witness Whereof, this diploma, duly signed, has
been issued and the seal of the University affixed.

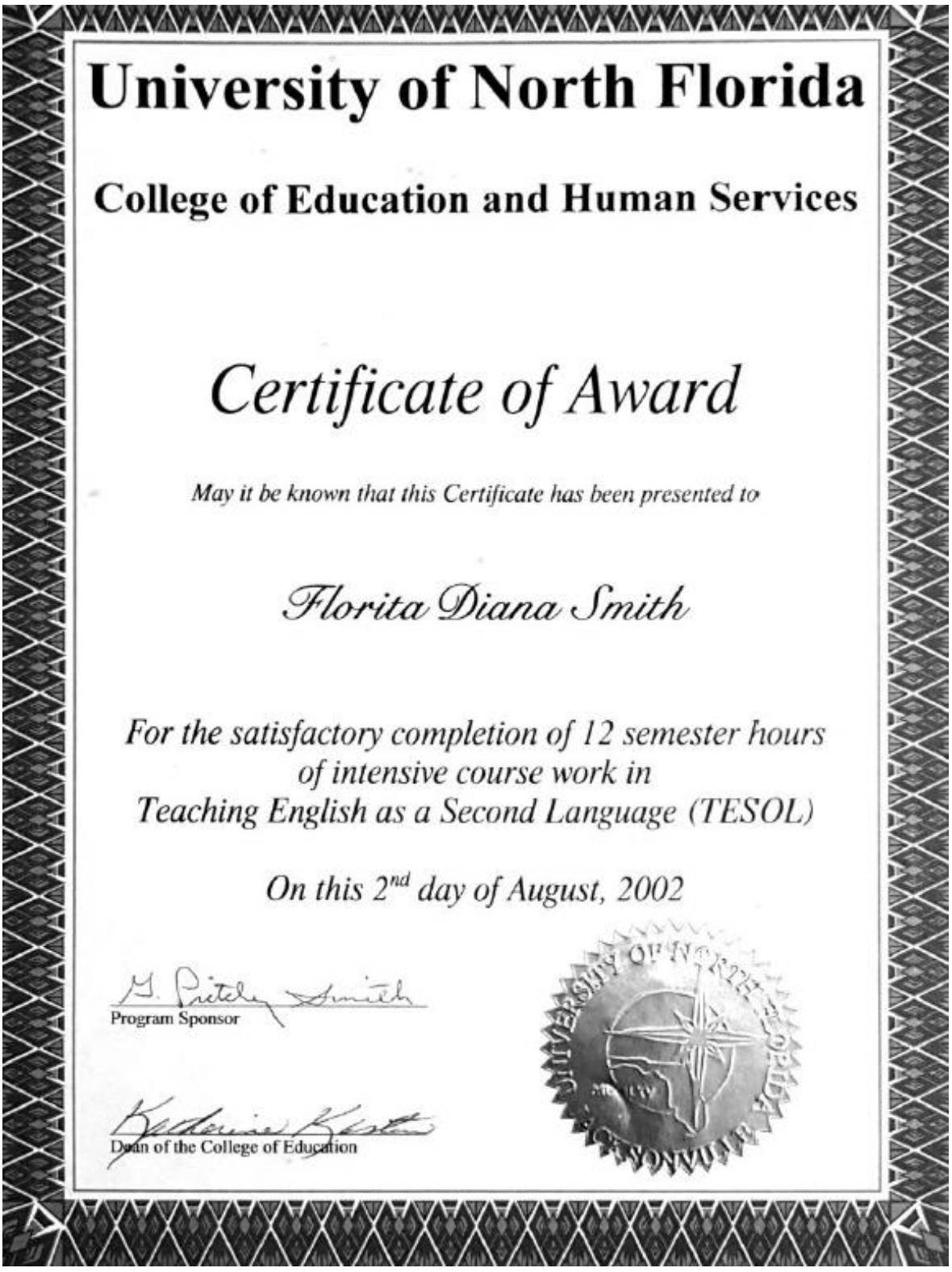
Issued by the Board of Trustees upon the recommendation of the Faculty of the
College of Education and Human Services at Jacksonville, Florida, this second day of August A.D. 2002

Governor

President

Dean

APPENDIX H: LINGUISTIC CREDENTIALS



University of North Florida

College of Education and Human Services

Certificate of Award

May it be known that this Certificate has been presented to

Florita Diana Smith

For the satisfactory completion of 12 semester hours of intensive course work in Teaching English as a Second Language (TESOL)

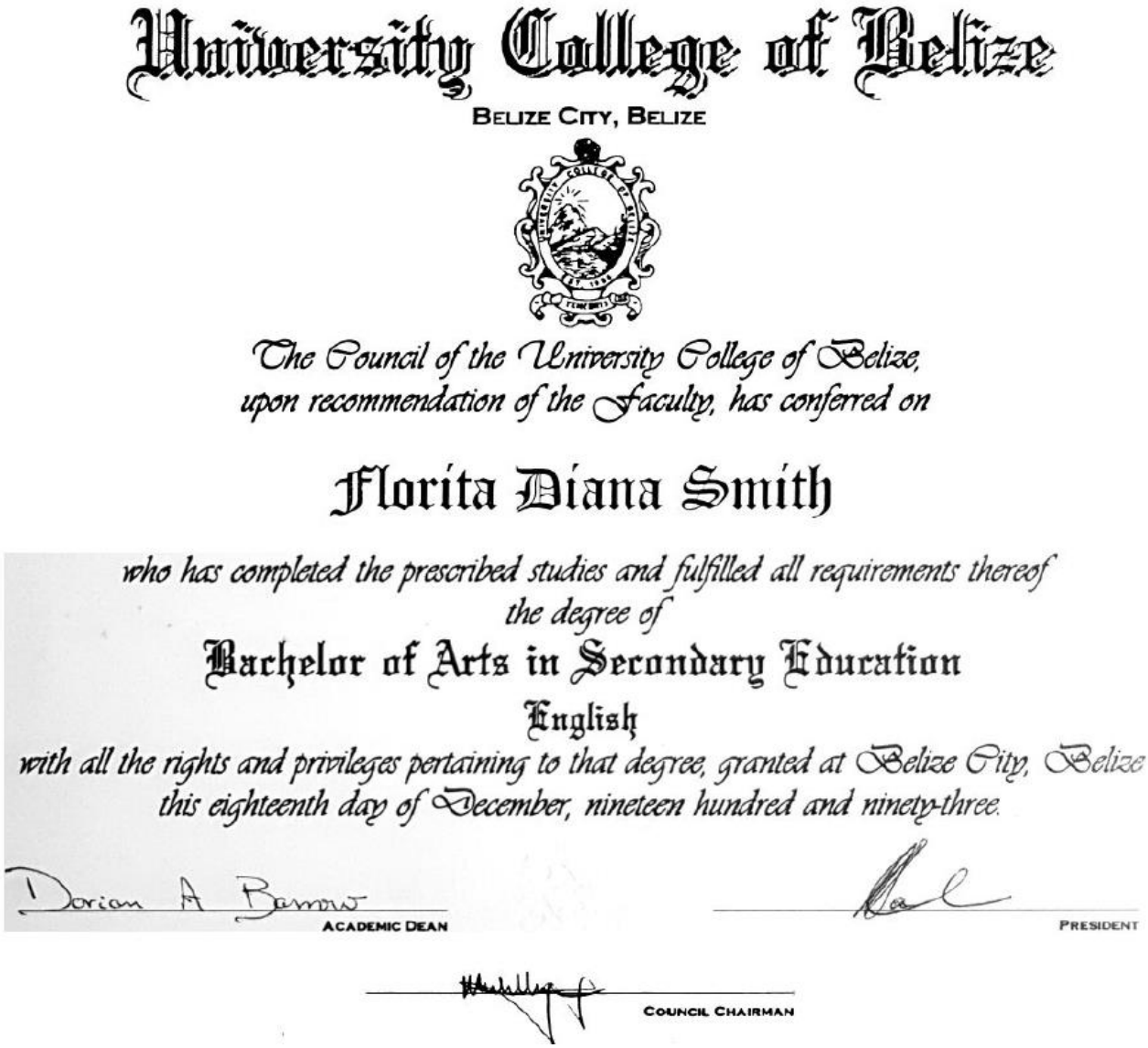
On this 2nd day of August, 2002

Program Sponsor

Dean of the College of Education

UNIVERSITY OF NORTH FLORIDA

APPENDIX I: LINGUISTIC CREDENTIALS



University College of Belize

BELIZE CITY, BELIZE

The Council of the University College of Belize,
upon recommendation of the Faculty, has conferred on

Florita Diana Smith

who has completed the prescribed studies and fulfilled all requirements thereof
the degree of

Bachelor of Arts in Secondary Education

English

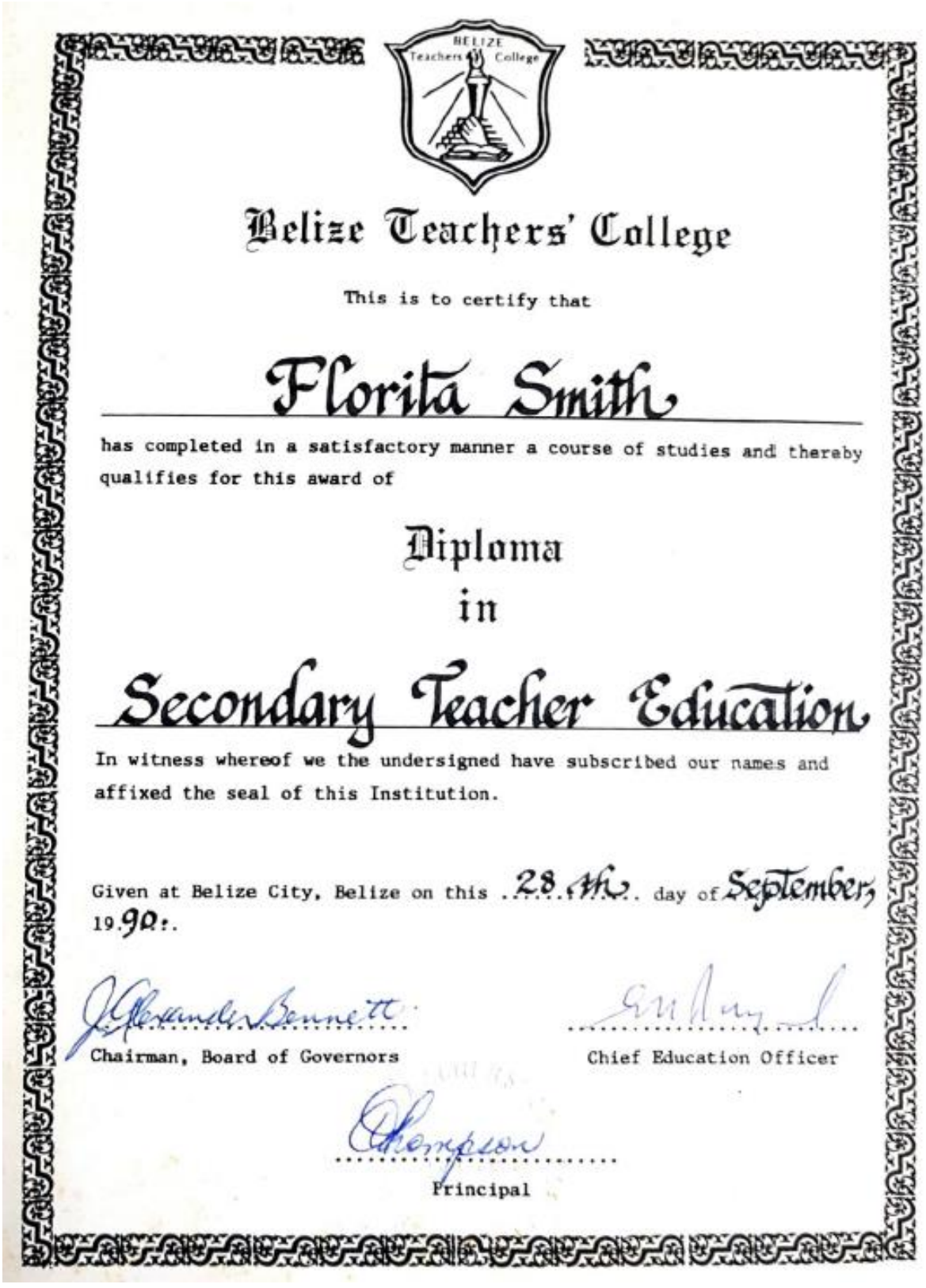
with all the rights and privileges pertaining to that degree, granted at Belize City, Belize
this eighteenth day of December, nineteen hundred and ninety-three.

Dorian A Bamow
ACADEMIC DEAN

PRESIDENT

COUNCIL CHAIRMAN

APPENDIX J: LINGUISTIC CREDENTIALS



Belize Teachers' College

This is to certify that

Florita Smith

has completed in a satisfactory manner a course of studies and thereby qualifies for this award of

Diploma

in

Secondary Teacher Education

In witness whereof we the undersigned have subscribed our names and affixed the seal of this Institution.

Given at Belize City, Belize on this 28th day of September, 1990.

Chairman, Board of Governors

Chief Education Officer

Principal