

UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL  
(UCI)

EVALUATING THE EFFECTIVENESS OF PUBLIC-PRIVATE-PARTNERSHIP  
PROJECTS TO DEVELOPMENT IN JAMAICA THROUGH PROJECT  
MANAGEMENT LENS: THE CASE OF HIGHWAY 2000 VS SANGSTER  
INTERNATIONAL AIRPORT

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## DEDICATION

*“Education is the most powerful weapon we can use to change the world.”*

*~ Nelson Mandela ~*

This Final Graduation Project is wholeheartedly dedicated to my husband, André, who has been a source of inspiration and provided sacrificial care and emotional support throughout this long and arduous process.

To my parents, Orett and Shama, without whom there would have been no journey – instilling from an early age the value of ‘the most powerful weapon’ and the importance of prayer. To my aunt, Shamin, who always believed in me and helped keep me grounded and maintaining proper perspective.

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Firstly, the researcher would like to thank the Almighty, without whom none of this would be possible – for granting the gifts of patience, perseverance, and wisdom to accomplish this mammoth task. I am wholly indebted to my family and my circle of friends for their continued encouragement, prayers, and unwavering support through what has been an onerous two (2) years of graduate study. It would be remiss of me to not acknowledge the instrumental support and understanding received from my work family at the UNEP Cartagena Convention Secretariat, as this enabled me to successfully complete this FGP.

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## ABSTRACT

For several years, public-private partnership (PPP) projects have been a valuable panacea for the development and/or rehabilitation of critical public infrastructure in Jamaica. These projects have served to eliminate poverty and stimulate economic growth. Within that context, the objective of this document is to develop a stratagem which evaluates the effectiveness of two (2) PPP projects in Jamaica, using PMI's theoretical framework. The need for this study arose from the notion that infrastructural development projects in Jamaica, generally, are delivered with cost overruns, schedule constraints, and quality shortfalls.

Through this analytical and qualitative study, which utilized semi-structured interviews, the analysis of literature from previously published documents, coupled with the use of tools stipulated by the PMI, the performance of two (2) already completed public-private partnership projects in Jamaica were evaluated using PMI's broader measures of success. Thus, the end product will be a compendium of individualized findings and analysis reports as per the knowledge areas prescribed by the PMI. It is anticipated that the finalized document will add to the body of literature on project management and public-private partnerships and will also be a reference for the Government of Jamaica (GoJ), project management practitioners, private sector, and policymakers in Jamaica, as well as in other Latin American and Caribbean countries.

Additionally, the mapped dimensions not only present a benchmark to diagnose the scope of PPP project success but also proffer a solid foundation for other academics to conduct supplementary studies vis-à-vis PPP project success. The FGP findings provide a well-informed basis revealing that the GoJ through PPP arrangements had significantly contributed to infrastructural development through improved logistical networks, accruing tremendous economic benefits as a result. The two (2) PPP projects in Jamaica were considerably framed within the PMI's theoretical schema (though not explicitly) which contributed to the successful development and execution of the projects. Furthermore, well defined supporting documentation, policy and the projects' robust institutional frameworks ensured adequate scope, cost and schedule management along with established approaches to risk, quality and procurement. Notwithstanding, it is recommended that the two concessionaires and the GoJ standardize project methodologies, establish relevant information and investors' repositories and establish protocols for consistent communication amongst stakeholders. Moreover, due to the intricacies involved in large, complex projects such as PPPs, tools and techniques relevant to quality assurance and control processes should be applied to prevent any future infrastructure failures. The study also recognized the need for better risk allocation measures and improved transparency and criteria elaboration of contracts. Conclusively, it is confirmed that this study will facilitate the development and execution of more successful PPP projects as it will illustrate the need to incorporate project management best practices as postulated by the PMI.

**Key Words:** *Project Management, Public-private Partnerships (PPP), Project Management Institute (PMI), Jamaica, Infrastructure Development*

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## ABBREVIATIONS AND ACRONYMS

AASHTO	-	American Association of State Highway Transport Officials
BFOT	-	Build-finance-operate and transfer
CA	-	Control Account
CCTV	-	Closed-circuit Television
CDB	-	Caribbean Development Bank
CEO	-	Chief Executive Officer
CHEC	-	China Harbour Engineering Company Limited
CMSE	-	Communications Management and Stakeholder Engagement
CPI	-	Cost Performance Index
CQI	-	Continuous Quality Improvement
CV	-	Cost Variance
DBJ	-	Development Bank of Jamaica Limited
EVM	-	Earned Value Management
FGP	-	Final Graduation Project
GDP	-	Gross Domestic Product
GoJ	-	Government of Jamaica
IATA	-	International Air Transport Association
ICAO	-	International Civil Aviation Organization
IDB	-	Inter-American Development Bank
IFC	-	International Finance Corporation
IFRS	-	International Financial Reporting Standards
ISO	-	International Organization for Standardization
JAMPRO	-	Jamaica Promotions Corporation
JIO	-	Jamaican Infrastructure Operator
JIS	-	Jamaica Information Service
JTB	-	Jamaica Tourist Board
KMA	-	Kingston Metropolitan Area
LAC	-	Latin America and the Caribbean
MPM	-	Master in Project Management

NGO	-	Non-governmental Organization
NIBJ	-	National Investment Bank of Jamaica
NRCA	-	Natural Resources Conservation Authority
NWA	-	National Works Agency
OBS	-	Organizational Breakdown Structure
PA	-	Public Address System
PBS	-	Product Breakdown Structure
PERT	-	Program Evaluation Review Technique
PICA	-	Passport, Immigration and Citizenship Agency
PIOJ	-	Planning Institute of Jamaica
PMBOK	-	Project Management Body of Knowledge
PMI	-	Project Management Institute
PMIS	-	Project Management Information System
PMO	-	Project Management Office
PPP	-	Public-Private Partnership
PRINCE2®	-	PRojects IN Controlled Environments
QMIS	-	Quality Management Information System
RFP	-	Request for Proposal
RMP	-	Requirements Management Plan
SIA	-	Sangster International Airport
SMART	-	Specific, Measurable, Achievable, Realistic, and Timely
SPI	-	Schedule Performance Index
SV	-	Schedule Variance
TPDCo	-	Tourism Product Development Company
UCI	-	University for International Cooperation
UDC	-	Urban Development Corporation
USD	-	United States Dollar
VfM	-	Value for Money
WBS	-	Work Breakdown Structure

## **EXECUTIVE SUMMARY**

In the 21st century, public-private partnerships (PPP) have gained popularity within the Latin America and Caribbean (LAC) region as a valuable public policy instrument for infrastructural development. In that regard, the Government of Jamaica recognized the need to initiate discussions with private actors to generate a responsive and adaptable problem-solving strategy to address societal constraints and deliver innovative results. From these negotiations arose the proposal of two (2) notable PPP projects: Highway 2000 and the Sangster International Airport; both commenced execution in 2003. Though both have now been completed, the projects faced some constraints: cost overruns, delayed schedules, and quality shortfalls. This final graduation project (FGP) intends to utilize the PMI's project management tenets to evaluate the effectiveness of these two (2) public-private-partnership projects to development in Jamaica. The completed document will provide substantial benefits to its stakeholders, as it will serve as a reference for the design and execution of future PPP project initiatives, increase probability of successfully completed PPP projects, share best practices to ensure projects meet and/or exceed expectations, and as a reminder of the need for documenting lessons learned to increase future project efficiency.

The general objective of this dissertation is to utilize the Project Management Institute's ten (10) knowledge areas to evaluate the effectiveness of public-private-partnership projects to development in Jamaica. It analyzes two (2) PPP projects in particular: Highway 2000 and the Sangster International Airport to make this determination. Other supporting specific objectives of this FGP include: to assess whether the various project management processes and activities were well-integrated and elaborated in the respective charters for both PPP projects; to identify and evaluate the Scope Management Plan for both PPP projects to determine those activities which needed to be executed to achieve the projects' objectives; to determine if a Schedule Management Plan had been crafted for both PPP Projects - documenting project activities, their attributes, and relationships to enable timely project completion; to determine if the Cost Management Plan devised for both projects stipulated the policies and procedures to plan the project's budget, appropriately allocated project funding, and managed the project's cash flow; to verify if a Quality Management Plan was drafted defining the quality parameters (local and international) to be adopted in the management of both PPP projects, so as to ensure that project results meet expectations for approval; to investigate if Resource Management Plans were designed for both PPP projects identifying and specifying how project resources were to be managed to ensure those project activities were completed within time, cost, and scope constraints; to establish whether Communications Management Plans were created for both PPP projects dictating the communication mediums used to communicate internally and externally to ensure that all key stakeholders were kept informed regarding project status; to ascertain if Risk Management Plans were drafted for both PPP projects and if the plans identified and evaluated (categorized) the projects' main risks, and planned mitigation measures for the most critical ones; to examine the Procurement Management Plans of the two (2) PPP projects to ensure that they

clearly defined the parameters under which goods and services were acquired so that relevant resources were available for the timely and cost-effective completion of the projects; to assess the Stakeholder Management Plans that were designated for both PPP projects to ensure that they identified the relevant project's key stakeholders and designated the strategy to effectively engage, monitor, and manage them throughout the project lifecycle.

The methodology framework employed for this FGP includes the use of information sources, research methods, assumptions and constraints, and tools and deliverables. Information sources were both primary and secondary, inclusive of semi-structured interviews, project documents (charters, newsletters, reports, among others), periodicals, case studies, textbooks such as the PMBOK® Guide, and newspaper articles. To support the findings and analysis, analytical and qualitative approaches were used and facilitated conclusive arguments being reached with regard to the research objectives. For each of the specific objectives, some assumptions and constraints were identified and elaborated. Several PMI designated tools were utilized in the execution of the FGP to obtain deliverables that meet the achievement of the project objectives.

Conclusively, the overall results of the FGP indicate the areas of opportunity, primarily surrounding cost, schedule, and quality, to be considered for improvement to realize PPP project effectiveness, thus solidifying the need to carry out the study. The two (2) PPP projects were delivered within budget and of high quality but were slightly behind schedule; despite the latter, the two public assets upon completion have been contributing significantly to national development. Further, of equal importance, the two (2) PPP projects in Jamaica were considerably framed within the PMI's theoretical schema (though not explicitly) which contributed to the successful development and execution of the projects. As there is room for improvement, it is recommended that for future PPP projects in Jamaica, that project management methodologies be standardized, easily accessible and centralized information and investors' repositories be established, and protocols for consistent communication among stakeholders be developed. Additionally, a more deliberate approach is needed to ensure that resource management is expounded upon as was done for the other knowledge areas. This study will facilitate the development and execution of more successful PPP projects, as it illustrates the need to incorporate project management best practices as postulated by the PMI. In that regard, from the completed Findings and Analysis Reports, the stakeholders will be better guided to design PPP projects which deliver results, and which are completed as per acceptable international standards.

## INTRODUCTION

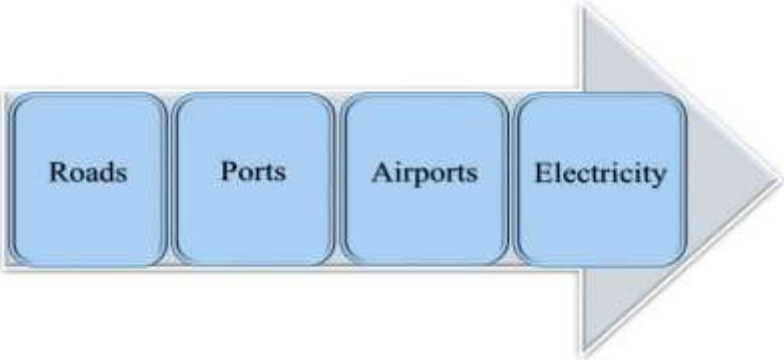
The introductory chapter of this FGP provides general information on this dissertation. This information is vital as it gives context to the statement of problem deliberated within the FGP and on the specific case study. Several elements are developed within this chapter inclusive of the background, statement of problem, research purpose, and the research objectives (general and specific).

### 1.1. Background

Public-private partnerships (PPP) have gained much interest within the Latin America and Caribbean (LAC) region as a public policy instrument for infrastructural development in the 21st century. The Canadian Council for Public-Private Partnerships (n.d.) provides the following definition for a public-private partnership, “*a cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards*”. PPPs are often deemed to be an important contrivance to re-industrialize public policy, founded on the premise that inclusion of private partners in the development of the national socio-economic system will result in better quality projects and greater value for money. It can be assumed that project quality is the degree to which a compendium of intrinsic characteristics fulfills project requirements. Likewise, value for money (VfM) as it relates to projects is concerned with cost minimization, output maximization, and the complete attainment of intended project results.

Throughout its history, Jamaica has been unsuccessful in securing and maintaining the financing needed for its infrastructural needs. Consequently, the Government of Jamaica (GoJ) recognized the critical need for an alliance with private partners with the hope of narrowing the financial gap. As a solution, the GoJ initiated preliminary discussions with private actors to generate a responsive and adaptable problem-solving strategy to address societal constraints and deliver innovative results. Since the 1980s, Jamaica has had a mixed experience with the development and implementation of Public-Private Partnerships (PPPs) (Bennett, 2017). Figure 1 highlights the varied project areas in which the GoJ has sought to

utilize PPPs for infrastructure upgrading and development. Two (2) of the most notable PPP projects in Jamaica are Highway 2000 and the Sangster International Airport which both commenced execution in 2003. As PPPs were still in their nascent phase in Jamaica, these two (2) projects were executed prior to the development of a comprehensive policy framework and guidelines.



**Figure 1:** Project areas in which the GoJ has utilized PPPs for infrastructure upgrading and development (Source: Parker, 2020)

Highway 2000 was a prominent and revolutionary Public-Private Partnership (PPP) project that continues to positively impact the lives of several Jamaicans daily. It is considered to be Jamaica’s largest road infrastructural project and was executed on a phased basis. The first phase, the East-West Highway, was the result of an international tender in 2001, which was won by French contractor, Bouygues Travaux Publics in partnership with toll operator Vinci. The second phase, the North-South Link, originated in 2011 from an unsolicited proposal from China Harbour Engineering Company Limited (CHEC) (Samuel Brian, 2017). This large-scale PPP project was proposed as the solution to Jamaica’s increasing transportation needs. The highway has proven to be a catalyst for significant economic growth and development in Jamaica as it has stimulated the expeditious movement of people and goods between the various commercial markets along the transport corridors, and by extension, the creation of jobs.

In the early 1990s, the unbearable climatic conditions experienced by tourists visiting Jamaica via Montego Bay’s Sangster International Airport (SIA) had become a deterrent and was crippling the tourism product (Samuel Brian, 2015). Thus, the GoJ recognized the need to modernize the airport’s infrastructure and

expand its capacity as a means of addressing the consequential deficit in the gross domestic product (GDP). As the SIA served as a major contributor to the country's economy and the primary gateway for access to Jamaica's tourism mecca along the northern coastal corridor, the GoJ sought foreign investment to privatize the Sangster International Airport. Vancouver Airport Services Consortium was the selected bidder; the project began in 2003 and was executed on a phased-basis. The investment of over US\$200 million for the expansion and improvement of the facilities has enabled the SIA to receive several industry awards.

The two (2) iconic infrastructural projects referenced above were successfully facilitated through the modality of PPPs. Despite the apparent successful application of PPPs to these projects in Jamaica, as it relates to project management, there were some constraints that need to be addressed. This research hopes to determine how effective PPPs are to the project management landscape and in turn their usefulness to the development of Jamaica.

## **1.2. Statement of Problem**

Progressive infrastructural development is intricately linked to socio-economic growth and thus is the backbone of a country. Developing countries within the LAC region, including Jamaica, have gravitated towards utilizing PPPs as a mechanism to achieve this. According to Jamaica's Minister of Finance and Public Service, Dr. Nigel Clark, "*Jamaica is ranked fourth in Latin America and the Caribbean (LAC) for its capacity to successfully undertake PPPs.*" (Jamaica Observer, June 2019). Despite this commendation, evidence has shown that the Highway 2000 and the Sangster International Airport projects were completed over budget, behind schedule, and with quality issues. Had these projects utilized PMI standards, which ensure maximum success realization, that is - within the constraints of time, scope, budget, and quality - perhaps the results would have been different.

In many instances, project elements such as quality, time, scope, and budget become constraints due to reasons such as poor planning, lack of accountability, and use of inconsistent methodologies. As previously noted, most countries secure financing through PPP's to meet their infrastructural needs, to fill

financial gaps as well as to realize project success. However, the reality is often that when PPP projects are completed with budget overruns, delayed schedules, and with the need for rework due to quality issues, the country's contractual responsibilities are affected in the form of longer amortization periods. This situation creates a dilemma for the government of a country as their agreed-upon financial commitment then inherits additional debt and the purpose of utilizing a PPP for infrastructural development would be twice-defeated. Therein lay the problem for the two (2) referenced projects.

Hence, this Final Graduation Project (FGP) seeks to utilize the PMI's project management tenets to evaluate the effectiveness of these two (2) public-private-partnership projects and their contribution to development in Jamaica. The author will firstly identify the methodology used to execute both projects and secondly conduct an in-depth evaluation of the two (2) projects against PMI standards. Additionally, the author hopes to provide recommendations on how the use of PMI standards can aid in the implementation of the PPP model for future infrastructural development in Jamaica.

### **1.3. Purpose**

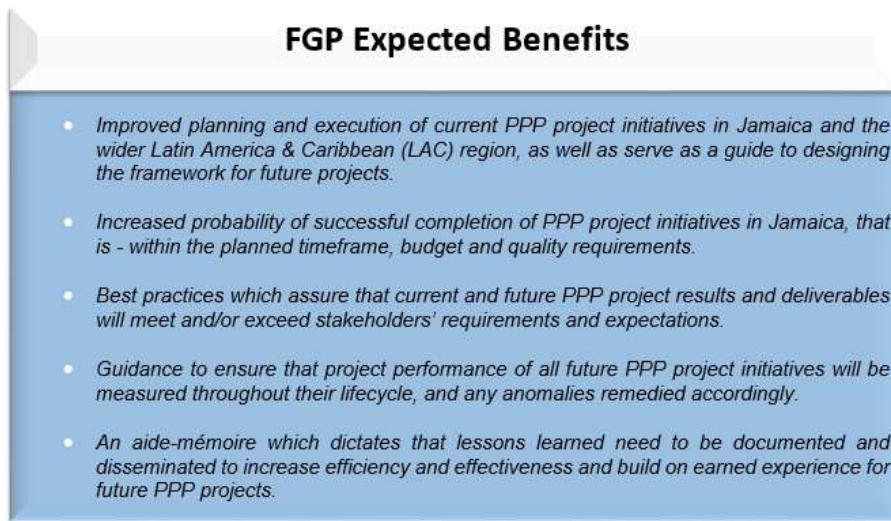
This Final Graduation Project (FGP) is being elaborated for the partial fulfillment of the Master in Project Management (MPM) Programme offered at the University of International Cooperation (UCI) in San José, Costa Rica.

The purpose of this FGP arose from the hypothesis that PPP projects in Jamaica are often delivered over budget, behind schedule, and with quality shortfalls as a result of the utilization of a failed execution modality. Based on the above statement of the problem, an analysis will be undertaken to discuss whether the application of the PMI framework could have contributed to the referenced PPP projects being completed within schedule, within budget, and of greater quality. This study is being done to shed further light on the effectiveness of public-private-partnership (PPP) projects to development in Jamaica through project management lens. As such, it evaluates two (2) PPP projects, in particular – Highway 2000 and the Sangster International Airport.



This research is intended to add to the body of knowledge on PPP project initiatives undertaken by the Government of Jamaica (GoJ) in light of the country's overall development. This analysis and its conclusions are framed within the standards of the Project Management Institute (PMI).

By way of executing this FGP, Figure 2 highlights the expected benefits to be derived:



**Figure 2:** *Expected Benefits of Conducting this FGP (Source: Parker, 2020)*

#### **1.4. General Objective**

The general objective of this dissertation is to utilize the Project Management Institute's ten (10) knowledge areas to evaluate the effectiveness of public-private-partnership projects to development in Jamaica. It analyzes two (2) PPP projects in particular: Highway 2000 and the Sangster International Airport to make this determination.

#### **1.5. Specific Objectives**

Other supporting specific objectives of this FGP include:

1. To assess if the various project management processes and activities were well-integrated and elaborated in the respective charters for both PPP projects.
2. To identify and evaluate the Scope Management Plan for both PPP projects to determine those activities which needed to be executed to achieve the projects' objectives.

3. To discover whether a Schedule Management Plan was crafted for both PPP Projects to include documenting project activities, their attributes, and relationship to enable timely project completion.
4. To determine if the Cost Management Plan devised for both projects stipulated the policies and procedures to plan the project's budget, appropriately allocate project funding, and manage the project's cash flow.
5. To verify if a Quality Management Plan was drafted defining the quality parameters (local and international) to be adopted in the management of both PPP projects, so as to ensure that project results met expectations for approval.
6. To investigate whether Resource Management Plans were designed for both PPP projects to identify and specify how project resources were managed to ensure those project activities were completed within time, cost, and scope constraints.
7. To establish whether Communications Management Plans were created for both PPP projects dictating the communication mediums used to communicate internally and externally to ensure that all key stakeholders were kept informed regarding project status.
8. To ascertain if Risk Management Plans were drafted for both PPP projects and if these plans identified and evaluated (categorized) the projects' main risks, and planned mitigation measures for the most critical ones.
9. To examine the Procurement Management Plans of the two (2) PPP projects to ensure that they clearly defined the parameters under which goods and services were acquired so that relevant resources were available for the timely and cost-effective completion of the projects.
10. To assess the Stakeholder Management Plans that were designated for both PPP projects to ensure that they identified the relevant project's key stakeholders and designated the strategy to effectively engage, monitor, and manage them throughout the project lifecycle.

## THEORETICAL FRAMEWORK

This chapter develops the theoretical framework for this FGP. Its purpose is to clearly define the specific viewpoint being taken to analyze and interpret the data to be collected. It therefore aims to limit the scope by providing an in-depth understanding of the varied concepts and variables of the FGP topic – *“Evaluating the effectiveness of public-private-partnership projects to development in Jamaica through project management lens: the case of Highway 2000 vs Sangster International Airport”*.

In the main, the framework of the governmental entity with primary responsibility for the establishment of PPPs in Jamaica – the Development Bank of Jamaica Limited, is elaborated. It then continues to present the author’s review of literature on the following major topics:

- Project
- Project Management
- Project Life Cycle
- Project Management Processes
- Project Management Knowledge Areas
- Public-private Partnerships
- Infrastructural Development
- National Development

In conducting this review of literature, the FGP author will be empowered to apply these concepts to the research findings and arrive at justifiable recommendations and conclusions.

### 2.1 Organizational Framework

An organizational framework can be defined as the roadmap which strategically guides an organization on the way forward to achieving its mission and vision. A robust framework facilitates the development of an organizational culture whereby employees can be innovative yet possess the ability to collaborate

effectively to achieve organizational objectives. Thus, the framework encompasses the following:

- ✓ Organization Background
- ✓ Mission and Vision Statements
- ✓ Organization Logo
- ✓ Organization Slogan
- ✓ Core Values
- ✓ Organizational Structure
- ✓ Services Offered

In that regard, the FGP author will outline the Development Bank of Jamaica Limited's organizational framework and show how the Final Graduation Project will enhance the operations of the organization in its future initiatives to secure financing for future PPP projects for national development in Jamaica.

### **2.1.1 Organization Background**

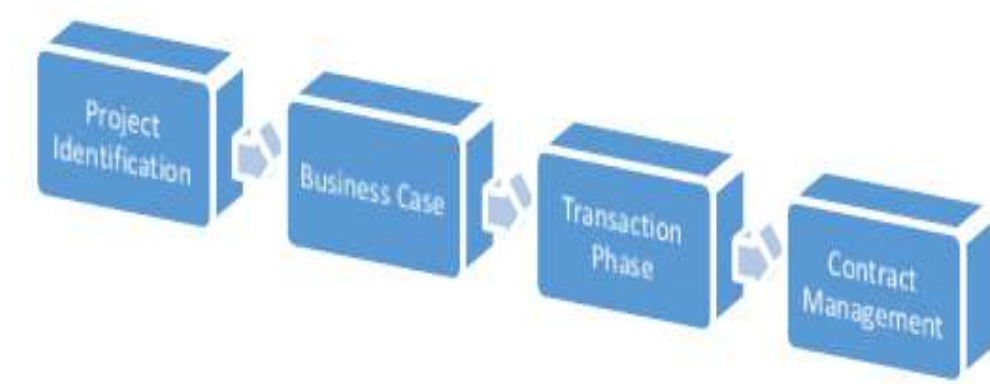
On 1 April 2000, the Development Bank of Jamaica Limited (DBJ) was established as a wholly-owned corporation of the Government of Jamaica (GoJ), with its only shareholder being Jamaica's Accountant General (Development Bank of Jamaica Ltd., n.d.). The DBJ is the outcome of a merger of two (2) former state entities – the Agricultural Credit Bank of Jamaica Limited and the National Development Bank of Jamaica Limited. According to the Jamaica Information Service (JIS) (n.d.), another amalgamation took place in September 2006 with the DBJ acquiring the operations, assets and liabilities of the National Investment Bank of Jamaica (NIBJ).

Under the supervision of Jamaica's Ministry of Finance and the Public Service, the DBJ plays a pivotal role in the promotion of economic growth and development within the productive sectors of the Jamaican economy. In fulfilling its mandate, the DBJ utilizes an innovative and practical approach to development financing which incorporates specific projects and programs which are in alignment with the GoJ priority areas to advance national development. Thus, in keeping with

its mandate to assist the state with seeking financing for infrastructural development, the DBJ established its PPP Unit.

The DBJ's PPP Unit has responsibility for the development of the business case, transaction phase of PPPs and the daily coordination of Jamaica's PPP Programme (see Figure 3). It is inclusive of:

- Provision of advisory and administrative support to PPP Projects
- Identification and management of funds for project feasibility development
- Managing the process through to contract signing.



**Figure 3:** DBJ's Stages in the PPP Process (Source: Ministry of Finance and the Public Service, Jamaica - Jamaica's PPP Programme, n.d.)

Whilst the DBJ's role in Jamaica's PPP Programme is primarily to secure financing, its relationship with the executing agencies extends to ensuring that:

- the identified projects are feasible;
- the PPP is so designed to deliver value for money (VfM) for the country;
- the PPP is marketable to attract appropriate and qualified private partners/ investors; and
- the PPP is fiscally responsible whereby fiscal risk is minimal or practicable.

### **2.1.2 Mission and Vision Statements**

It was one of Jamaica's famous national heroes - Marcus Mosiah Garvey who asserted that "A people without knowledge of their past history, origin and culture is like a tree without roots." This notable quote embodies the purpose of an

organization's mission and vision statements. An organization's mission and vision statement can be characterized as the knowledge that guides management and staff about their history, origin and culture. Whilst both - mission and vision - are closely related; the mission emphasizes the 'today' of an organization, while the vision is focused on the future of the organization. The mission and vision statements help to define organizational culture, values, principles and beliefs that represent the individual and collective behavior of the organization.

Pursuant to the DBJ's website (<https://dbankjm.com/about-us/>), the organization's mission and vision are presented below:

**Mission Statement:** The Development Bank of Jamaica provides opportunities to all Jamaicans to improve their quality of life through development financing, capacity building, public-private partnership and privatization solutions in keeping with Government policy.

**Vision Statement:** (By 2025) DBJ is recognized as LAC's foremost development finance institution that drives private sector development and contributes to broad-based, inclusive economic growth in Jamaica.

The DBJ's mission statement adequately captures the organization's fundamental purpose. It appears to provide a baseline for effective planning and assists in giving strategic direction for the organization's initiatives. On the other hand, the vision statement of the DBJ is SMART, aptly reinforcing DBJ's mission statement, and portraying the aspirational description of what the organization would like to achieve in the future. Both the mission and vision statements of the DBJ are clearly defined and thus should enable the organization to realize success in its endeavors.

This FGP will contribute to the future achievement of the DBJ's vision as it seeks to evaluate the effectiveness of two (2) PPP projects which the DBJ has chartered. It is therefore hoped that the DBJ will be able to utilize this literature to improve their existing PPP spectrum to further drive mutually beneficial relationships to yield maximum economic growth and development in Jamaica.

The DBJ's core values, logo, and organization slogan are also shared below:

**Core Values:** *Professionalism, Integrity, Accountability, and Innovation.* These core values unequivocally support the DBJ's vision and the author anticipates also that these would aid in shaping the organization's culture.

The **logo** of the DBJ (see Figure 4) contributes to the government entity's branding and conveys their vision. Navy blue is the predominant color used in the DBJ's logo; navy blue is associated with trust, dependability, and professionalism – critical elements needed for the Bank to effectively conduct its activities. The hint of gold represented in a triangular shape symbolizes some of the organization's core values such as accountability and innovation. The logo also fittingly incorporates the organization's **slogan** - *Facilitating Economic Growth and Development.* It is evident that the DBJ's logo was designed with much foresight as it is easily recognizable and conveys the organization's vision and core values well.



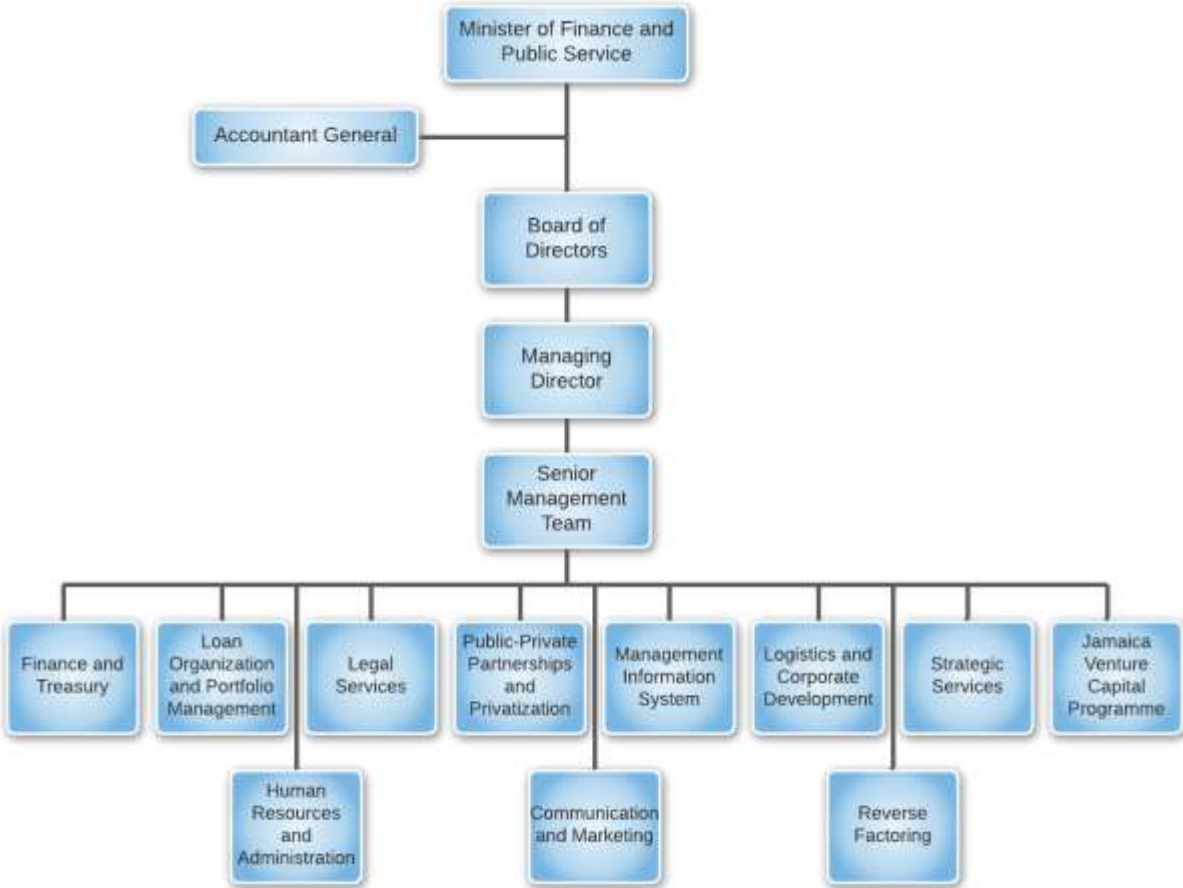
**Figure 4:** *Development Bank of Jamaica Limited's Logo (Source: [www.dbankjm.com](http://www.dbankjm.com))*

### **2.1.3 Organizational Structure**

For an organization to be functionally effective it must have an organizational structure in place; this structure influences the success of the organization. In their journal article entitled 'Organizational Structure' Ahmady et. al shared Mintzberg's (1972) definition of an organizational structure as 'the framework of the relations on jobs, systems, operating process, people and groups making efforts to achieve the goals' Ahmady et al. (2016, pp 455-462). Organizational structure, therefore, determines the hierarchy, reporting structures,

and determined duties within the organization. Some common organizational structures include: organic, functional (or centralized), multi-divisional, matrix, project-oriented, virtual, and hybrid.

Figure 5 presents the organizational chart of the Development Bank of Jamaica (DBJ).



**Figure 5:** Organizational Structure of the Development Bank of Jamaica (Source: Parker, 2020)

The organizational structure of the DBJ can be characterized as being functional or centralized as it is divided into smaller units based on specialized areas. Usmani (2020, para. 6) propositioned that “a functional structure divides the organization into departments based on their function. Each is headed by a functional manager and employees are grouped as per their role. Functional managers have experience in the roles they supervise. This ensures that



employees are using their skills effectively. It helps organizations in achieving their business objectives". This structure is typical of government entities in Jamaica. This is perhaps the case as this structure allows for greater operational efficiency as personnel with shared skills, specialties and knowledge are clustered together by business' functions.

The Minister of Finance and Public Service is positioned at the top of the organogram, as overall oversight of the DBJ falls under the Ministry's purview. Being the only representative of the GoJ, the Minister's primary responsibilities include electing and overseeing the Accountant General, who is the sole appointed shareholder on behalf of the GoJ. The Board of Directors is nomothetic by nature and thus serves as the ultimate decision-making and policy-setting body for the DBJ. In fulfilling its duties and responsibilities, the Board relies heavily on information, advice, and recommendations provided by the Senior Management team through the Managing Director. Nevertheless, the Board exercises independent judgment. The subsequent levels within the structure include: The Managing Director and the Senior Management Team, who all report to the Minister of Finance and Public Service via the Accountant General. The DBJ's structure comprises eleven (11) management units, which are headed by the senior management team. The management units via the senior management team oversee the DBJ's team leaders (managers and supervisors) and team members (account executives and entry-level staff); however, these personnel are not accounted for in Figure 5.

For the purpose of this FGP which is focused on evaluating PPP Projects, the PPP and Privatization Unit of the DBJ will be the primary source of information. The Unit is headed by Mrs. Denise Arana - with whom the FGP Project Manager conducted a semi-structured interview to collect pertinent data which will add value to the quality of information presented in the FGP.

#### **2.1.4 Services Offered**

According to the DBJ's website (<https://dbankjm.com/services/>), in fulfilling its mandate, the Development Bank of Jamaica (DBJ) provides services in the following areas:

- Financing
- Capacity Development and Technical Assistance
- Public-Private Partnership and Privatization
- Venture Capital

Bearing the above services of the DBJ in mind, and in relation to the FGP, it is evident that:

1. The DBJ provides the assurance that, as the GOJ's central PPP implementation agency, they will ensure that the stipulated policies and procedures to plan project budgets are enacted to allow for the appropriate allocation of project funding. This is in keeping with the FGP's Specific Objective 5 on Cost Management. This is also a critical element to consider when seeking financing for PPP Projects as part of their fiduciary responsibility to the GoJ is to ensure that the country does not inherit additional debt.
2. The DBJ offers capacity development and technical assistance services, through an extension program. Being the leading entity, in this regard, places them in a position to maintain a knowledge bank for resources and thus provide proper management to ensure continuous flow of infrastructural development projects in Jamaica. This guarantees that the GoJ has the resources needed to execute these PPP projects within time, cost, and scope constraints (see specific objective 7).
3. Another service offered by the DBJ is public-private partnerships and privatization. This service is directly related to the general objective of this FGP. Both PPP projects being evaluated for this FGP were commissioned by the DBJ. Thus, they will be the source of information used to effectively evaluate the project's effectiveness through a project management lens.

4. As indicated by the DBJ website, they also offer services in venture capitalism. Whilst this may not directly relate to the FGP, it does provide an avenue for the GoJ to consider in its future project financing endeavors.

## **2.2 Project Management Concepts**

In being able to successfully execute this FGP, the author firstly needs to be familiarized with some main project management concepts, such as: project, project management, project life cycle, knowledge areas, project management processes and process groups. Additionally, as this FGP aims to evaluate two (2) PPP projects and their contribution to development, the author will also need to review literature on public-private partnerships, infrastructure development and national development.

The author in reviewing the literature for each concept will also aim to relate these concepts to the development of the FGP.

### **2.2.1 Project**

Several academics, technocrats and references have provided varying definitions of a project in diverse ways. Thus, for contextual purposes, it is essential to fully understand what is meant by the term 'project'.

According to A Guide to the Project Management Body of Knowledge (PMBOK® Guide) - Sixth Edition (PMI, 2017, p. 4), a project is a temporary endeavor undertaken to create a unique product, service or result. From this definition, one can deduce that a project has a finite timespan - possessing a definite beginning and end. It can also be construed that a project is exceptional – no other project before or after will possess all the same elements. However, some have argued that this aspect of the definition neglects opportunities to seize, recycle and benefit from previous knowledge, experiences, and lessons learned.

Lynch (2019) shares the following definition of a project as “a unique, transient endeavor, undertaken to achieve planned objectives, which could be defined in terms of outputs (scope), outcomes or benefits (quality). This definition is

relatively similar to the definition postulated by the PMI - incorporating the common characteristics: unique and transient.

A more diverse definition was elaborated by Ohara (2005, p. 15), “a project is a value creation undertaking based on specifics, which is completed in a given or agreed timeframe and under constraints, including resources and external circumstances”. This definition accounts for the constraints under which a project is executed.

This FGP’s general objective is to utilize the Project Management Institute’s ten (10) knowledge areas to evaluate the effectiveness of public-private-partnership projects to development in Jamaica. It analyzes two (2) PPP projects in particular: Highway 2000 and the Sangster International Airport to make this determination. Given the temporal and unique nature of this Final Graduation Project and its specific purpose and expected results, the project definitions provided will be related to this FGP.

### **2.2.2 Project Management**

There has been much debate surrounding the definition of project management. This debate is provoked by the question: is project management an art or a science?

Project Management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements (PMBOK® Guide – Sixth Edition, p. 10). This definition suggests that it is a mixture of knowledge, skills and tools and techniques which will enable the realization of project success. It is indeed technical skills (science) and the use of adept techniques (art) which facilitate value delivery to the project’s stakeholders.

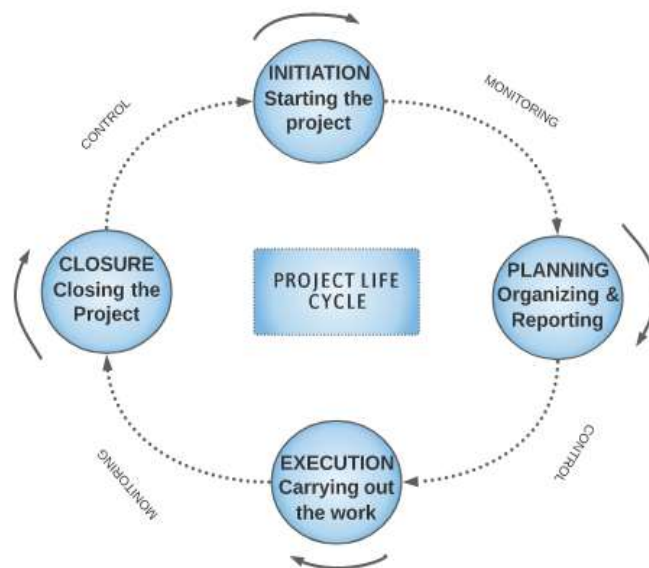
Moreover, Axelos (n.d.) advanced that project management can be defined as the discipline of applying specific processes and principles to initiate, plan, execute and manage the way that new initiatives or changes are implemented within an organization. From this definition, it can also be inferred that it is a thoroughly integrated body which embodies the facets of both - science and art.

For the purpose of this FGP, project management is characterized as an organized body of knowledge with universal application - a combination of technique and art to lead the project to value delivery. To deliver value to the FGP's stakeholders, the project manager will be required to apply both science and art in project execution.

### 2.2.3 Project Life Cycle

A project life cycle is the series of phases that a project passes through from its start to its completion (PMBOK® Guide – Sixth Edition, p. 19). The life cycle of a project provides the basic structured framework for monitoring and controlling the project budget and schedule for each phase of the project.

Figure 6 depicts the standard project life cycle as advanced by the Project Management Institute. The four (4) project phases that denote the life of the project are: initiation, planning, execution and closure. It is during these phases that the project team operates to achieve the objectives of the project. One integral element that ought not be missed is that all throughout the project life cycle, monitoring and controlling should be taking place - this is critical for project success.



**Figure 6:** *The Project Life Cycle (Source: Mavenlink, n.d.)*

This FGP will be executed over a period of five (5) months; therefore, its schedule is tight. It is anticipated that the FGP will navigate a similar life cycle as

put forward by the PMI. In that regard, the project manager will ensure that monitoring and controlling of project deliverables is conducted throughout to ensure that targets are met. In doing so, the project manager is ensuring that the FGP is delivered successfully.

#### 2.2.4 Project Management Processes

There are varied ways in which a project can be managed. Nevertheless, projects are best managed with an agreed-upon methodology. Specified processes are essential in ensuring a project's efficiency, effectiveness and success.

The PMBOK® Guide – Sixth Edition (2017, p. 22) posits that, “project management is accomplished through the appropriate application and integration of logically grouped project management processes, which are categorized into five (5) process groups.” The process groups are initiating, planning, executing, monitoring and controlling and lastly closing (see Figure 7). The PMI further cites that, “these processes ensure the effective flow of the project throughout its life cycle.”



**Figure 7:** *The Project Management Processes (Source: Parker, 2020)*

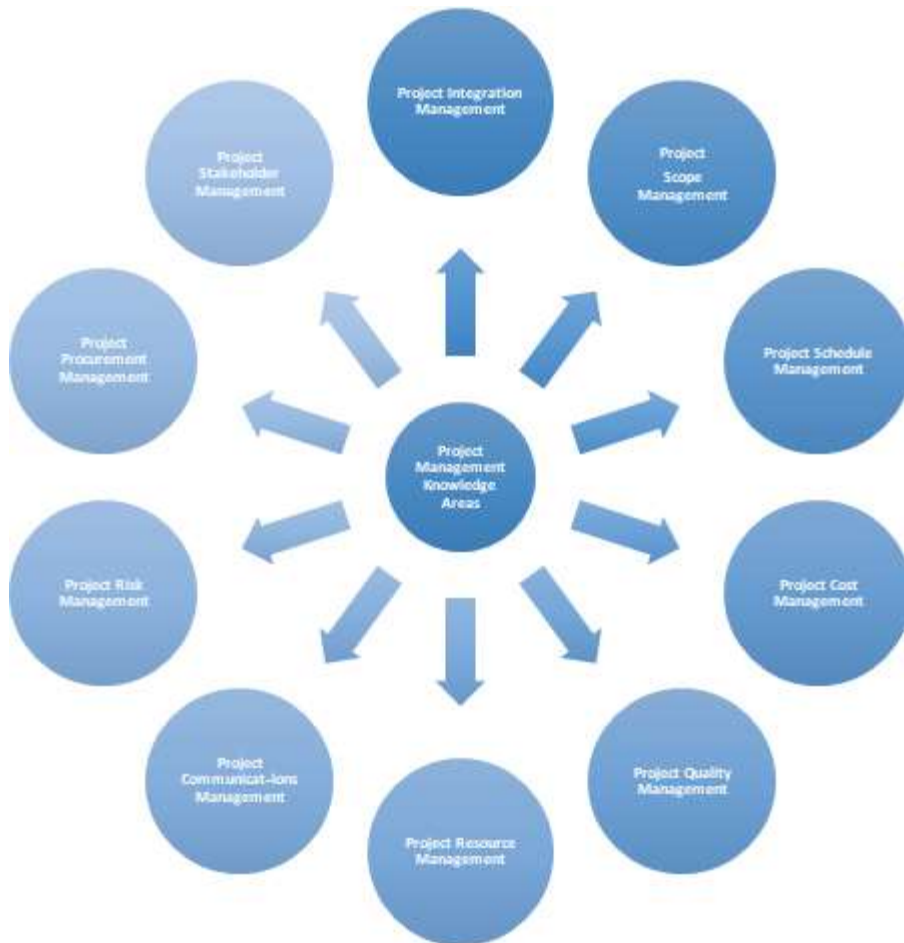
For this FGP, the five (5) project management process groups, from project initiation to project closure, will be followed. In the initiation process, the FGP project manager will appropriately define the parameters of the FGP and seek authorization to commence. During the planning process, the project manager will verify the project scope, refine the FGP objectives and define the approach to be taken to achieve the FGP objectives. The executing process focuses on the work the project manager will perform to satisfy the FGP requirements. The monitoring

and controlling process will require the project manager to track, assess, and regulate FGP progress; while managing the integrated change control process in a timely manner. Finally, the project manager will need to formally close the project.

### **2.2.5 Project Management Knowledge Areas**

The PMBOK has become a *de facto* international standard for project management knowledge (Crawford and Pollack, 2008). In the PMBOK® Guide - Sixth Edition, the PMI has divided project management into ten (10) digestible fragments, which it refers to as the project management knowledge areas (see Figure 8).

A knowledge area as defined by the PMBOK® Guide - Sixth Edition is an identified area of project management defined by its knowledge requirements and described in terms of its components processes, practices, inputs, outputs, tools, and techniques. Westland (2019) advanced that the knowledge areas are the core technical subject matter, which are necessary for effective project management. Thus, for a project to realize success, the project manager should be familiar and comfortable with navigating each knowledge area.



**Figure 8:** *The PMI Project Management Knowledge Areas (Source: Parker, 2020)*

The PMI knowledge areas include: Project Integration Management, Project Scope Management, Project Schedule Management, Project Cost Management, Project Quality Management, Project Resources Management, Project Communications Management, Project Risk Management, Project Procurement Management, and Project Stakeholder Management.

***Project Integration Management:***

Project Integration Management includes the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the project management process groups. (PMBOK® Guide (2017) – Sixth Edition, p. 69). Accordingly, this is the knowledge area that combines all other knowledge areas to achieve project success. Explicitly, project



integration management comprises the main attributes of all unification, communication, and integrative feats that facilitate meeting project requirements.

### ***Project Scope Management.***

According to the PMBOK® Guide (2017), project scope management includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully. Ivensis (n.d., para. 1) shared the following definition of project scope management, “the process to ensure that a particular project includes all the work relevant/appropriate to achieve the project's objectives.” Project Scope Management, then, serves as a guide - directing and managing the scope of the project. The primary objective of project scope management is to ensure that the project team and stakeholders share a similar understanding of the project’s end result and the processes to be used to achieve the objectives. This is adequately corroborated in the definition put forward by KissFlow (2020, para. 4), “a process that helps in determining and documenting the list of all the project goals, tasks, deliverables, deadlines, and budget as a part of the planning process.”

### ***Project Schedule Management.***

Project Schedule Management includes the processes required to manage the timely completion of the project. (PMBOK® Guide (2017) – Sixth Edition, p. 173). Project schedule management is the knowledge area which estimates the duration needed to successfully complete project deliverables. In that regard, one can infer that an effective project schedule is critical for achieving project success.

### ***Project Cost Management.***

The PMBOK® Guide (2017) asserts that Project Cost Management includes the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so that the project can be completed within the approved budget. Consequently, project cost management is critical and requires much attention as it ensures that the project is completed within the project

sponsor's planned and approved budget. Accurate estimation techniques are therefore essential to project cost management. Failure to effectively estimate project costs can have negative implications for the project.

### ***Project Quality Management.***

Project Quality Management includes the processes for incorporating the organization's quality policy regarding planning, managing, and controlling project and product quality requirements to meet stakeholders' objectives. Project Quality Management also supports continuous process improvement activities as undertaken on behalf of the performing organization. (PMBOK® Guide – Sixth Edition, p. 271). Similarly, Ray (2018) defined project quality management as 'the processes and activities that are used to figure out and achieve the quality of the deliverables of a project. If a project does not meet its quality requirements, it is a failure.

### ***Project Resource Management.***

Project Resource Management includes the processes to identify, acquire, and manage the resources needed for the successful completion of the project. (PMBOK® Guide – Sixth Edition, p. 307). It can therefore be inferred that resource management is inclusive of planning and allocating project resources efficiently. A blog article by the team at Beyond Software (n.d.) summarized resource management best. Resource management (done effectively) is the process of putting the right people (resources), in the right place, at the right time.

### ***Project Communications Management.***

According to the PMBOK® Guide (2017), Project Communications Management includes the processes necessary to ensure that the information needs of the project and its stakeholders are met through the development of artifacts and the implementation of activities designed to achieve effective information exchange. As maintained by Chand (2019), project communications management covers various processes which ensure that the correct project

information is delivered to the correct teams and at the correct time. One might add that the correct project information also needs to utilize the correct medium in reaching its intended recipients. Effective project communication aids in establishing and maintaining healthy relationships between diverse stakeholders; thus, it maximizes success and minimizes risk for the project.

### ***Project Risk Management:***

Project Risk Management includes the processes of conducting risk management planning, identification, analysis, response planning, response implementation, and monitoring risk on a project (PMBOK® Guide, 2017). Ray (2017) also defined project risk management as ‘the process of identifying, analyzing, and then responding to any risk that arises over the life cycle of a project to help the project remain on track and meet its goal’. Risk management, therefore, is critical for project success as it enables the planning for the ‘what-ifs’ and ensures that proactive measures are in place for any unexpected events.

### ***Project Procurement Management:***

Project Procurement Management includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team. (PMBOK Guide – Sixth Edition, p. 459). Proper procurement planning is an essential aspect of project management and is a key success factor for any project as it ensures that the project benefits from all supplier relationships. Effective procurement planning not only reduces the probability of costly errors and delays in project implementation, but it also helps to guarantee the proper acquisition of all goods and services for the smooth and efficient running of the project. This was further expounded on by Solórzano (2015, para. 2) who posited that “good procurement management is a key success factor in projects, and it must be assigned an appropriate planning process”.

### ***Project Stakeholder Management.***

According to the PMBOK® Guide (2017), Project Stakeholder Management includes the processes required to identify the people, groups, or organizations that could impact or be impacted by the project, to analyze stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution. Without a doubt, stakeholder management is an essential knowledge area which anticipates, and evaluates the expectations of project stakeholders and adopts appropriate strategies for effective and inclusive decision-making for project success. Consequently, frequent and effective communication with project stakeholders is required.

## **2.3 Other applicable theories related to the Project Topic and Context**

### **2.3.1 Public-private Partnerships**

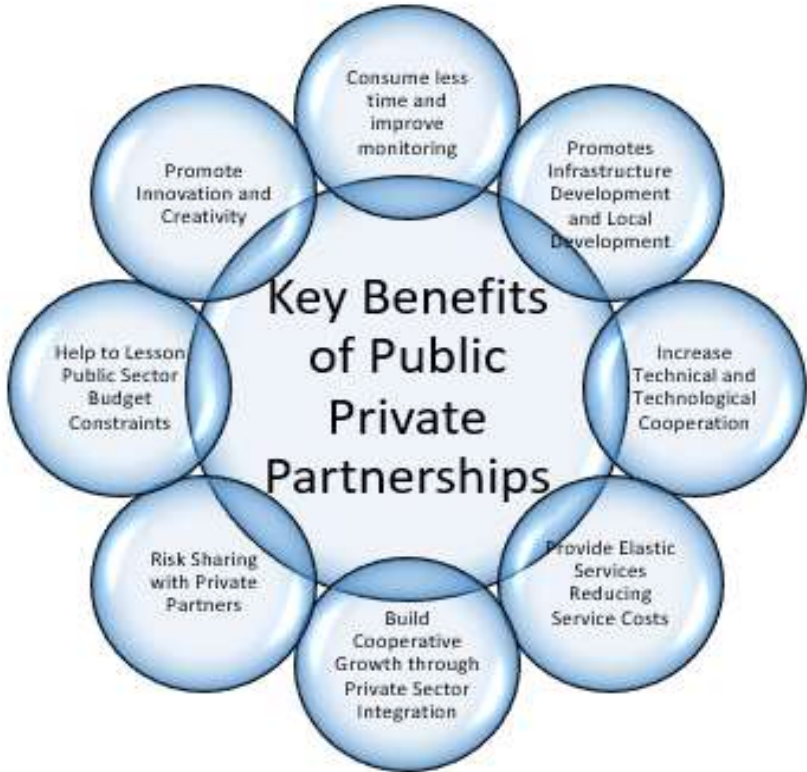
To fully grasp the concept of a Public-Private Partnership (PPP), a clear definition must be ascertained.

The UK Commission on PPP as reported by Narasimhan and Aundhe (2014, p. 2189) defines public-private partnerships (PPP) as, “a risk-sharing relationship between the public and private sectors based upon a shared aspiration to bring about a desired public policy outcome”. Correspondingly, the Canadian Council for Public-Private Partnerships (n.d.) provides the following definition for a PPP “a cooperative venture between the public and private sectors, built on the expertise of each partner that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards”. The PPP Knowledge Lab of the World Bank (n.d., para.1) defines PPPs as a 'long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility and remuneration is linked to performance'. The above definitions suggest that PPPs allow for varying degrees of risk-sharing, joint investment of resources, mutual benefits and, shared authority and responsibility for capital investments in order to

meet public needs. PPPs, then, serve as a means towards achieving economic and social development in the host country.

Through PPPs, public infrastructure development projects benefit in turn significantly from the private sector's unlimited resources: capital, expertise, technology, and so forth. In contrast, the private sector benefits from PPPs as well since they can fund, design and build, manage, and temporarily own state assets for profit maximization. Nevertheless, a PPP is not solely a panacea for the investment needs of major infrastructural projects but also serves as a procurement paradigm which if well-structured and executed, will lead to efficient public asset delivery.

Figure 9 seeks to further highlight some of the key benefits to be derived from commissioning PPPs in attempting to meet public needs:



**Figure 9:** Key Benefits of Public-Private Partnerships (Source: Shadik, 2019)

### **2.3.2 Infrastructure Development**

Infrastructure development plays a significant role in a country's economic growth. But what exactly is infrastructure, and what constitutes infrastructure development?

In the public realm, infrastructure is often understood to be public goods such as roads, bridges, hospitals, schools, and even prisons. Cheng (2020) defines infrastructure as a general term for the basic physical systems of a business, region, or nation. Notably, Beeferman and Wain (n.d., p. 15) proffer a definition of infrastructure as “facilities, structures, equipment, or similar physical assets – and the enterprises that employ them – that are vitally important, if not absolutely essential, to people having the capabilities to thrive as individuals and participate in social, economic, political, civic or communal, household or familial, and other roles in ways critical to their own well-being and that of their society, and the material and other conditions which enable them to exercise those capabilities to the fullest”. These two (2) definitions provide a deeper understanding of what infrastructure is; the definition given by Beeferman and Wain alludes to the individualism of the term which is often overlooked.

On the other hand, infrastructure development as postulated by Spacey (2018) is “the construction of basic foundational services to stimulate economic growth and quality of life improvement. Therefore, it can be deduced that when a government is able to conceptualize and adequately provide and maintain state-of-the-art infrastructure, the country will benefit from the realization of macroeconomic stability and sustainable social development.

Given the realities of climate change coupled with diminishing natural resources on the planet, a country should aim to develop infrastructure which is sustainable. The IDB Group (2018) defines sustainable infrastructure as “infrastructure projects that are planned, designed, constructed, operated, and decommissioned in a manner to ensure economic and financial, social, environmental (including climate resilience), and institutional sustainability over the entire life cycle of the project.” These four dimensions stimulate significant long-

term benefits for emergent nations while simultaneously contributing to the achievement of the country's sustainable development goals. Importantly, for a society's economy to function and thrive, the development of sustainable infrastructure is considered the vehicle that integrates vital networks and assets to deliver positive, indispensable contributions to a country and its citizenry. Thus, a country should endeavor to develop infrastructure which is sustainable.

The indispensable benefits to be derived from sustainable infrastructure include economic and financial sustainability by means of the creation of jobs and businesses, affordable access to essential services, efficiency, quality, and reliability, increased opportunities for foreign direct investment, infrastructure asset maintenance and optimal use and optimizing value for money for taxpayers and investors by incentivizing sustainability and reducing price distortions. Another critical benefit to be derived is that of social sustainability which includes the alleviation of poverty and the protection of vulnerable groups through the effective engagement of indigenous and traditional peoples in preserving cultural resources and heritage. Also, the promotion of gender inclusion and adequate community access to resources, thereby improving the overall quality of life of citizens.

As it relates to the environmental and institutional benefits, the matter of climate resilience emerges as a direct manifestation of the reduction of carbon and environmental footprints and the proactive and deliberate conservation of a country's natural ecosystems and biodiversity. All of which will improve resilience to natural disasters and optimize financial sustainability that will better position a country for growth. In addition, a sound institutional framework built on robust governance structures underpinning sustainability will reinforce greater transparency and integrity and promote collaboration, teamwork, knowledge sharing, and improving local capacities. It is integral therefore that planners and policymakers take a more structured approach to development by incorporating sustainable infrastructure into their development planning and ensuring that man-made systems work in tandem with natural ones.

### **2.3.3 National Development**

National development is all-encompassing and dynamic. According to Bawa (n.d.), it can be best defined as the all-round and balanced development of different aspects and facets of the nation viz. political, economic, social, cultural, scientific, and material. National Development is the ability of a country (or countries) to improve the social welfare of its people, for example by providing social amenities like quality education, potable water, transportation infrastructure, medical care, among other amenities (Alolor, 2014). Bluemington (2018) shared a definition from John Vaizey “national development is the total effect of all citizens, forces, and addition to the stock of physical, human resources, knowledge, and skill”.

In that regard, national development is multifaceted and plays a pivotal role in facilitating balanced and sustainable development of a country: social, human, economic, and environmental. National development, then, ensures that a country’s scarce resources are utilized in such a way that development meets the needs of the current populace as well as future generations.



## METHODOLOGICAL FRAMEWORK

This chapter describes the methodological framework employed in the execution of this FGP. Its primary aim therefore is to elaborate the information sources, methods of research, research tools, assumptions and constraints, and deliverables that need to be employed to ensure that the FGP meets its objectives. This framework will facilitate a conceptualized and informed opinion to determine the effectiveness of the two (2) Jamaican PPP projects using PMI's methodology, and to establish how these projects have impacted development in Jamaica.

### 3.1 Information Sources

In prehistoric times, rock carvings were used as information; as the world evolved, information has developed in scale and complexity - and has become an essential resource. Information is power and an essential ingredient in decision-making (Ajuwon et. al, 2011). In its broadest sense, information can be characterized as data obtained which removes uncertainty regarding a subject matter. According to the Online Merriam-Webster Dictionary, information can be defined as '*knowledge obtained from investigation, study, or instruction*'. *Information*, then, can be derived from virtually any source.

As advanced by Bates (2006), anything human beings interact with or observe can be a source of information. Information sources are the mediums by which information is recorded for use by an individual or an organization. It is the means by which a person is informed about something or knowledge is made available to someone (Ajuwon et. al, 2011). Bitso (2012) supports these definitions stating that "*the information source is a medium in which knowledge and/or information is stored*". In academic writing, the use of reliable and accurate information sources is critical to strengthening arguments and assists one to arrive at unbiased conclusions.

For the sake of research, three (3) types of sources of information have been identified: primary, secondary, and tertiary. For the purpose of this FGP, two sources (primary and secondary) will be identified and discussed in the subsequent sections.

### **3.1.1 Primary Sources**

The definition of a primary source may differ based on the genre or context in which it is being utilized. Rampolla (2004) defines primary sources as '*materials produced by people or groups directly involved in the event or topic under consideration*'. In the same vein, Birkenseer (2014, para. 1) defines a primary source as '*a document or physical object, written or created during the time under study. These sources were present during an experience or time period and offer an inside view of a particular event*'. Primary sources provide its recipient with a window into the past; that is unfiltered access to historical accounts of information. In research, primary sources stimulate greater understanding of historical events for the researcher thereby enabling the consideration of varied viewpoints during analysis.

The primary sources of information to be referenced in executing this FGP are:

- Semi-structured interviews
- Project charters
- Quarterly project status reports
- Project expenditure reports
- Proceedings of Meetings
- Project newsletters
- Press releases

### **3.1.2 Secondary Sources**

In the elaboration of a high-quality research project, previously published sources of information need to be perused and analyzed, and then the correlation made to meet the research objectives. Such a source of information is classified as secondary. A secondary source of information is one that was created by someone who did not have firsthand experience or did not participate in the events or conditions being researched (Ajuwon et al, 2011). As such, a secondary source

can be considered an analysis or discussion of primary sources, performed by specialists in the subject area; and would be considered subjective. Likewise, Nordquist (2018), suggests that secondary sources serve the purpose of furthering or strengthening an argument if the source has credibility in the field. Ajuwon et al. (2011) added that “*secondary sources describe, discuss, interpret, comment upon, analyze, evaluate, summarize, and process primary sources*”. Secondary sources, therefore, provide greater insight regarding the research topic.

The secondary sources of information to be utilized in the development of this FGP and to aid in its validation include:

- Textbooks (PMBOK® Guide, Public-Private Partnership Projects in Infrastructure, etc.)
- Case Studies
- Newspaper Articles
- Periodicals
- World Wide Web (internet searches)
- PMI Database

Chart 1 provides an overview of the FGP objectives and the sources of information, both primary and secondary, to be adduced.

**Chart 1: Information Sources as per FGP Objectives (Source: Parker, 2020)**

OBJECTIVES	INFORMATION SOURCES	
	Primary	Secondary
1. To assess if the various project management processes and activities were well-integrated and elaborated in the respective charters for both PPP projects.	<ul style="list-style-type: none"> <li>▪ Project Charters</li> <li>▪ Quarterly Project Status Reports</li> <li>▪ Project Expenditures</li> <li>▪ Proceedings of Meetings</li> <li>▪ Semi-structured Interviews</li> <li>▪ Project Newsletters</li> <li>▪ Press Releases</li> </ul>	<ul style="list-style-type: none"> <li>▪ PMBOK® Guide</li> <li>▪ PMI Database</li> <li>▪ Internet</li> <li>▪ Case Studies</li> <li>▪ Periodicals</li> </ul>
2. To identify and evaluate the Scope Management Plan for both PPP projects to determine those activities which needed to be executed to achieve the projects' objectives.	<ul style="list-style-type: none"> <li>▪ Project Charters</li> <li>▪ Quarterly Project Status Reports</li> <li>▪ Proceedings of Meetings</li> <li>▪ Semi-structured Interviews</li> <li>▪ Project Newsletters</li> </ul>	<ul style="list-style-type: none"> <li>▪ PMBOK® Guide</li> <li>▪ PMI Database</li> <li>▪ Internet</li> <li>▪ Case Studies</li> <li>▪ Periodicals</li> </ul>
3. To discover whether a Schedule Management Plan was crafted	<ul style="list-style-type: none"> <li>▪ Project Charters</li> <li>▪ Quarterly Project Status Reports</li> <li>▪ Proceedings of Meetings</li> </ul>	<ul style="list-style-type: none"> <li>▪ PMBOK® Guide</li> <li>▪ PMI Database</li> <li>▪ Internet</li> <li>▪ Case Studies</li> <li>▪ Periodicals</li> </ul>

<p>for both PPP Projects to include documenting project activities, their attributes, and relationship to enable timely project completion.</p>	<ul style="list-style-type: none"> <li>▪ Semi-structured Interviews</li> <li>▪ Project Newsletters</li> </ul>	
<p>4. To determine if the Cost Management Plan devised for both projects stipulated the policies and procedures to plan the project's budget, appropriately allocate project funding, and manage the project's cash flow.</p>	<ul style="list-style-type: none"> <li>▪ Project Charters</li> <li>▪ Quarterly Project Status Reports</li> <li>▪ Project Expenditure Reports</li> <li>▪ Proceedings of Meetings</li> <li>▪ Semi-structured Interviews</li> <li>▪ Project Newsletters</li> </ul>	<ul style="list-style-type: none"> <li>▪ PMBOK® Guide</li> <li>▪ PMI Database</li> <li>▪ Internet</li> <li>▪ Case Studies</li> <li>▪ Newspaper Articles</li> </ul>
<p>5. To verify if a Quality Management Plan was drafted defining</p>	<ul style="list-style-type: none"> <li>▪ Project Charters</li> <li>▪ Quarterly Project Status Reports</li> <li>▪ Project Expenditure Reports</li> </ul>	<ul style="list-style-type: none"> <li>▪ PMBOK® Guide</li> <li>▪ PMI Database</li> <li>▪ Internet</li> <li>▪ Case Studies</li> <li>▪ Newspaper Articles</li> </ul>

<p>the quality parameters (local and international) to be adopted in the management of both PPP projects, so as to ensure that project results met expectations for approval.</p>	<ul style="list-style-type: none"> <li>▪ Proceedings of Meetings</li> <li>▪ Semi-structured Interviews</li> <li>▪ Project Newsletters</li> </ul>	
<p>6. To investigate whether Resource Management Plans were designed for both PPP projects to identify and specify how project resources were managed to ensure those project activities were completed within time, cost,</p>	<ul style="list-style-type: none"> <li>▪ Project Charters</li> <li>▪ Quarterly Project Status Reports</li> <li>▪ Project Expenditure Reports</li> <li>▪ Proceedings of Meetings</li> <li>▪ Semi-structured Interviews</li> <li>▪ Project Newsletters</li> </ul>	<ul style="list-style-type: none"> <li>▪ PMBOK® Guide</li> <li>▪ PMI Database</li> <li>▪ Internet</li> <li>▪ Case Studies</li> <li>▪ Periodicals</li> </ul>

and scope constraints.		
7. To establish whether Communication Management Plans were created for both PPP projects dictating the communication mediums used to communicate internally and externally to ensure that all key stakeholders were kept informed regarding project status.	<ul style="list-style-type: none"> <li>▪ Project Charters</li> <li>▪ Quarterly Project Status Reports</li> <li>▪ Proceedings of Meetings</li> <li>▪ Semi-structured Interviews</li> <li>▪ Project Newsletters</li> <li>▪ Press Releases</li> </ul>	<ul style="list-style-type: none"> <li>▪ PMBOK® Guide</li> <li>▪ PMI Database</li> <li>▪ Internet</li> <li>▪ Case Studies</li> <li>▪ Periodicals</li> <li>▪ Newspaper Articles</li> </ul>
8. To ascertain if Risk Management Plans were drafted for both PPP projects and if these plans identified and evaluated	<ul style="list-style-type: none"> <li>▪ Project Charters</li> <li>▪ Quarterly Project Status Reports</li> <li>▪ Proceedings of Meetings</li> <li>▪ Semi-structured Interviews</li> <li>▪ Project Newsletters</li> <li>▪ Press Releases</li> </ul>	<ul style="list-style-type: none"> <li>▪ PMBOK® Guide</li> <li>▪ PMI Database</li> <li>▪ Internet</li> <li>▪ Case Studies</li> <li>▪ Periodicals</li> </ul>

<p>(categorized) the projects' main risks, and planned mitigation measures for the most critical ones.</p>		
<p>9. To examine the Procurement Management Plans of the two (2) PPP projects to ensure that they clearly defined the parameters under which goods and services were acquired so that relevant resources were available for the timely and cost-effective completion of the projects.</p>	<ul style="list-style-type: none"> <li>▪ Project Charters</li> <li>▪ Quarterly Project Status Reports</li> <li>▪ Project Expenditure Reports</li> <li>▪ Proceedings of Meetings</li> <li>▪ Semi-structured Interviews</li> <li>▪ Project Newsletters</li> <li>▪ Press Releases</li> </ul>	<ul style="list-style-type: none"> <li>▪ PMBOK® Guide</li> <li>▪ PMI Database</li> <li>▪ Internet</li> <li>▪ Case Studies</li> <li>▪ Periodicals</li> <li>▪ Newspaper Articles</li> </ul>
<p>10. To assess the Stakeholder</p>	<ul style="list-style-type: none"> <li>▪ Project Charters</li> <li>▪ Quarterly Project Status</li> </ul>	<ul style="list-style-type: none"> <li>▪ PMBOK® Guide</li> <li>▪ PMI Database</li> </ul>



<p>Management Plans that were designated for both PPP projects to ensure that they identified the relevant project's key stakeholders and designated the strategy to effectively engage, monitor, and manage them throughout the project lifecycle.</p>	<p>Reports</p> <ul style="list-style-type: none"> <li>▪ Proceedings of Meetings</li> <li>▪ Semi-structured Interviews</li> <li>▪ Project Newsletters</li> <li>▪ Press Releases</li> </ul>	<ul style="list-style-type: none"> <li>▪ Internet</li> <li>▪ Case Studies</li> <li>▪ Periodicals</li> <li>▪ Newspaper Articles</li> </ul>
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### 3.2 Research Methods

“Some men see things as they are and ask why? Others dream things that never were and ask why not?” (George Bernard Shaw). Simultaneously, probing the known and the unknown is what constitutes the concept of research. Australian universities define research as *“the creation of new knowledge and/or the use of existing knowledge in a new and creative way so as to generate new concepts, methodologies and understandings. This could include synthesis and analysis of previous research to the extent that it leads to new and creative outcomes”* (O’Donnell, 2012, para. 5). In the general context, and more importantly in academia, research comprises any formal collection of raw data, evidence, and facts for the advancement of knowledge. However, what was used by the

researcher to collect data, evidence, and facts? And how did the researcher collect data, evidence, and facts in completing the research? These questions relate to research methods and research methodology, two (2) nomenclatures which are often mistaken to be synonymous. However, the two terms though closely related differ considerably in scope. Thus, it is of paramount importance that their differences be understood.

Wisker (2008) defines research methods as the vehicles and processes used to gather data. Research methods are the various procedures, schemes, steps and algorithms used in research (Farooq, 2019). It can therefore be deduced that research methods are techniques and procedures that generate evidence to enable conclusive arguments to the research objectives. On the other hand, research methodology is defined by Ahmed et al (2009) as '*the manner or the approach the investigator adopts in answering his/her research question*'. Kumar (2008) provided a simplified definition for research methodology as '*a way to systematically solve the research problem*.' Given the definitions aforementioned, it can be surmised that research methodology has several facets, of which research methods is only one element.

### **3.2.1 Analytical Research Method**

Ask Media Group (2020, para. 1) defines analytical research as '*a specific type of research that involves critical thinking skills and the evaluation of facts and information relative to the research being conducted*'. Further, they purport that - within analytical research, data and other important facts that pertain to a project is compiled; after the information is collected and evaluated, the sources are used to prove a hypothesis or support an idea.

Bist (2014, p. 36) confirms that "*...in analytical research, the researcher has to use facts or information which are already available and analyze these to make a critical evaluation of the material*". Israr (2016, slide. 12) adds that "analytical research aims to understand phenomena by discovering and measuring causal relations among them".

### 3.2.2 Qualitative Research Method

Ahmad S, Wasim S, Irfan S, et al. (2019) defines qualitative research as ‘a process of naturalistic inquiry that seeks an in-depth understanding of social phenomena within their natural setting. It focuses on the "why" rather than the "what" of social phenomena and relies on the direct experiences of human beings as meaning-making agents in their everyday lives’. Qualitative research is primarily exploratory research. It is used to gain an understanding of underlying reasons, opinions, and motivations. It provides insights into the problem (DeFranzo, n.d.). Crossman (2020), in agreeing, states that qualitative research collects and works with non-numerical data and seeks to interpret meaning from these data that help understand social life through the study of targeted populations or places.

It can, therefore, be surmised that by nature, qualitative research is an in-depth investigative research method that collects and analyzes the intricacies of phenomena as it exists in context utilizing data retrieved from various sources.

Chart 2 tabulates the research methods (analytical and qualitative) employed in this FGP. It explains how the research methods were applied for each of the FGP’s specific objectives.

**Chart 2:** Research Methods utilized in the FGP (Source: Parker, 2020)

OBJECTIVES	RESEARCH METHODS	
	Analytical Research Method	Qualitative Research Method
1. To assess if the various project management processes and activities were well-integrated and elaborated in the respective charters for both PPP projects.	From the data collected regarding the project charters for the two (2) PPP projects, facts and information will be evaluated and harnessed using	Rich contextual information retrieved from the sources identified in Chart 1, Objective 1 will be used to

	<p>analytical and critical thinking skills to arrive at a definitive conclusion which fulfils the research hypothesis.</p>	<p>provide insight and from which inferences can be made which guide the evaluation of the respective project charters to determine their effectiveness through project management lens.</p>
<p>2. To identify and evaluate the Scope Management Plan for both PPP projects to determine those activities which needed to be executed to achieve the projects' objectives.</p>	<p>Analytical and critical thinking techniques will be employed to effectively evaluate the Scope Management Plans for the two (2) complex PPP projects leading to the attainment of a rich and informed conclusion as per PMI's project management methodology.</p>	<p>Non-numerical data collected from the sources of information identified in Chart 1, Objective 2 will be manipulated to enable a thorough analysis of the respective Scope Management Plans to determine their effectiveness in accordance with</p>

		PMI's project management methodology.
3. To discover whether a Schedule Management Plan was crafted for both PPP Projects to include documenting project activities, their attributes, and relationship to enable timely project completion.	Background information or literature retrieved from the sources will be evaluated using analytical and critical thinking skills to ascertain the effectiveness of elaborated Schedule Management Plans for the two (2) PPP projects as per PMI's project management framework.	In achieving this FGP's objective, the non-numerical data retrieved from the semi-structured interviews, in collaboration with other primary and secondary sources of information mentioned in Chart 1, Objective 3 will be manipulated to gain an in-depth understanding. This will enable the FGP project manager to evaluate the effectiveness of the two (2) PPP projects in

		conformity with PMI's project management context.
4. To determine if the Cost Management Plan devised for both projects stipulated the policies and procedures to plan the project's budget, appropriately allocate project funding, and manage the project's cash flow.	The analytical research method will be employed to this FGP's specific objective by employing critical thinking competences to provide insight which facilitates the thorough evaluation of the effectiveness of the Cost Management Plans of the two (2) PPP projects consistent with the project management framework conceptualized by the PMI.	The inductive approach will be utilized in this FGP to collate information from the sources identified in Chart 1, Objective 4 to gain a thorough understanding and to shed light on the two (2) respective PPP projects. From this, the data will be utilized to evaluate the effectiveness of the projects in keeping with the PMI project management tenets.
5. To verify if a Quality Management Plan was drafted defining the quality parameters	Information will be gathered from the various sources to	The qualitative research method will be applied in

<p>(local and international) to be adopted in the management of both PPP projects, so as to ensure that project results met expectations for approval.</p>	<p>capture differing opinions to gain insight on the two (2) PPP projects. Analytical and critical thinking skills will be employed to carefully evaluate the effectiveness of the Quality Management Plans of the projects by virtue of PMI's project management methodology.</p>	<p>this FGP to systematically collect information from the sources identified in Chart 1, Objective 5 to obtain a comprehensive understanding of the intricacies of the two (2) PPP projects. From this, the project manager will be able to meticulously evaluate the effectiveness of the projects in consonance with the PMI's project management doctrine.</p>
<p>6. To investigate whether Resource Management Plans were designed for both PPP projects to identify and specify how project resources were managed to ensure those</p>	<p>Data collected from the various sources of information on the two (2) PPP projects will be</p>	<p>The application of this exploratory research method entails the methodical</p>

<p>project activities were completed within time, cost, and scope constraints.</p>	<p>analyzed using critical thinking skills to attain greater insight. This will aid the FGP project to perform the evaluation process needed for the determination on the effectiveness of the Resource Management Plans in alignment with the project management dogma of the PMI.</p>	<p>collection of information from the sources mentioned in Chart 1, Objective 6 to gain awareness of the foundation of the two (2) PPP projects as it relates to their Resource Management Plans. After which, the FGP project manager will be able to carefully evaluate the effectiveness of the projects pursuant to PMI's theoretical framework.</p>
<p>7. To establish whether Communications Management Plans were created for both PPP projects dictating the communication mediums used to communicate internally and externally to ensure that all</p>	<p>Communication is a key success component of Project Management. Hence, it is imperative for the</p>	<p>Valuable information retrieved from the sources identified in Chart 1, Objective 7 will</p>



<p>key stakeholders were kept informed regarding project status.</p>	<p>FGP project manager to apply the analytical research method to diligently probe documents relating to the Communications Management Plan of the two (2) PPP projects. Through this, the project manager will then be able to ascertain the effectiveness of the Plans for the projects as per PMI's guiding standards.</p>	<p>provide an in-depth understanding of the method utilized in establishing Communications Management Plans for the two (2) PPP Projects. This resulting data will aid in establishing the effectiveness of the projects as they relate to PMI's established framework.</p>
<p>8. To ascertain if Risk Management Plans were drafted for both PPP projects and if these plans identified and evaluated (categorized) the projects' main risks, and planned mitigation measures for the most critical ones.</p>	<p>The application of the analytical research method to this FGP's specific objective will employ objective analysis of information received from the FGP's various sources. This will</p>	<p>Non-numerical data observed from the sources identified in Chart 1, Objective 8 will acquiesce the application of the qualitative research method to analyze</p>

	<p>help the project manager to formulate a premise on the effectiveness of the Risk Management Plans that were developed for the two (2) PPP projects based on PMI's theoretical schema.</p>	<p>conveyed information to give an indication of the intricacies of the Risk Management Plans that were drafted for the two (PPP) projects. From this analysis, the FGP project manager will be able to discern and gauge the effectiveness of the projects in line with PMI's methodological framework.</p>
<p>9. To examine the Procurement Management Plans of the two (2) PPP projects to ensure that they clearly defined the parameters under which goods and services were acquired so that relevant resources were available for the timely and cost-effective completion of the projects.</p>	<p>Using available facts obtained from the information sources regarding the Procurement Management Plans (of the two (2) PPP projects), the project manager will scrutinize and</p>	<p>With the application of the qualitative research method, the FGP project manager will collect and conceptualize information from the sources</p>

	<p>critically analyze the material to gain awareness. Through this, the project manager will then be able to evaluate the procurement plans' effectiveness based on PMI's project management tenets.</p>	<p>identified in Chart 1, Objective 9. This will empower the project manager to critically assess the effectiveness of the two (2) PPP projects in assent with the theoretical underpinnings of the PMI.</p>
<p>10.To assess the Stakeholder Management Plans that were designated for both PPP projects to ensure that they identified the relevant project's key stakeholders and designated the strategy to effectively engage, monitor, and manage them throughout the project lifecycle.</p>	<p>The application of the analytical research method to this FGP specific objective will involve critical thinking skills and the evaluation of facts and information received from the sources in relation to the Stakeholder Management Plans for the two (2) PPP projects. As a result, the FGP</p>	<p>The information retrieved from the sources identified in Chart 1, Objective 10 will allow for the application of the qualitative research method to analyze supporting evidence to gain adequate knowledge on the two (2) PPP projects. This will</p>

	<p>project manager will be able to diagnostically evaluate their effectiveness in keeping with PMI's project management ideologies.</p>	<p>enable the FGP project manager to thoroughly evaluate the effectiveness of the Stakeholder Management Plans that were elaborated for the two projects to determine their alignment with the conceptual framework of the PMI.</p>
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### 3.3 Tools

The Online Macmillan Dictionary defines a tool as '*something that you use to perform a job or to achieve an aim*'. From this definition, it can be inferred that a tool is any instrument used to accomplish a specific task. In research, the team at Civil Engineering Terms (2015) assert that anything which becomes a means of collecting information for your study is a research tool or a research instrument. Observation forms, interview schedules, questionnaires, and interview guides are all classified as research tools. In general, it can be construed that the terms research tools and research instruments are used interchangeably and that they encapsulate hypotheses, conjecturing methods, and articulating results within an unchanged framework.

In the project management sphere, the PMI (2017, p. 725) defines a tool as '*something tangible, such as a template or software program, used in performing an activity to produce a product or result*'. According to the PMBOK® Guide – Sixth

Edition, one hundred and thirty-two (132) individual tools and techniques have been identified and are considered essential practice for most projects. On page 686 of the PMBOK® Guide – Sixth Edition, the PMI cited six (6) tools and techniques groups, which will be utilized in the elaboration of this FGP, they are:

- *Data gathering techniques*: used for data/ information collection from diverse sources.
- *Data analysis techniques*: utilized to organize, assess, and evaluate data and information.
- *Data representation techniques*: employed in displaying graphic depictions to transmit data/ information.
- *Decision-making techniques*: availed in selecting a course of action from varied alternatives.
- *Communication skills*: deployed in the distribution of information between project stakeholders
- *Interpersonal and team skills*: adopted to effectively guide and interact with the project team and other stakeholders.

Chart 3 presents a summary of the tools utilized to collect, assess, and evaluate information for the successful completion of the FGP.

**Chart 3:** *Tools utilized in the Final Graduation Project (Source: Parker, 2020)*

OBJECTIVES	TOOLS
<p>1. To assess if the various project management processes and activities were well-integrated and elaborated in the respective charters for both PPP projects.</p>	<p>Document Analysis Expert Judgement Knowledge Management Information Management Project Management Information System (PMIS)</p>
<p>2. To identify and evaluate the Scope Management Plan for both PPP projects to determine those activities which needed to be executed to achieve the projects' objectives.</p>	<p>Interviews Document Analysis Autocratic Decision Making Observation/ Conversation Context Diagram Decomposition Expert Judgement Meetings</p>
<p>3. To discover whether a Schedule Management Plan was crafted for both PPP Projects to include documenting project activities, their attributes, and relationship to enable timely project completion.</p>	<p>Analogous Estimating Bottom-Up Estimating Decomposition Expert Judgement Project Management Information System (PMIS)</p>
<p>4. To determine if the Cost Management Plan devised for both projects stipulated the policies and procedures to plan the project's budget, appropriately allocate project funding, and manage the project's cash flow.</p>	<p>Analogous Estimating Bottom-Up Estimating Cost Aggregation Project Management Information System (PMIS)</p>

<p>5. To verify if a Quality Management Plan was drafted defining the quality parameters (local and international) to be adopted in the management of both PPP projects, to ensure that project results met expectations for approval.</p>	<p>Brainstorming Checklists Check Sheets Interviews Root Cause Analysis Multicriteria Decision Analysis</p>
<p>6. To investigate whether Resource Management Plans were designed for both PPP projects to identify and specify how project resources were managed to ensure those project activities were completed within time, cost, and scope constraints.</p>	<p>Hierarchical Charts Text-Oriented Format Multicriteria Decision Analysis Decision Making Leadership Motivation</p>
<p>7. To establish whether Communications Management Plans were created for both PPP projects dictating the communication mediums used to communicate internally and externally to ensure that all key stakeholders were kept informed regarding project status.</p>	<p>Communication Competency Feedback Active Listening Expert Judgement</p>
<p>8. To ascertain if Risk Management Plans were drafted for both PPP projects and if these plans identified and evaluated (categorized) the projects' main risks, and planned mitigation measures for the most critical ones.</p>	<p>Audits Expert Judgement Brainstorming Checklists Document Analysis Meetings</p>
<p>9. To examine the Procurement Management Plans of the two (2)</p>	<p>Expert Judgement Meetings</p>

<p>PPP projects to ensure that they clearly defined the parameters under which goods and services were acquired so that relevant resources were available for the timely and cost-effective completion of the projects.</p>	
<p>10. To assess the Stakeholder Management Plans that were designated for both PPP projects to ensure that they identified the relevant project's key stakeholders and designated the strategy to effectively engage, monitor, and manage them throughout the project lifecycle.</p>	<p>Assumptions and Constraints Analysis  Document Analysis  Expert Judgement  Meetings  Networking  Political awareness  Feedback  Active Listening  Inspection</p>

### 3.4 Assumptions and constraints

“Knowledge is an unending adventure at the end of uncertainty” (Jacob Bronowski). Similarly, there is hardly any project which commences with absolute certainty; thus, project management’s adventure lies in uncertainty. To increase the prospects of project success, uncertainties should be minimized. Assumptions and constraints are known techniques used in minimizing uncertainty. Hence, both assumptions and constraints need to be identified and documented from project initiation and monitored and controlled continuously throughout execution.

Leedy and Omrod (2015) define an assumption, as it pertains to research, as ‘*a condition that is taken for granted, without which the research project would be pointless*’. The Cambridge English Dictionary defines an assumption as ‘*something that you accept as true without question or proof*’. In the project management realm, however, an assumption is a factor in the planning process that is considered to be true, real, or certain, without proof or demonstration (PMI,



2017, pp. 699). Simply put, an assumption is a premise that a research author or project manager assumes to be true without proof.

In contrast, constraints are considered to be limitations (or weaknesses) which affect project execution (PMI, 2017, p. 701). The Cambridge English Dictionary defines a constraint as “*something that controls what you do by keeping you within particular limits*”. Further, Goodrich (n.d.) specifies that constraints are limitations placed upon the project, that the project manager and team must work within. Constraints, therefore, are limiting factors which can impact a project’s quality, delivery, and overall success.

Chart 4 aims to encapsulate the assumptions and constraints for this Final Graduation Project as per its specific objectives.

**Chart 4:** *Assumptions and Constraints of the FGP (Source: Parker, 2020)*

OBJECTIVES	ASSUMPTIONS	CONSTRAINTS
1. To assess if the various project management processes and activities were well-integrated and elaborated in the respective charters for both PPP projects.	It is assumed that project charters for both PPP projects are readily available to enable the achievement of the FGP’s first specific objective.	Limited access to the project documents and availability of interviewees will impact the achievement of this specific objective which will necessitate changes to the FGP.

<b>OBJECTIVES</b>	<b>ASSUMPTIONS</b>	<b>CONSTRAINTS</b>
<p>2. To identify and evaluate the Scope Management Plan for both PPP projects to determine those activities which needed to be executed to achieve the projects' objectives.</p>	<p>The assumption is that Scope Management Plans for both PPP projects exist and will be furnished upon request from the relevant sources to aid the evaluation process.</p>	<p>Delayed evaluation process as a result of confidentiality clauses of the project partners and non-existence of Scope Management Plans which would impact the successful delivery of the FGP.</p>
<p>3. To discover whether a Schedule Management Plan was crafted for both PPP Projects to include documenting project activities, their attributes, and relationship to enable timely project completion.</p>	<p>Firstly, it is assumed that Schedule Management Plans for both PPP projects exist. Further, the assumption can be made that the documents will be furnished in a timelier manner from the relevant sources to facilitate evaluation.</p>	<p>Delayed evaluation process due to non-existence and/ or delayed retrieval of Schedule Management Plans for the projects owing to non-disclosure clauses of the PPP project partners which may result in FGP changes.</p>
<p>4. To determine if the Cost Management Plan devised for both projects stipulated the policies and procedures to plan the project's budget, appropriately allocate project funding, and manage the project's cash flow.</p>	<p>The assumption can be made that Cost Management Plans were devised for both PPP projects and will be readily available upon request. In addition, it is assumed that the FGP budget is</p>	<p>Underestimated FGP budget will affect the quality of evaluation process, as well as, unavailability or refusal of access to the Cost Management Plans for both PPP projects for evaluation</p>

OBJECTIVES	ASSUMPTIONS	CONSTRAINTS
	sufficient to enable the evaluation process for this objective.	will compromise the final product.
5. To verify if a Quality Management Plan was drafted defining the quality parameters (local and international) to be adopted in the management of both PPP projects, so as to ensure that project results met expectations for approval.	It is assumed that the Quality Management Plans for the PPP projects will be adequately elaborated to facilitate their evaluation. This will ensure that the quality of the FGP is maintained as per UCI standards.	The limited time (five (5) months) available for FGP execution is a debilitating factor which impacts its quality. Additionally, should the Quality Management Plans for both PPP projects be inadequate, their evaluation will be affected which may ultimately affect the FGP's quality.
6. To investigate whether Resource Management Plans were designed for both PPP projects to identify and specify how project resources were managed to ensure those project activities were completed within time, cost, and scope constraints.	The assumption can be made that Resource Management Plans were designed for the PPP projects and that their existence will enable the evaluation of their effectiveness as per the FGP's general objective. It is also assumed that the estimated resources to	Inadequate resources available to support execution of FGP deliverables may impact project schedule and quality. Additionally, if Resource Management Plans were not designed for the PPP projects, there might be nothing to evaluate thereby

OBJECTIVES	ASSUMPTIONS	CONSTRAINTS
	achieve the FGP's general and specific objectives will be sufficient and available.	impacting the achievement of the FGP's general and specific objectives (scope).
7. To establish whether Communications Management Plans were created for both PPP projects dictating the communication mediums used to communicate internally and externally to ensure that all key stakeholders were kept informed regarding project status.	It can be assumed that adequately elaborated Communications Management Plans were created for both PPP projects, this will facilitate their analysis thereby allowing for the successful completion of this FGP deliverable. Further, the assumption can be made that pertinent information related to the FGP will be communicated to the direct (key) stakeholders in a clear, concise, and timely manner.	A breakdown in communication channels between the project manager and key stakeholders will severely impact the FGP's project schedule as well as its quality. Additionally, had Communications Management Plans for the PPP projects not been created, this would impact the project manager's ability to evaluate their effectiveness; thus, not being able to achieve the FGP's objectives (general and specific).
8. To ascertain if Risk Management Plans were drafted for both PPP projects and if these plans	It is assumed that risks are inevitable, thus, the FGP project manager would need to closely	Risks that are not identified from project initiation may cause a breakdown in the

<b>OBJECTIVES</b>	<b>ASSUMPTIONS</b>	<b>CONSTRAINTS</b>
<p>identified and evaluated (categorized) the projects' main risks, and planned mitigation measures for the most critical ones.</p>	<p>monitor and control all project risks to ensure project success. Further, the assumption can be made that the Risk Management Plans for the projects were drafted to aid the FGP project manager's evaluation.</p>	<p>FGP's quality and may necessitate rework or unexpected changes which will affect the project's scope. Notwithstanding, should the Risk Management Plans be unavailable for evaluation, the FGP's quality standards will also be compromised.</p>
<p>9. To examine the Procurement Management Plans of the two (2) PPP projects to ensure that they clearly defined the parameters under which goods and services were acquired so that relevant resources were available for the timely and cost-effective completion of the projects.</p>	<p>It is assumed that a Procurement Management Plan was developed for each of the PPP projects and will be readily available; this is critical for the FGP's achievement of its objectives and will ultimately lead to its success. Also, it is assumed that the budget is substantial enough to procure the necessary resources to aid implementation of the</p>	<p>Time is of the essence and thus, the five-month execution period is a limiting factor; this may affect the attainment of the FGP objectives in evaluating the effectiveness of the Procurement Management Plan for each of the PPP projects. Additionally, its scope may be affected as a result. An insufficient budget to procure the relevant resources needed for</p>

OBJECTIVES	ASSUMPTIONS	CONSTRAINTS
	FGP.	project implementation will result in poor quality resources and ultimately a poorly developed FGP - quality compromise.
<p>10.To assess the Stakeholder Management Plans that were designated for both PPP projects to ensure that they identified the relevant project’s key stakeholders and designated the strategy to effectively engage, monitor, and manage them throughout the project lifecycle.</p>	<p>It is assumed that all stakeholders will play their relevant roles, by providing required information, allowing for the timely completion of the FGP. In addition, the assumption can be made that a Stakeholder Management Plan was designated for each of the two (2) PPP projects, thereby allowing the FGP project manager to analyze their elaboration for effectiveness.</p>	<p>Subject matter experts (stakeholders) may not be able to facilitate interviews because of prior engagements or availability may change at short notice, as well as they may no longer be there. This will ultimately impact the FGP’s schedule and moreover its quality. Similarly, the unavailability of the Stakeholder Management Plans for both PPP projects will compromise the FGP’s quality and its timely completion (schedule).</p>

### 3.5 Deliverables

According to James Surowiecki “breaking tasks down into smaller sub-tasks can be very useful” (). Projects are sometimes complex; however, prioritizing and dissecting project activities into smaller and more do-able tasks will enable project success. One of these dissected project activities is termed as a ‘deliverable’. According to the PMI (2017), a deliverable is “*any unique and verifiable product result, or capability to perform a service that is required to be produced to complete a process, phase, or project*”. Projects create deliverables, which are simply the results of the project or the processes in the project (Simmons, 2020). Simply stated, a deliverable is a tangible or intangible output within the project scope. Deliverables chart the path to reach project objectives (Danda, 2019). Because, deliverables are enablers of project success or failure, projects should always have clear (clearly-defined) deliverables (Raymond, 2016).

Chart 5 designates the respective deliverables to be developed for this FGP.

**Chart 5:** FGP Deliverables (Source: Parker, 2020)

OBJECTIVES	DELIVERABLES
1. To assess if the various project management processes and activities were well-integrated and elaborated in the respective charters for both PPP projects.	Project Management Charter - Findings and Analysis Report
2. To identify and evaluate the Scope Management Plan for both PPP projects to determine those activities which needed to be executed to achieve the projects' objectives.	Scope Management Plan - Findings and Analysis Report

<p>3. To discover whether a Schedule Management Plan was crafted for both PPP Projects to include documenting project activities, their attributes, and relationship to enable timely project completion.</p>	<p>Schedule Management Plan - Findings and Analysis Report</p>
<p>4. To determine if the Cost Management Plan devised for both projects stipulated the policies and procedures to plan the project's budget, appropriately allocate project funding, and manage the project's cash flow.</p>	<p>Cost Management Plan - Findings and Analysis Report</p>
<p>5. To verify if a Quality Management Plan was drafted defining the quality parameters (local and international) to be adopted in the management of both PPP projects, so as to ensure that project results met expectations for approval.</p>	<p>Quality Management Plan - Findings and Analysis Report</p>
<p>6. To investigate whether Resource Management Plans were designed for both PPP projects to identify and specify how project resources were managed to ensure those project activities were completed within time, cost, and scope constraints.</p>	<p>Resource Management Plan - Findings and Analysis Report (Notation)</p>
<p>7. To establish whether Communications Management Plans were created for both PPP projects dictating the</p>	<p>Communications Management Plan - Findings and Analysis Report</p>



<p>communication mediums used to communicate internally and externally to ensure that all key stakeholders were kept informed regarding project status.</p>	
<p>8. To ascertain if Risk Management Plans were drafted for both PPP projects and if these plans identified and evaluated (categorized) the projects' main risks, and planned mitigation measures for the most critical ones.</p>	<p>Risk Management Plan - Findings and Analysis Report</p>
<p>9. To examine the Procurement Management Plans of the two (2) PPP projects to ensure that they clearly defined the parameters under which goods and services were acquired so that relevant resources were available for the timely and cost-effective completion of the projects.</p>	<p>Procurement Management Plan - Findings and Analysis Report</p>
<p>10. To assess the Stakeholder Management Plans that were designated for both PPP projects to ensure that they identified the relevant project's key stakeholders and designated the strategy to effectively engage, monitor, and manage them throughout the project lifecycle.</p>	<p>Stakeholder Management Plan - Findings and Analysis Report</p>

## **RESULTS**

This chapter of the final graduation project presents a comprehensive analysis and discussion of all the findings and results of this research. It elaborates and summarizes the core findings derived from the primary data collection methods, as referenced in Chapter 3, which were applied to gather pertinent information. The presented results from the data collection are based on the main objectives of the research study and will be explained and interpreted and the information presented via findings and analysis reports for each project management knowledge area.

### **4.1. Project Management Charter - Findings and Analysis Report**

#### **INTRODUCTION**

Upon request for project charters from the relevant personnel involved in the two (2) respective PPP projects, it was revealed that officially these documents were not titled as such; instead there existed “Project Initiation Documents”, and due to the complex nature of the projects, they consisted of several components. Thus, these documents provided a comprehensive overview of the projects’ purpose, initial preparation and development. Additionally, it was disclosed that both PPP projects involved privatization; thus, they involved concession agreements whereby the Government of Jamaica (GoJ) defined and granted specific privileges to two private entities to build and operate the public assets for a fixed period of time. However, the GoJ would retain ultimate ownership.

The components of the project initiation documents include:

- Project Summary
- Project Purpose
- Project Objectives - Goals and Objectives and Critical Success Factors
- Project Scope and Exclusions
- Project Organization

- Business Case
- Financial/ Budget Requirements
- Assumptions, Dependencies, and Constraints
- Stakeholders
- Risks, Assumptions, and Constraints
- Project Controls
- Reporting Framework
- PID Approval

However, in the context of the PMI framework, the projects will be evaluated using the following project charter elements<sup>1</sup>:

- Project Purpose
- Measurable Project Objectives and Related Success Criteria
- High-level Requirements
- High-level Project Description, Boundaries, and Key Deliverables
- Overall Project Risks
- High-level Milestone Schedule
- Pre-approved Financial Resources
- Key Stakeholder List
- Project Approval Requirements
- Project Exit Criteria
- Assigned Project Manager
- Name and Authority of the Sponsor

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<sup>1</sup> As elaborated in the Project Management Body of Knowledge (PMBOK) - Sixth Edition, pg. 155

## DISCUSSION

### Project Purpose

As it relates to project purpose, the need for which the two (2) PPP Projects provided a solution was well-described and documented. Based on the evaluation, the purpose of the two projects were useful in forming the basis for the management of both projects.

The project's purpose as outlined, was easily identified. The Highway 2000 Project was originally conceived to spur development in Jamaica, address the country's rapidly growing transportation needs, create employment, open new opportunities for investment activities along the corridor, and increase the country's gross domestic product (GDP) through the establishment of a reliable highway between Jamaica's major cities. The Highway was to be built to reduce population pressure and congestion within the Kingston Metropolitan Area (KMA). It was also envisaged that Highway 2000's construction would also enable the expeditious movement of goods between Jamaica's capital city - Kingston and the country's other main population centers and major tourist resorts.

The renovation and expansion of the Sangster International Airport Project was intended to increase the Airport's capacity to meet aircraft traffic and passenger load. In doing so, the airport would remain competitive to travelers to the island, who would gain maximum benefit from the elevated customer experience. Additionally, the project initiation documents suggested that, tourism being the main driver for the country's GDP, accounting for approximately 34%, this project stood to contribute significantly to the country's national development and marketing efforts of Brand Jamaica.

### Measurable Project Objectives and Related Success Criteria

As it relates to the measurable project objectives and related success criteria, the overall objectives for both PPP projects were clearly identified. The objectives were SMART, and thus could be easily verified.

In the case of the Highway 2000 Project, the main objective of the Project was to upgrade Jamaica's road infrastructure by constructing a modern four to six-lane controlled-access tolled highway of approximately 233 km in length with grade-separated interchanges and intersections of international standards. Thus, from the project charter's main objective one could easily deduce the Project's boundaries. Further, the objectives clearly articulated that the Project would be completed in phases – Phase 1A, Phase 1B, Phase 1C, Phase 2A, and Phase 2B. The primary success criterion was that - upon completion, the highway should increase accessibility to urban, suburban, and rural communities across the island, connecting Jamaica's capital – Kingston, in the southeast, with the city of Montego Bay in the northwest, and Ocho Rios on the north central coast.

On the other hand, the Sangster's International Airport Project's main objective was to improve the Airport's infrastructure by renovating and expanding the facilities through privatization. Accordingly, the GoJ would relieve itself of the financial burden of having to source the capital needed for the development and expansion of the SIA which would be completed in three phases (Phase 1A, 1B, and 2) up to 2009. Further, the project would allow for development of the Airport's full commercial potential, thereby increasing its revenue base and lowering its reliance on landing fees and passenger charges. As per the project initiation document, the successful completion of the expansion project would result in a world-class airport equipped to facilitate the landing of varied-sized aircrafts; whilst also being able to comfortably host an increased number of passengers in both the arrival and departure lounge areas.

### High-level Requirements

From the evaluation of the project initiation documents for the two (2) PPP projects, it could be concluded that the high-level requirements were progressively elaborated. Thus, one could construe that due to the high-level nature of the projects, a great deal of planning and documentation was undertaken to ensure that all stakeholders would have had a broad, bird's eye view of the work and elements which needed to be completed over the life of the project.

Careful review of the Highway 2000 Project’s project initiation document, suggested that the high-level requirements were detailed according to the project phases; see Chart 6:

**Chart 6:** *Project Phase Breakdown of the High-level Requirements of Highway 2000 Project (Source: Parker, 2020)*

PHASE 1A	PHASE 1B	PHASE 2
<ul style="list-style-type: none"> <li>• Construction of a 12–gate Airside Concourse complete with six jet bridges at Gates 1-6.</li> <li>• Expansion of the Ground Transportation Hall.</li> <li>• Installation of Closed-circuit Televisions (CCTV) and controlled security access.</li> <li>• Installation of an intercom system.</li> <li>• Installation of an internal elevator to service vertical movement needs within the existing building.</li> <li>• Expansion of the Baggage Claim Area.</li> </ul>	<ul style="list-style-type: none"> <li>• Construction of a hold room concourse to the east of the terminal</li> <li>• Construction of new aircraft parking positions with supporting taxiways.</li> <li>• Extension of the fuel hydrant.</li> <li>• Extension of the public address (PA) system and computer security system.</li> </ul>	<ul style="list-style-type: none"> <li>• Construction of the Arrivals Hall extension to the South Concourse.</li> <li>• Renovation of the Customs Halls, into a new Customs and Immigration Hall.</li> <li>• Construction of the Landside Pavilion structure.</li> <li>• Renovation of the West Concourse in the existing terminal.</li> <li>• Renovation and expansion of the check-in hall.</li> </ul>

Though these requirements could be considered broad, they provided an overview of the tasks and conditions (business and technical) that needed to be realized for the project to be deemed successful. In addition, the high-level

requirements were written in a simplified and easily digestible format – enabling easy comprehension of the expected outcomes by the Project’s stakeholders.

Whereas the high-level requirements for the renovation and expansion project for the SIA included: an air terminal building covering over 47,000 square feet - doubling its previous capacity, installment of 12 additional loading bridges and gates would increase capacity to 18 loading bridges, and a 46% increase in the apron area (area where aircrafts are parked, loaded/unloaded, refilled or boarded) representing a 20% increase in aircraft parking positions at SIA. Additionally, some high-level requirements included improvements to the customer experience at the SIA, inclusive of:

- Renovation and expansion of the Arrival and Customs Halls
- Expansion of the Baggage Claim area
- Creation of over 750 parking spaces for motor vehicles
- Construction of new ground transportation facilities
- Creation of additional retail space and a greater selection of shops (14 Food and Beverage, 9 Duty Free and 24 Specialty retail outlets)
- Addition of 100 check-in counters.

*High-level Project Description, Boundaries, and Key Deliverables*

In both project initiation documents, the high-level project description for the two PPP Projects were presented in a clear and concise format. The expected project benefits were also highlighted. Further, in defining the project scope, the project boundaries were delineated through the use of mapping, as well as diagrams and images which provided accurate and explicit project siting and aided in providing context. They also provided key information which allowed for a holistic perception. The project key deliverables were also iterated.

Regarding the Highway 2000 Project, the project description section of the project initiation document spoke to the revolutionary nature of the project as it was a first of its kind project - Jamaica’s first tolled highway. One critical component of

the project description was the inclusion of how the Project was developed using a “build-operate-transfer model” under the public-private partnership mechanism, whereby the cost of construction would be shared between the private sector entity and the GoJ. Additionally, it provided other critical information, for example - that the Project was primarily greenfield. As this was an infrastructure project it meant that the highway’s construction would mostly occur on unused lands without need for demolition works. The sub-section entitled ‘project site’ masterfully highlighted the Project’s situational boundaries utilizing imagery to reinforce the wording. In addition, the project boundaries aided in easily identifying those measurable and auditable characteristics which the Project would cover. This information would be critical for decision-making purposes regarding project work. Additionally, the fact that the project boundaries were thoroughly elaborated in the project initiation document, contributed significantly to improving project processes and ensuring that there was greater accountability.

Similarly, the project description as found in the project initiation document for the Sangster International Airport Renovation and Expansion Project detailed the elements underlying this Project, that is the construction of the new terminal and refurbishment and retrofitting of the existing terminal buildings, along with installation of several features which would enhance client experience. A valued input to the project description was that the Project was a part of the Capital Improvement Plan for the SIA. This showed that the Project was not just a standalone initiative but that it was a strategic venture of the GoJ, meant to contribute significantly to the country’s tourism product. Overall, the Project Background section of this document encompassed a general description of what was expected to be executed within the project lifetime, what the project prerequisites were, and how the expected amount of work would be produced. With regard to the boundaries of this Project, they were closely aligned to the project objectives. The fact that the project was designed in phases was an indication that the project boundaries were well thought out and thus, well-defined. As previously mentioned, the project objectives highlighted some criteria which would make up the project deliverables of the SIA Renovation and Expansion



Project, which included the hosting of larger aircrafts, increased passenger and baggage terminal capacity, greater access to commercial space for rental, improved ground transportation and additional parking facilities.

### Overall Project Risks

In respect to the overall project risks section of the initiation documents for both PPP projects, several factors were elaborated including the risk management approach, risks, assumptions, and constraints. In both instances, the approach to risk management was clearly articulated - a methodical process through which the project team was able to identify, grade, and rank the varied project risks. The identified risks were unambiguously presented. It was evident that the project team would have proper guidance on methods of controlling these risks and would be equipped to make decisions with reduced uncertainty. The documented assumptions and constraints for both projects were identified and analyzed and can be considered closely aligned to the project scope enabling completion of the projects with minimal obstruction.

Regarding the possible risks associated with the Highway 2000 Project, the project initiation document identified issues related to the following: anticipated traffic (motor vehicle), revenue, design and construction, land acquisition, utility relocation, political risk, subordinated capital and lands for development. The project initiation document for the SIA Renovation and Expansion Project shared some similar risk elements: traffic (aircraft), revenue, and design and construction. Notably, there were other risks identified namely: foreign exchange rate, variations, country legislation, project delay cost and weather conditions.

### High-level Milestone Schedule

In the High-Level Milestone Schedule sections of the project initiation documents, draft timelines were provided, reflective of the high-level milestones and estimated timing for the implementation of the two PPP Projects. The project schedules were presented using Gantt charts which were an excellent data visualization strategy - placing project activities and milestones against the backdrop of the projects' timeframes. These charts assisted in giving the two

initiatives greater perspective, which was essential for development of the comprehensive plans. Through careful analysis, the author was able to observe how each project milestone was aligned to meet the projects' goals and objectives. The elements of the scope statement were also observable.

The Gantt Chart that was created for the Highway 2000 Project illustrated that the project would be implemented in phases, with construction of the first phase (Phase 1A) of the Project beginning in 2001. The Project, which is currently in Phase 2, is still ongoing with an expected end date of 2023 - as per the Gantt chart's projection. The author believes that this phased approach was utilized due to the Project's complexity and also its novelty. Further, the phased approach would have allowed for making modifications and ensuring checks and balances on overall project quality and cost.

The SIA Renovation and Expansion Project's Gantt Chart also revealed a three-phased approach to implementation. Phase 1A was expected to be implemented from 2001-2004 and execution of Phase 1B anticipated for the period 2003-2005. The final phase (Phase 2) was from 2005 - 2009. This was similar to the phased approach used for the Highway 2000 Project. The FGP author reasoned that the primary reason for this was that this project was a brownfield project - the airport was not closed, so the building(s) being renovated would have still been occupied. Additionally, this modus operandi provided the opportunity for the project developers to gain insight into risks/challenges that may be encountered in other phases and allow them to develop mitigating measures as well.

#### *Pre-approved Financial Resources*

As both projects utilized the PPP mechanism, the project initiation documents evaluated disclosed, as would have been expected, that from the initial stage of project conceptualization, the budgets were being calculated. In both cases, it appeared that the primary intent was to establish an initial budget for the projects with expected cash flows for project delivery. This section provided a general overview of the budget and showed the breakdown of investments as per

the Concession Agreements. It was also observed that the budgets were expressed in USD - the world's most dominant currency.

At a total budgeted cost of US\$1.3 billion, the Highway 2000 Project was classified as being the largest project to ever be implemented in Jamaica, as indicated by the project initiation document. The document indicated that the Project would be financed by two parties, namely - the concessionaire and the GoJ. It was also specified that both parties were financing their share of the initial capital cost for the projects through loans at varied interest rates and repayable over a fixed time period.

The project initiation document for the Sangster International Airport Renovation and Expansion Project disclosed that the initial estimated budget was set at US\$175.5 million (JM\$10.5 billion, €165 million). Additionally, the percentage ownership (shares) in the Project was highlighted for each project sponsor. The project initiation document further indicated that the International Finance Corporation would be financing the first phase of the Project amounting to US\$80 million and that for project sustainability, the GoJ would enact the Airports (Economic Regulations) Act, which would provide for the implementation of an airport improvement fund, which stipulated that a fee be paid by all passengers departing Jamaica.

#### Key Stakeholder List

There were no subsections in the documents specifically dedicated to the stakeholders. However, in the project summary of both project initiation documents, all key stakeholders were listed, as along with the qualifications of each stakeholder and the role each would play in the projects.

Firstly, the project summary of the project initiation document for the Highway 2000 Project reiterated that this Project was a public-private-partnership. It stated further to state that the Partnership was conceptualized as a build-finance-operate and transfer (BFOT) in which the private sector partner would be mandated, through the Concession Agreement, to finance the construction and operation of the tolled highway for 35-years. Upon termination, management and

control would be relinquished to the GoJ. The Project's key stakeholders as identified in the document were: the Government of Jamaica (GoJ), the Grantor, the Concessionaire, the Contractor, and the Operator. Additionally, the document included a diagram illustrating the dynamics of the Partnership; the author presumes this was done so as to explain the interrelationships which existed within the partnerships.

In a similar vein, the project summary section of the project initiation document for the Sangster International Airport Renovation and Expansion Project indicated the project's key stakeholders were commissioned, namely:

- the Government of Jamaica (Airports Authority of Jamaica);
- Grantor (International Finance Corporation);
- Concessionaire (Vantage Airport Group);
- Contractor (Ashtrom); and
- Operator (MBJ Airports Limited).
- Project Approval Requirements

The FGP author observed that due to the legal ramifications associated with both Projects, the author observed that the Concession Agreements in the appendix of the project initiation documents explicitly stated, in great detail, what would signify success for both projects, who (entity) would deem the projects successful, and who (entity(-ies)) would formally endorse the projects. It was clearly recorded that for the requirements to obtain approval, the project objectives would need to have been met and the key stakeholders' needs satisfied.

#### *Project Exit Criteria*

Due to the nature of both projects being public-private-partnerships, the project initiation document did not go into great detail regarding the requirements which must be met before project completion. However, in both instances reference was made to the Concession Agreements which being a legal document, equally binds all parties to varying criteria which need to be met before the project

can be closed. Additionally, the Concession Agreements for the two PPP-projects stipulate the agreed-upon conditions (time-bound, quality, and costing parameters) through which each private sector organization would be able to benefit from the investment before officially delivering the asset to the GoJ - being the ultimate owner of each public asset.

#### Assigned Project Manager

Given the disposition of these projects being PPPs, the project manager's role was undertaken by the concessionaire. Thus, the project initiation document referred to a "concessionaire" and not a project manager. Nevertheless, despite the titles being different, the roles were seemingly similar. Additionally, the author observed that this role was being undertaken by an organization and not an individual; therefore, the person with the highest authority in these organizations assumed project liability. In these two project initiation documents, each organization's core team as well as their qualifications were detailed.

#### Name and Authority of the Sponsor

As it relates to the title of project sponsor, the FGP author reasoned that though these private sector organizations brought their expertise to the implementation of these two projects, the projects were not financed by them. But for the purpose of project funding, they sought the loans from development banks. Though indebted, they would have considered the greater benefit to be their ability to build their international reputation and establish sound credit history. The name and authority of the project sponsors in both project initiation documents were clearly delineated. However, it was observed that as it relates to PPP projects themselves, the sponsors presumably had somewhat limited authority.

The project initiation document for the Highway 2000 Project named Trans Jamaican Highway Limited as the entity which sponsored the project; further, it mentioned that funding was administered by Jamaican Infrastructure Operator (JIO) via maintenance and operation of the toll road. In the case of the Sangster International Airport Renovation and Expansion Project, the project initiation

document disclosed that the project sponsor was the World Bank affiliate – International Finance Corporation (IFC).

## CONCLUSION

Based on the evaluation of the Project Initiation Documents for the two PPP projects using the PMI framework as a benchmark, the author was able to deduce that:

- A project initiation document and a project charter are two critical communications project documents which formally authorize project existence, act as a source of reference, and provide direction throughout the project's lifetime. Nevertheless, it was ascertained that though they include very similar information, the project initiation document generally contains more detailed information than a project charter.
- With PPP projects undertaking major infrastructure development in a country, it is understandable why the two projects selected for evaluation utilized project initiation documents instead of a project charter, as they would require very particularized information and specifications. Additionally, the entities which assumed the project management role would have had the resources needed to elaborate the requisite project deliverables, processes and governance framework.
- A phased approach to construction was chosen as the project implementation strategy for the two Jamaican PPP projects under evaluation, for the following reasons:
  1. It provides assurance of the availability of a solid foundation of project-level data;
  2. It enables lessons learned in early project phases to be integrated in the future phases; and
  3. It aids in overcoming resistance to change.

- Two aspects absent from the body of the project initiation document for the two PPP projects were status reporting and change control. However, they were appropriately embedded within the projects' concession agreements, which would ensure that legally the responsible party would be mandated to provide this information as specified.

## **4.2. Scope Management Plan - Findings and Analysis Report**

### INTRODUCTION

The two semi-structured interviews conducted with the Heads of Agencies, it was disclosed that personnel managing the two PPP projects produced a Scope Book rather than a Scope Management Plan. From the explanation given, the FGP author was able to infer that whereas the Scope Management Plan captures and defines the work that needs to be done to prevent scope creep, a Scope Book refers to a critical project document which defined the general requirements of a project, inclusive of conceptual design requirements and specifications, and is mostly used in major infrastructural development projects. The document is generally used in major infrastructural-type projects and is drafted in a similar fashion to a manual. In these instances, the Scope Books were driven by master plans developed by the Government of Jamaica.

Through review of the scope book for each of the two PPP projects, the FGP author was able to discover that the main components of a Scope Book include:

- Project Description
- Key Personnel Chart
- Division of Responsibility
- Project Implementation Plan Requirements
- Project Performance Tests

- Conceptual Design Basis (Structural, Architectural, Mechanical, Electrical, Controls)
- Operation and Maintenance Requirements
- Drawing Specifications
- Additional Technical Specifications
- Applicable Standards
- Training Requirements
- Approved Suppliers List
- Lessons Learned

During the semi-structured interviews, the interviewees both noted that the Scope Book was not anticipated to be an exhaustive listing of all work elements which are necessary for project completion. They added that those work elements that were not elaborated in the Scope Book were generally endorsed by the relevant parties with documented authority during the design review process. It should be noted that it was also documented in the Scope Book that all changes inclusive of any new inclusions would need to be done according to the change control procedures.

However, as Specific Objective 2 of this FGP requires the author to conduct an evaluation of the Scope Management Plans for both PPP projects, the analysis was conducted as per the undermentioned scope management plan components:

- Requirements
- Stakeholders
- Scope Statement
- Work Breakdown Structure (WBS)
- WBS Dictionary
- Roles and Responsibilities
- Deliverables



- Sponsor Acceptance
- Scope Control

## DISCUSSION

### Requirements

The requirements for both PPP projects were clearly defined and documented in their respective Scope Books, meticulously highlighting those activities which needed to be executed to achieve the projects' objectives. Further, the semi-structured interviews revealed that a series of stakeholder forums were convened to ensure that all angles were covered, that is all project requirements were duly identified, prioritized and established. Additionally, it was established that these forums aided in eliciting the specific requirements which the two PPP projects needed to deliver to achieve the final outputs - a four-to-six-laned toll highway and a renovated and expanded airport respectively. The FGP author was informed that this detailed process of identifying, prioritizing and documenting was critical to ensuring that the requirements could be measured as soon as project implementation began.

The FGP author observed that the Scope Books examined presented Requirements Management Plans (RMP). This seemed to be a standard addition to the section of the Scope Books entitled "Project Implementation Plan Requirements". It is likely that this aided in the success of the two PPP projects as the RMP ensures that all project requirements are properly captured, analyzed, managed, and addressed within the comprehensive project plan. Another vital document which the FGP author distinguished in the Scope Book for the two PPP projects were well-developed requirements traceability matrices which would have aided the validation process - verifying that the projects' scope, requirements, and deliverables remained "as is".

### Stakeholders

According to the interviewees, the key stakeholders for both PPP projects were identified using a comprehensive approach. They added that the stakeholder

forums sought to ensure that the stakeholder registers created for the projects would capture all critical actors (individuals and organizations) who would play an active role or through which their varied interests may be positively or negatively impacted as a result of project implementation or successful project completion. This would explain the reason for them listing the key stakeholders within the Scope Books according to their respective industry and/or role in which they would serve in the respective project. The FGP author is cognizant also that this pre-project activity of identifying all key stakeholders also played a significant role in the detailed requirements gathering process for the PPP projects.

The interviewees also highlighted the fact that Jamaica was a highly political state; thus, it was imperative that the voices of all key project stakeholders be captured in this project phase. This they claimed was critical as it would aid decision-making throughout the project life cycles, making it less problematic. Coupled with ensuring there would be no hindrances during implementation, this extensive information would ensure project continuity and sustainability regardless of the ruling political party. The FGP author believes that this identification and selection process would have contributed significantly to both projects' success; even though, the presence of varied perceptions could have also made it more complicated to arrive at acceptable solutions for all the involved project partners given the limited contractual space.

Further, ensuring that all project stakeholders were aware of and/or contributed to the definition of the projects' scopes, key milestones, and when they would be expected to review any deliverables prior to final acceptance would also have minimized any interference with project success.

### Scope Statement

With both PPP projects being major infrastructural developments, the scope statements as presented in the respective Scope Books were meticulously presented providing very detailed project descriptions inclusive of: the projects' goals and objectives, deliverables, constraints, expected outcomes, assumptions and acceptance criteria. Additionally, it was observed that the scope statements

included those activities which should not be performed; thus, excluding any implied but necessary work which fell outside of the project's scope.

It was evident that a significant amount of time and effort was put into the formulation of the definition of the scope statements for the two PPP projects as they were all-encompassing and captured intricate details. These comprehensive scope statements were also embedded in the two concession agreements and the outline designs. The FGP author believes that this enabled the Government of Jamaica to accurately evaluate and measure the projects' success.

#### Work Breakdown Structure (WBS)

In the annexes of the Scope Books, the WBS for the PPP projects were presented. Given that PPP projects are often complex, the seemingly complicated project deliverables for the two respective projects were hierarchically decomposed into more manageable tasks to be executed by the project partners. The interviewees confirmed that these impeccably designed work breakdown structures helped to shape the varied project partners' work approach efficiency from the projects early planning phase. The FGP author is of the view that in addition to the developed work breakdown structures for the projects seemed to have forged a common understanding amongst the partners regarding the total scope of the projects.

One interesting observation of the FGP author was that whereas the WBS for the Highway 2000 Project was well-designed with functional decomposition showing high alignment with the product breakdown structure (PBS). The WBS for the SIA Renovation and Expansion Project, in contrast, was driven by resource breakdown rules and was in high alignment with the organizational breakdown structure (OBS). In light of these observations, the FGP author surmises that with the creation of these two presumably unconventional yet efficient WBS, performance of the PPP projects was possibly enhanced.

### WBS Dictionary

Alongside the work breakdown structures created for the projects, the FGP author observed that WBS dictionaries were created also. The entries provided supporting detailed descriptions of each work element (package) from the WBS as well as the deliverables, budget and resources needed for that work element, and which ultimately were necessary for project completion. The interviews revealed that in both instances, the concessionaires utilized the services of several subject matter experts in the creation of the WBS dictionaries; this could have explained the level of detail included. The FGP author perceived that it was the inclusion of clearly defined WBS dictionaries which enabled the projects to develop complete baselines, and thus the partners were better able to monitor and evaluate the scope performance of the two PPP projects. Further, this perhaps contributed to the project partners of the two PPP projects being able to carefully plan and execute 100% of the scope outlined, as confirmed in the two semi-structured interviews conducted.

### Roles and Responsibilities

In the section of the Scope Books entitled “Division of Responsibility”, the roles and responsibilities of each project partner involved in managing the scope of the project was easily identifiable and explicitly defined. Through perusal of this section, the FGP author was able to conclude that the lead project partners’ (concessionaire) roles and responsibilities were well-structured and distinguishable. The role of the partner accountable for overall scope management, and the partner with responsibility for acceptance of project deliverables were both carefully outlined.

The interviews highlighted that one critical purpose of this section being included in the Scope Books was that for the projects to achieve success, each project partner needed to be wholly cognizant of their responsibilities from the project outset in accordance with the defined scope. This would have ensured that all work performed on the projects would have been within the established scope throughout the entire project lifecycle. Additionally, having the roles and

responsibilities clearly established and understood could have been determined as the reason the interviewees concluded that for the two projects, the scope was well-monitored; thus, driving productivity levels.

### Deliverables

With both projects being public-private partnership initiatives, the interviewees maintained that once a decision was taken by the Government of Jamaica to develop a PPP project, the Scope Books as well as the concession agreements would establish what the expected outcomes and the deliverables are under that agreement. In that regard, the FGP author observed that the two PPP projects' deliverables comprised both physical and non-physical elements. It is of the FGP author's opinion that the deliverables were conspicuous and verifiable against the scope and would have led to minimal confusion amongst the project partners regarding the final outcome of each PPP project. Notably, the Scope Books clearly depicted both project and product deliverables.

### Sponsor Acceptance

From the review of the section of the Scope Books for the two PPP projects, entitled "PID Approval" established the process for formal acceptance of all the completed project deliverables. There was an acceptance statement verifying that the respective PPP project had met all the acceptance criteria as defined in the requirements document, project scope statement, and concession agreement. There were several key project partners identified who had to affix their signatures to the Scope Book for official project scope sign-off, should the project partners agree and accept this statement.

Nevertheless, the FGP author noticed that there was also allowance made for an auditor in the acceptance process. In addition, the semi-structured interviews confirmed that an external project audit had to be conducted for verification purposes, to ensure that all agreed-upon deliverables met performance and product requirements, especially regarding quality and functionality. The interviewees added that this was a part of the closeout process as per the concession agreements. They added that it also included the hosting of a post-

project review meeting with handing over ceremony, robust lessons learned documentation, release of all contracted project personnel, closure of all procurements, and archival of all pertinent project documents at the relevant authorities' repository.

## CONCLUSION

In accordance with the analysis performed of the Scope Books for the two PPP projects using the PMI's theoretical framework as the standard to conduct the evaluation, the FGP author inferred the following:

- There was robust project scoping done for the two PPP projects, including the Highway 2000 project which was a first-of-its-kind in Jamaica. Notably, these two PPP projects drafted scope books instead of creating scope management plans. The Scope Book contained more components and thus was significantly more detailed. This was perhaps the reason this document type was chosen as PPP projects are generally overly complex and require high degrees of precision.
- Scoping which occurs in the project planning phase is fundamental to the realization of success for Public-Private Partnership (PPP) projects. It was evident that the key project partners for both PPP projects made every effort to ensure that there was a clear distinction between project and product scope in the Scope Books and that they were well-defined; this could have contributed to the projects' attainment of success. Most importantly, this robust scoping would have helped in the elimination and reduction of the probability of scope creep on the projects.
- With PPP projects having the tendency to focus on major infrastructural development in a country, it is imperative that several pre-project meetings be held with all project partners/stakeholders to ensure that all requirements are adequately captured, documented, and understood. It was evident that this was done in the two projects under study as several pre-project forums were held whereby individuals and organizations impacted by the project were able to effectively dialogue. This provided the foundation for drafting a

project scope which satisfyingly resonated with all, and thus would lead to the realization of project success.

- Similar to that which is required in the development of the Scope Management Plan, the Scope Books of the two PPP projects embraced the design of work breakdown structure (WBS). Interestingly, though the documents differed somewhat in context, the WBS was an integral component of both in the project planning phase. The careful and articulated decomposition of project activities via the WBS (with accompanying WBS dictionaries) would have also facilitated effective project scheduling and allowed for efficient process management for both PPP projects. Additionally, as above-mentioned, the project partners for the two PPP projects aligned the work breakdown structures with the PBS and the OBS respectively. These were unique additions to the WBS and perhaps aided in project performance and conclusively project success.
- As was also mentioned during the semi-structured interview process for both PPP projects, traffic forecasting was at the very foundation and root of all project development planning inclusive of defining the project scope. This process would have facilitated the preparation of the documentation needed for the development of various Request for Proposals (RFP). Thus, properly defined and articulated scope documentation was paramount to the project partners being able to identify and undertake the work that needed to be done by the private partner (concessionaire) in order to successfully complete the projects.

### **4.3. Schedule and Cost Management Plan - Findings and Analysis Report**

#### **INTRODUCTION**

The Heads of Agencies in our semi-structured interviews articulated that the Government of Jamaica, in collaboration with the private partners utilized a lifecycle and cost management strategy, instead of the schedule management/cost

management approach, in managing the schedules and budgets of the two PPP projects. Consequently, what was produced for the projects were Lifecycle and Cost Management Plans versus Schedule Management and Cost Management Plans. According to the interviewees, due to the more complex structures of PPP infrastructure projects, their long-term contractual periods and the partnership relationship existing between the GoJ and the private investor, Lifecycle and Cost Management Plans were deemed more appropriate and preferable. From the FGP author's observation, the components of these included:

- Project Description and Background
- Lifecycle Management Approach
- Cost Management Approach
- Project High-level Activities
- Roles and Responsibilities
- Lifecycle and Cost Management Tools
- Progress Reporting
- Lifecycle and Cost Changes, Thresholds and Control
- Approval

Nevertheless, Specific Objective 3 of this FGP requires the author to conduct an analysis to determine whether Schedule Management Plans were crafted for both PPP Projects - documenting project activities and their attributes and relationship to enable timely project completion. In addition, Specific Objective 4, mandates that the FGP author determine if the Cost Management Plans devised for both projects stipulated the policies and procedures to plan the project's budget, appropriately allocated project funding, and managed the project's cash flow. Thus, the evaluation will be conducted in accordance with the below schedule management and cost management plan components:



### **Schedule Management Plan**

Schedule Management Approach  
Roles and Responsibilities  
Schedule Management Tools  
Reporting Format  
Schedule Variance Analysis  
Schedule Monitoring and Control  
Schedule Change Review and Approval

### **Cost Management Plan**

Cost Management Approach  
Roles and Responsibilities  
Cost Management Tools  
Reporting Format  
Cost Variance Analysis  
Budget and Cost Control Strategy  
Change Review and Approval

## DISCUSSION

### **Schedule and Cost Management Approach**

As previously mentioned, as this was a PPP project, there was a lifecycle management approach rather than a schedule management approach. In that regard, it looks at the process used to manage the entire PPP projects' lifecycle. According to the interviewees, the GoJ chose this approach as it was believed that it would enable them to better supervise, delegate, collaborate, negotiate with, and guide the private investors to deliver the best value for money during the projects' whole lifecycle. Nevertheless, there existed some similarities to the schedule management approach. The lifecycles of the two PPP projects were clearly depicted in the Gantt charts which were created using MS Project beginning with those deliverables identified in the projects' work breakdown structures (WBS). The FGP author also discovered that activity definition was used for the identification of specific work packages which needed to be performed for completion of each deliverable. Further, it was observed that activity sequencing was performed for each phase of the projects' lifecycles and was used to establish the order of work packages and assign relationships between project activities. The semi-structured interviews further revealed that the Program Evaluation Review Technique (PERT) was used for activity duration estimation for each project phase and was iterative in nature. Through use of this technique, the lifecycle management plans provided the project partners with approximate calculations regarding the number of work periods which were required for completion of the activities detailed in the work

packages. In addition, it was disclosed that a combination of expert judgement, bottom-up estimating, coupled with Microsoft Project was used to match the most suitable resource to specific work packages. This ensured the precise allocation of project resources and estimation of project parameters for optimal performance. The interviewees added that to drive the project's trajectory, specific milestones were established for both projects acting as checkpoints throughout the lifecycles, and ensuring the projects remain on track. Lastly, the interviewees explained that a preliminary lifecycle schedule had been developed by the concessionaires and shared with the GoJ for review. Once all the project partners agreed to the proposed work package assignments, life cycle durations, and schedule of activities, the approved lifecycle schedule was then baselined. The interviewees also advised that the projects' original schedules were determined based on the scope of the project and were included in the original concession agreements.

With regard to cost management, the two interviewees from the respective agencies indicated that both projects had been conceptualized under the GoJ's Capital Programme Works. However, they noted that once the projects were crafted and scoped, it became evident that the forecasted government revenues, as they were set then, would not have been sufficient to finance these projects. The interviewees further indicated that the respective budgets had been developed through financial modelling combined with two estimation methods: analogous and parametric. The GoJ then sought financing for the projects via concession agreements with two private investors. The investors acquired project financing through various mediums: loan financing from lending agencies, equity funding from the concessionaires, and subordinated loans from the two state agencies respectively. Thus, project costs for the two PPP projects were managed wholly by the concessionaires and was primarily done as per the Work Breakdown Structures (WBS) created for the projects. It is the view of the FGP author that the investors were fully vested as a result of their acquiring project financing in the form of loans. As they were vested - there was minimal risk of them running into cash flow issues. Furthermore, as cost management was of significant importance to the government, the GoJ also played an oversight role in the cost management

process. The FGP author observed that the Earned Value Management (EVM) approach was used to measure and manage the projects' financial performance and that control accounts (CA) were created to track costs. The FGP author concluded that as the projects were large and complex, the use of control accounts enabled the project partners to more closely monitor the integration of scope, cost, and schedule than the earned value for performance measurement.

The interviewees further indicated that variance (cost and schedule) baselines were established for both PPP projects and this aided in project progress reporting. This was confirmed and elaborated in the lifecycle management plan, where it was noted that once there were cost variances of +/- 0.2 in the cost and lifecycle performance indexes, the cost status would change to an alert stage. Should this occur, those values would be changed to red in the project progress reports and corrective action would be required.

#### *Roles and Responsibilities*

Through perusal of the Lifecycle and Cost Management Plans for the two PPP projects, the FGP author observed that as in the case of the Schedule Management Plan there was a section dedicated to the varied roles and responsibilities related to lifecycle and cost management. There was clear allocation of responsibility for lifecycle development and management, as well as for cost management.

What was evident was that the concessionaires for the two PPP projects, playing the role of 'project manager' had ultimate responsibility for managing the project, inclusive of the lifecycles and budget. However, as the projects had several partners, it was imperative that all project partners played a role, and that this was adequately elaborated and documented. This inclusive approach facilitated and maximized input from the varied project partners utilizing their areas of expertise to guarantee that all possible considerations are included for the schedule and budget creation and management.

Further, an interesting addition to the Roles and Responsibilities section of the Lifecycle and Cost Management Plans for the two PPP projects, was that they

depicted paths of escalation and communication within the relevant projects' organogram. This would have allowed for the identification and definition of project boundaries and decision-making channels in order to arrive at solutions expeditiously and with clarity within the consortium (project partners).

#### Tools - Schedule Management and Cost Management

The section of the subsidiary plan titled, 'Lifecycle and Cost Management Tools' clearly described the tools and techniques which were necessary for developing, monitoring and controlling the schedule and the project budget of the two PPP projects throughout their lifecycles. Some of the tools and techniques that were documented to manage the project schedules throughout their lifecycles included: Gantt Charts/ Project Management Information Systems, Critical Path Method, PERT, and Project Meetings (quarterly and as needed). The tools and techniques that were mentioned in the document regarding cost management were: Expert Judgement, Earned Value Analysis, Financial Modelling, Analogous and Parametric Estimating, and Project Meetings (quarterly and as needed).

The FGP author is convinced that as a result of the very detailed process established to create and manage the projects' schedules and budgets, the project partners would have been able to develop a full understanding of the change impacts to the project schedules and budgets.

#### Reporting Format

The section of the subsidiary plan entitled 'Progress Reporting' detailed the process needed for reporting the advancement of the projects. The document also highlighted the required frequency of these reports as well as the components of the reports which should include information on the progress of construction works, notice of any expected delays, the process for managing any foreseen delays, and other relevant issues during the construction (build) phase of the public assets.

Generally, reporting and accounting for PPPs is country-specific. For expenditure reporting for these projects, it was documented that the concessionaires would follow accounting principles as prescribed by the International Financial Reporting Standards (IFRS). Adopting international

standards would endorse strong project governance, maintenance of high-quality standards, and sound regulatory frameworks which would be key to the success of the PPPs. The interviewees indicated that these public assets were not recognized on the GoJ's balance sheets; instead, the PPPs were treated as off-balance sheets transactions. From this information, the FGP author deduced that by keeping the public assets off-balance sheets, there would then be a deferred effect which would lessen the fiscal pressure on the GoJ.

The FGP author also believes that consistent reporting is pertinent for adequate assessment of the fiscal implications of PPPs, as well as for transparency purposes. In addition, another observation in the documents was that should risks be identified, the risks would have been analyzed to determine how they could impact the project.

#### *Schedule and Cost (Monitoring) and Control Strategy*

While there was no section of the document dedicated to establishing a monitoring and control strategy, this was more elaborately dictated in the concession agreements. There was, however, brief mention made of how the schedule and budget would be monitored and controlled, throughout their respective project lifecycles. According to the document, the project contractors were mandated to input activity and progress updates, with actual start, actual finish, and completion percentages, into the relevant PMIS database on a bi-monthly basis. The interviewees affirmed that these updates were presented for approval in high-level project update meetings held monthly with the GoJ. They also confirmed that all changes were approved in accordance with the change control policies of the projects. During the build, own and operate phases, the ultimate responsibility of approval rests with the concessionaire, who would also be responsible to communicate approved changes efficiently and in a timely manner to each invested party.

This information, as it relates to informing of any schedule or budget updates, was also in accordance with the projects' communications strategies.

### Schedule and Cost Variance Analysis

Market dynamics are critical elements which can influence the construction cost and operational performance in PPP projects. As it relates to the schedule and budget performance of the two PPP projects being evaluated, it was gathered, through the semi-structured interviews, that the Earned Value Management (EVM) approach was the tool used to measure the performance of both projects. Schedule Variance (SV), Cost Variance (CV), Schedule Performance Index (SPI) and Cost Performance Index (CPI) were the four Earned Value metrics used to analyze the health of the projects and to determine deviations. Whilst the interviewees were unable to confirm the specific thresholds for both projects, they confirmed that the thresholds used were well within the normal thresholds used in construction projects.

It was also revealed that the two concessionaires convened monthly reporting meetings, where a color-coded variance threshold report was discussed. These reports provided a visual indication of areas for concentration in managing the projects. The interviewees indicated that the thresholds used in the report were color-coded as green, yellow or red. Green variances were characterized as small and would not warrant any actions. Yellow variances, they reported, were considered a warning that the variance could trend into the red threshold range in future reporting periods. These variances were analyzed to determine if corrective actions were required. Red variances, on the other hand, were considered significant and therefore, required the elaboration of a variance analysis report.

### Change Review and Approval - Schedule and Cost

A review of the 'Approval' section of the Lifecycle and Cost Management Plans revealed that the change review and approval processes were guided by the change control policies of the PPP projects. It was stated in both Lifecycle and Cost Management Plans that all proposed actions would require a project change request and must be duly approved by the concessionaires/GoJ before they could fall within the scope of the projects.

Furthermore, the interviewees confirmed that the concessionaires did craft, within the governing document, a suitable response process presenting options for corrective action. They noted that the options would then be shared with the GoJ for approval and appropriate action taken to bring the projects back on budget/schedule. The interviews also highlighted some of the recommended actions that were documented as proposals to increase the budget for the project, reduce scope or quality, or take alternative corrective actions.

## CONCLUSION

Pursuant to the thorough dissection of the Lifecycle and Cost Management Plans for the two PPP projects, and using the PMI's theoretical schema as the criterion to complete the evaluation, it was concluded that:

- The approach that was taken by the GoJ/concessionaires to create a lifecycle and cost management plan was well-thought out, as PPP projects are generally long-term, spanning 30 - 35 years, and executed in cycles.
- Whilst management of the projects' schedule and budget through their lifecycle is the responsibility of the private partner (concessionaires), it was important that the Government (GoJ) be kept informed and be involved with key decisions made, as the completion date will determine the measures needed for the scheduled transfer of the public asset. In addition, as the projects involved privatization of the assets whereby the investors would be able to recover costs from the build phase plus profits, management of the schedule and budget would also be critical for the official handing-over date to the government.
- The GoJ, being represented by the two agencies, played an important oversight role in ensuring that the projects remained on schedule and within budget. Poor project management would have created political and reputational risks for the GoJ.
- Effectively managing the projects' schedule and budget throughout the lifecycle of the projects was integral to commissioning and constructing the two public assets. Failure to do so could negatively impact complete project

delivery and to a greater extent budgetary planning. Thus, it should be a requirement for the private investors to liaise with the government regularly to report on project progress against the construction schedule - as was the case with these two projects.

#### **4.4 Quality Management Plan – Findings and Analysis Report**

##### **INTRODUCTION**

It was revealed, in the semi-structured interviews, that the private investors in consultation from the Government of Jamaica crafted a Quality Management Strategy, rather than a quality management plan, to ensure quality techniques and standards were captured and maintained throughout the two PPP projects' lifecycles. The Heads of Agencies (interviewees) stated that as the projects were design-build projects, a thorough and well-structured approach to the delivery of quality was important to their success; thus, Quality Management Strategies were drafted. The FGP author scrutinized the two Quality Management Strategy documents and gathered that their components included:

- Quality Management Procedure
- Roles and Responsibilities
- Tools and Techniques
- Requirements
- Reporting
- Quality Management Activities - Control, Assurance and Continuous Improvement

The interviewees added that given the nature of the projects (BFOT), the public agencies had less control over the day-to-day details of the process, but they did play a governance role in relation to assuring quality in the projects.

Specific Objective 5 of this FGP stipulates that an analysis be conducted to verify if a Quality Management Plan was drafted defining the quality parameters (local and international) to be adopted in the management of both PPP projects, so as to ensure that project results meet expectations for approval. Accordingly, the



FGP author conducted the assessment consistent with the below quality management plan components:

- Quality Management Approach
- Roles and Responsibilities
- Quality Management - Tools and Techniques
- Quality Requirements/ Standards
- Quality Assurance
- Quality Control
- Approvals

## DISCUSSION

### Quality Management Approach

From observation, the FGP author was able to determine that the section of the Quality Management Strategies of the two PPP projects titled “Quality Management Procedure” thoroughly described the integrated approach the private partners and team would use for managing quality throughout the particular projects’ life cycles. The two interviewees emphasized that from the inception there was agreement amongst all key stakeholders that adequate quality management, specifically in technical design, construction, product and process development, and documentation, was a critical aspect for project success. It would therefore it would have to be meticulously planned to ensure that the projects’ objectives and deliverables were met in compliance with formally documented standards of acceptable quality. The FGP author agrees that as such planning would prevent unnecessary rework, resource wastage, cost, and time. Further, the interviewees stated that the project investors already had in place a standardized approach to quality management; however, this approach had to be contextually redefined and conveyed to the respective project stakeholders. Once documented, this redefined approach became the governing structure instituted to define quality standards, measure and assess quality, and continuously improve quality.

Through careful examination of the document, the FGP author also ascertained that for both projects’ quality was considered from both product and

process perspectives. Thus, product specific metrics had to be established to measure quality throughout the project's life cycle.

Another interesting finding was that on the project teams was a Quality Management Specialist who was responsible for providing guidance to the project team in defining these metrics, carrying out the measurements, and thoroughly analyzing results. The interviewees confirmed that these product and process measurements were used as a criterion in ascertaining project success, and it was stipulated that they had to be reviewed by both the concessionaire and the GoJ. Some of the metrics used include:

- Schedule
- Project Resources
- Cost
- Process performance
  - Manufacturing line utilization
  - Material wastage
- Product performance
  - Attenuation
  - Tensile strength
- Stakeholder Satisfaction (as a result of field trials)

They added that any improvements related to quality could be identified by any key project partner. All recommendations regarding implementation of the suggested improvement and how the improvement will impact the product or processes, would need to be carefully reviewed via use of a cost benefit analysis. Should the improvement be implemented, the concessionaires were required to update all project documentation to include the improvement, whilst the quality management specialist would update the organizational documentation that the improvement would affect.

### Roles and Responsibilities

The “Roles and Responsibilities” section of the Quality Management Strategies for the two PPP projects detailed the varied roles and responsibilities as they relate to quality management. The semi-structured interviews revealed that the entire project consortium played a role in the management of quality for the two PPP projects. The documents clearly identified each project partner and their associated responsibilities with regard to quality assurance and control process of the final results upon completion of both projects. The FGP author believes that all project partners would have had to be focused on the achievement of a shared goal, through the consistent use of the projects’ governing documents and guidelines to have realized success.

The interviewees mentioned the existence of project-specific quality management organizational charts created for the related projects - these they said were a subset of the overall project organograms. Regarding the above-mentioned finding, the quality management specialist played a critical role, working alongside the concessionaires to build quality standards into the respective project areas and tasks. It was also documented that this individual would also be responsible for monitoring all activities as per the established quality standards and maintaining quality control and quality assurance logs. Some other key roles and responsibilities related to quality management outlined in the documents, apart from the projects’ key stakeholders were: Infrastructure Team Leads, Contractors, Design Engineers, and Process Engineers. The FGP author deems these roles and their associated responsibilities as integral to ensuring that quality is embedded into all project activities and processes, thus enabling the two PPP projects to realize success.

### Quality Management - Tools and Techniques

The “Tools and Techniques” section of the Quality Management Strategy for the two PPP projects highlighted the primary tool which was employed throughout the projects’ life cycles to ensure that quality planning, quality control, and quality assurance were appropriately conducted. This was verified in the semi-structured

interviews. The tool that both PPP projects used extensively for quality management was Quality Management Information Systems (QMIS) that were designed specifically for use in the respective areas.

The documents made no mention of any other tools, and the interviews did not reveal that any other tools and/or techniques were used. The FGP author considers the use of only one quality management tool as being inadequate for such complex and large projects. There are several other tools and techniques which could have aided in the further elaboration of the quality management strategies. Some of these commonly used tools and techniques in major infrastructure projects include:

- Plan–Do–Check–Act Cycle
- Fishbone Diagram
- Pareto Chart
- Scatter Diagram
- Decision Matrix
- Flowchart
- Stratification
- Control Chart

The FGP author is aware of other quality management tools and techniques which may have been used in the execution of the PPP projects. However, due to insufficient details provided by the interviewees, this could not be verified.

#### Quality Requirements/ Standards

From the section of the Quality Management Strategies labelled 'Requirements', the FGP author established that the two PPP projects had clearly defined guidelines (requirements and standards) which were also elaborated in their respective Scope Books. In both instances, the FGP author observed that these sections of the Quality Management Strategies distinctly described how the two project teams identified and documented the quality requirements and standards. Further, in both documents, there was a clear explanation of how the two PPP projects would demonstrate compliance with those identified international

quality (and safety) standards. The semi-structured interviews confirmed that the quality requirements and standards included both the products and processes.

As it relates to standards, the interviewees disclosed that the standards for the design of the highways (Highway 2000 Project) followed international standards. In the case of the North-South Concession Agreement, the standards of the American Association of State Highway Transport Officials (AASHTO) was adopted, whilst for the East-West Highway, the British Standards (BS EN ISO 9001:2015) were used. On the contrary, airports, by nature, are highly regulated operations by the international body called the International Civil Aviation Organization (ICAO). Thus, the ICAO's Aerodrome Development Standards prescribed how construction was to be undertaken, the design and scoping of the construction to meet security and safety requirements, construction phase, and the service-level requirements for the SIA Renovation and Expansion Project.

### Quality Assurance

From reviewing the Quality Management Strategies, the FGP author realized that the section entitled "Quality Management Activities" combined both quality assurance and quality control activities. Nevertheless, in both documents, the sub-section which was wholly dedicated to quality assurance clearly defined and documented the process for auditing the quality requirements and results from the quality control measurements for the two PPP projects. The interviewees explained that this was done to ensure that quality standards and operational definitions were used. In this section, the FGP author also found that the actual quality assurance metrics used for the projects were documented.

The interviewees added that the quality assurance efforts drafted for the two projects ensured that all the processes which were used in the project and product deliverables would meet the established international quality standards whilst maximizing efficiency and reducing wastage. The FGP author gathered from the semi-structured interviews that all the processes, standards, project activities, and frequencies, for both PPP projects, were developed as a basis for ensuring project quality with regard to the varied processes involved. To achieve this, an iterative

quality process was used throughout the projects' life cycles. The documents stated that for each process the concessionaire would ensure that the standards, activities, and frequencies were met; this was verified by the interviewees. The Quality Management Specialist, along with other project personnel, assisted the concessionaire in verifying that all quality standards were met by conducting weekly process audits, monitoring process performance metrics, and ensuring that all processes complied with both project and institutional standards. The interviewees added that if discrepancies were found, the quality management specialist, along with other parties relevant to the quality management processes of the projects, would meet with the concessionaire, who held primary responsibility to plan and host scheduled document, general management, and project review meetings. Further, the Heads of Agencies interviewed confirmed that project processes, identified variances and/or audit findings, and initiatives for process improvement were also discussed. A more in-depth review of the documents revealed that throughout project implementation, if any changes were needed, the concessionaire would ensure that these were communicated to the key project stakeholders and all project documentation updated.

### Quality Control

As previously mentioned, quality control activities were presented in the section entitled "Quality Management Activities". In this section of the Quality Management Strategy, the process for monitoring and logging results from execution of quality activities to assess performance and recommend necessary changes, were clearly defined and thoroughly documented. In that regard, quality control activities were focused on the acceptable standards and/or product performance (airport and highway) and how measurements were conducted.

The interviewees indicated that the concessionaires ensured that all project deliverables for the two PPP projects complied with the established quality standards. To meet stakeholder requirements and expectations, the interviewees indicated that it was imperative and thus a formal process was implemented in which quality standards were tested, measured and accepted. Further, they

indicated that the quality performance standards for the two PPP Projects were in accordance with the organizational (GoJ and concessionaires) performance standards which were designed specifically for the projects. It should be noted that these standards were based on international standards (ISO).

From the document, the FGP author concluded that the Quality Management Specialist, with support from the Design Engineer, would assist the concessionaires to verify that all quality standards were met for each deliverable prior to official product handover to the GoJ. Also contained in the document was information which would ensure that quality of construction works, full-fledged, well-equipped in-house laboratories were established.

Importantly, the interviewees pointed out that as the overall Project Plan evolved, the probability existed for more deliverables to be added and the quality standards changed. Nevertheless, they mentioned that if any changes were made, the concessionaire would hold sole responsibility to communicate the changes to the project consortium and update all other project plans and documentation.

### Approvals

The FGP author observed that the Quality Management Strategy documents for the two PPP projects had been duly approved by the Government of Jamaica and the concessionaires. The signatures of these individuals confirmed their acceptance and understanding of the Quality Management Strategies.

### CONCLUSION

In keeping with the analysis of the Quality Management Strategies for the two PPP projects and using the PMI's quality management tenet as the yardstick for the evaluation, the FGP author hypothesized that:

- The Quality Management Procedure as found in the documents under review followed closely the Quality Management Approach usually found in Quality Management Plans, and that the concessionaires used a combination of the PMI and PProjects IN Controlled Environments (**PRINCE2®**) methodologies in drafting the documents.

- Quality plays an important role in determining the success rate of projects. The roles and responsibilities as outlined in both Quality Management Strategies appeared to be sufficient in ensuring that all quality management processes and activities for the two PPP projects were undertaken efficiently.
- As it relates to tools and techniques, it was confirmed that the QMIS was the only tool used for quality management. Based on this, the author believes that other relevant tools and techniques such as the Plan–Do–Check–Act Cycle, fishbone diagrams, pareto chart, scatter diagram, decision matrix, flowcharts, stratification, and control charts could have been used to further solidify the quality assurance and control processes.
- As well-designed and resilient infrastructure plays a critical role in supporting national development, so quality assurance is instrumental to the successful delivery of PPP projects. In that context, there is a need for the Government of Jamaica to ensure that all concessionaires put a system in place to build quality in all deliverables from project inception, and to monitor the quality control efforts. In addition to this system, an approach to measure the Cost of Quality is needed. This would allow the concessionaires to calibrate the amount spent on quality assurance. It would include inspection of materials and construction processes to ensure technical and financial reliability of PPP projects. Further, quality assurance is fundamental in preventing re-work and programme delays. In that regard, though not a factor for these two projects, the Government of Jamaica should ensure that quality issues are identified during the build phase of PPP projects, as failure to conduct quality assurance can result in unnecessary defect-liability periods, or infrastructure that fail years after project completion.
- A good quality control system is a necessary component in the production of good end results, especially for PPP projects. Further, for



these mega-sized infrastructure projects, quality control begins from the sourcing of construction materials right to project closure. Thus, it must be maintained at a high level of efficiency, that is - control in relation to whether the materials and work supplied by the concessionaire have met the technical requirements in the contract specifications.

- Quality assurance and quality control were adequately performed for the two PPP projects under review, and both projects incorporated a proactive approach to Continuous Quality Improvement (CQI). This allowed the concessionaires to analyze measures to minimize waste, improve efficiency, and enhance internal and external stakeholder satisfaction for the two PPP projects.

#### **4.5 Stakeholder and Communications Management Plan – Findings and Analysis Report**

##### **INTRODUCTION**

The semi-structured interviews which were conducted with the Heads of Agencies revealed that the Jamaican Government (GoJ) in collaboration with the private investors of the two PPP projects authored Communications Management and Stakeholder Engagement (CMSE) Strategies for the projects. As revealed by the interviewees, the private partners involved in the two PPP projects made a concerted effort to appropriately communicate the critical decisions made as well as the results of the various PPP phases, with consultation and involvement of the general public and with any specific group(s) with keen interest in the projects. Given the political sphere in which the projects would operate, the GoJ and the private investor (along with their experienced team), thought that these strategies should be crafted from the project screening exercise. The FGP author observed that the contents of the Resource and Communications Strategies for the two PPP projects were as follows:

- Project Description and Background
- Purpose

- Communications Management and Stakeholder Engagement Approach
- Resource Management
- Roles and Responsibilities
- Communication Matrix
- Stakeholder Mapping
- Communication Mediums and Technologies
- Communication Standards
- Approvals

Inversely, Specific Objectives 7 and 10 of this FGP requires the author to:

- i. establish if Communications Management Plans were created for both PPP projects dictating the communication mediums used to communicate internally and externally to ensure that all key stakeholders were kept informed regarding project status; and
- ii. assess the Stakeholder Management Plans that were designated for both PPP projects to ensure that they identified the relevant project's key stakeholders and designated the strategy to effectively engage, monitor, and manage them throughout the project lifecycle.

Given the above-mentioned, the evaluation contained within this report will be performed consistent with the below communications management and stakeholder management plan components:

## **Communications Management Plan**

Communications Management Approach  
Communications Management Constraints  
Communication Requirements  
Roles and Responsibilities  
Team Directory  
Communications Matrix  
Communications Flow Chart  
Communications Standards  
Approvals

## **Stakeholder Management Plan**

Purpose  
Stakeholder Management Approach  
Roles and Responsibilities  
Stakeholder Identification and Analysis  
Plan Stakeholder Management  
Manage and Monitor Stakeholder Engagement  
Approvals

## DISCUSSION

### Purpose

The FGP author noted that there was no section dedicated to documenting the purpose of the document. Instead there was a paragraph placed within the introductory section of the document which spoke extensively of the document's overall objective and briefly outlined the related means of meeting the information needs of the projects' stakeholders in a manner appropriate to their interest and involvement. The paragraph also names the document's intended audience. The FGP author believes that as the documents' purpose is to set clear guidelines for ensuring that information was appropriately shared with both internal and external stakeholders, and that they are effectively involved in project decisions and execution throughout the projects' lifecycle, this would have contributed to the success of the two PPP projects.

### Communications and Stakeholder Management Approach

The interviewees indicated that the concessionaires spent a significant amount of time measuring and reporting on project performance, reading and responding to emails, convening meetings, analyzing and adjusting the project plan, meeting with other project personnel, overseeing project activities, and

meeting with the Government and the general public. To ensure effective and timely communications to the various stakeholders of the two PPP projects, the concessionaires played a proactive role in ensuring that a clear and robust communications strategy was crafted. This they said was what aided in minimizing the occurrence of several project management mishaps. From observation, the FGP author noted that, within the Strategies, the communications requirements were documented in the embedded Communications Matrix. The detailed Communications Matrix was used as the reference regarding what information needed to be communicated, who should do the communicating, when communication was to be done, why communication needed to be made, and with whom to communicate. Importantly, there was a section which spoke extensively to change control procedures to effectively manage changes made during the project life cycles. Ultimately, the concessionaires were responsible for managing all proposed and approved changes to the communications management and stakeholder engagement strategies for the two PPP projects. The interviewees stated that this strategy was consistent with the projects' Change Management Plans as it ensured that all project stakeholders remained aware and informed of any changes to communications management on the two projects.

The interviewees added that management of the projects' stakeholders was of utmost importance given the fierce political climate which existed in Jamaica. This would require the ability not only to maneuver the political tide but to be able to locally engage a wide cross-section of the Jamaican populace and employ appropriate tactics to achieve project goals. The FGP author being cognizant of the fact that at least one of the projects fell between more than one constituency - understood the need for this. It was for this reason that the concessionaires deemed it imperative to pair stakeholder engagement with communications management as the two go hand-in-hand and would enable them to gain project support and anticipate resistance, conflict, or competing objectives amongst the projects' stakeholders. In this section of both documents, the FGP author observed that the approach spoke to meticulously identifying and classifying the project stakeholders, determining their power, interest, and influence; and analyzing the

management approach and communication methodology which would be utilized for all project stakeholders. The FGP author agreed that this pragmatic approach would allow for the verification of key influential stakeholders to request input for project planning and garner support as the projects progress. The FGP author was in full agreement with the interviewees, that the successful implementation of the Communication Management and Stakeholder Engagement Strategies would immensely minimize the political risks which major infrastructural projects like the two PPP projects being elaborated are subject to. For this reason, the documents stressed that achieving overall stakeholder support would be essential for a smooth procurement process in the latter PPP phases. The Risk and Procurement strategies for the two PPP projects will be elaborated on in the respective sections further in the document.

#### *Special Mention - Human Resource Management*

An interesting observation of the Communications Management and Stakeholder Engagement (CMSE) Strategies for the two PPP projects was that there was a section wholly dedicated to resource management as opposed to an entirely separate and individual document. Despite this, the FGP author is of the opinion that this did not detract from its value, as Project Resource Management's key components were accounted for and briefly but sufficiently articulated in the section labeled "Resource Management" in the Communications Management and Stakeholder Engagement (CMSE) Strategies. The information presented elaborated; resource management approach, team and equipment identification and acquisition, team development (inclusive of organizational charts), activity resource estimation, team and equipment management, and training requirements.

While different from PMI's Project Management philosophies, the FGP author recognizes that both PPP Projects were planned and developed based on a hybrid of proven theories and approaches. Thus, the approach utilized was still effective in bringing across the key elements of a Human Resource Management Plan to effectively manage the resources of the PPP Projects being elaborated.

### Roles and Responsibilities

The FGP author examined the section of the documents which spoke to the roles and responsibilities of all key project personnel. It was noted that these roles and responsibilities were clearly defined.; This would have facilitated effective project communication among all internal stakeholders for the two PPP projects. Further, the FGP author also noted that the identified roles with regard to project communication were well-structured. Some of the identified primary roles which existed within the project consortium, who were considered as prime sources of information, for the general public include:

- Concessionaire
- Contractor
- Government of Jamaica (Ministry representative)
- Government of Jamaica (Agency representative)
- Government Information Service

As it relates to overall stakeholder management, the documents stated that primary responsibility was entrusted to the respective concessionaires, as they played the lead role in both projects. It was also observed that the above-mentioned roles also had the integral responsibility of engaging some stakeholders and maintaining these relationships.

### Communications Management Constraints

The interviewees affirmed that all project communication activities occurred within the approved budget, schedule, and resource allocations for the projects, as was outlined in the documents. The concessionaires were responsible for ensuring that communication activities were performed by the relevant personnel and without external resources which would result in exceeding the authorized budget. Communication activities occurred according to the frequencies as detailed in the Communication Matrix to ensure the project adheres to schedule constraints. From review, the FGP author noted that the mention of any variances of these timelines

would result in excessive costs or schedule delays and would need approval of the Government of Jamaica.

The interviewees indicated that the respective concessionaires had in place organizational policies which dictated that where applicable, standardized formats and templates would be used for all formal project communications. The detailed policy requirements were provided in the subsection of the documents titled “Communication Standards”.

The FGP author was also advised by the interviewees that, as these projects were locked into 30-35-year concession agreements, some critical information and decisions made were accounted for in the concessionaires’ organizational policy which stated that only an executive management personnel could authorize the distribution of information deemed confidential. They added that for such information written approval had to be requested and obtained from the concessionaires prior to the distribution of any confidential information regarding any of the two PPP projects. The FGP author found this to be true, as there was difficulty in accessing the project documents initially.

#### Communication Requirements

About communication requirements, one of the interviewees emphasized that given the political risks associated with the projects, it was vital to determine the stakeholders’ communication requirements to communicate project information more effectively. More importantly, it was imperative that the communication requirements be completely understood so that stakeholder interest, expectations, and influence could be effectively monitored, and managed for project success.

The semi-structured interviews revealed that as a means of project stakeholders’ identification, the concessionaires in collaboration with the Government of Jamaica would regularly host town hall meetings to communicate with each stakeholder/stakeholder groups to determine their preferred frequency and method of communication. This feedback, they added, was maintained by the concessionaires in the respective project’s Stakeholder Register. From review of the documents shared, the FGP author noted that a requirement was that all

standard project communications would occur in accordance with the respective projects' Communication Matrix. Nevertheless, it was further documented that dependent on the identified stakeholder communication requirements, individualized communication was deemed admissible and within the constraints delineated for the projects.

In addition, the documents stressed that stakeholder communication requirements would need to also identify the project's communication channels and ensure that the relevant stakeholders can access these channels. The interviewees further reported that if project information was communicated through secure means or via internal resources, all stakeholders (internal and external) needed to possess the requisite access to receive project communications regarding the two PPP projects.

#### Team Directory

Whilst this was not a subsection in any of the documents under review, the FGP author noted that a table was presented in the Annexes which provided contact information for all the persons identified in the Communications Management and Stakeholder Engagement (CMSE) Strategies. The interviewees confirmed that the email addresses and telephone numbers shared in this table were used strictly for communication purposes.

#### Communications Matrix

The semi-structured interviews revealed that the communications requirements were established through the hosting of focus group sessions with all key stakeholders of the PPP projects. The interviewees confirmed the content headings of both communication matrices as: **Communication Type, Objective of Communication, Medium, Frequency, Audience, Owner, and Deliverable**. The FGP author was able to ascertain that once completed and approved, the respective concessionaire was responsible to secure the documents in the designated project's repository. Further, it was confirmed that should there have been a need for changes in the information found therein, the mode of



communication to effectuate the changes and update other stakeholders would be determined by the concessionaires.

In reviewing the content headings, the FGP author concluded that they were adequate and would have allowed for a detailed and comprehensive document to ensure effective, clear, and seamless communication throughout the projects' lifecycles. The project communications matrices were used as a quick reference for what information to communicate, who would be performing the communication, when to communicate, with whom to communicate, and why communication was required. The FGP author found that they were primarily based on the informational needs and requirements of the projects' stakeholders. Thus, as confirmed by the two interviewees, the matrices were the guiding framework for all communications from start to finish for both PPP Projects.

#### Communications Flow Chart

From previous knowledge, the FGP author was aware that flow charts, or inter-connected expanses of schematic illustrations, aid in crafting targeted communication management plans. In that regard, it could be considered the foundation of an effective communication plan, connecting a project to various stakeholders by detailing key project performance metrics.

The semi-structured interviews established that through use of flow charts the PPP projects' key stakeholders were able to gain a visual snapshot and roadmap of the projects which allowed for greater understanding of the intended communication process. The interviewees explained that given the extremely complex size and scope of the PPP projects, the flow charts afforded the stakeholders better insight of the stages involved with the distribution of all project communications. The FGP author agrees that the communication flow charts which were crafted within the Communications Management and Stakeholder Engagement (CMSE) Strategies aided in meeting the projects' communication requirements. The interviewees also stated that the communication flow charts provided a schema for the project partners to carefully follow project developments. Nevertheless, the semi-structured interviews revealed that there were instances

which deviated from the communication flow charts which were designed for the two PPP projects; in such instances, additional clarification had been necessary and was provided via the concessionaires.

### Communications Standards

Given the large and complex nature of both PPP Projects, as a means of simplifying communications throughout the project lifecycles, the FGP author learnt through the semi-structured interviews, that both projects involved the process of standardization. This was well incorporated into the Communications Management and Stakeholder Engagement (CMSE) Strategies via the use of existing organizational templates and formats as well as the establishment of new templates and formats for the various formal communication tools used throughout the two PPP Projects. The interviewees spoke briefly of informal communications that occurred throughout the projects and how they were addressed. Consequently, the FGP author determined that albeit these communications were professional and effective in nature, they did not follow a standardized process. Furthermore, the interviewees proclaimed that the main benefits for incorporating standardization within the Communications Management and Stakeholder Engagement (CMSE) Strategies was to ensure project partners and other stakeholders had a thorough understanding of the expectations in attaining consistent and effective communications.

It was also shared that all existing and newly established standardized templates and formats were carefully housed and kept in the respective project's repository, in this case, the project's SharePoint site. The concessionaires held full responsibility and authority for safeguarding these functions.

### Stakeholder Identification and Analysis

In shedding light on this, the interviewees firstly emphasized that stakeholder identification was an imperative process for all projects; however, in PPP projects it was even more necessary to identify and communicate with the stakeholders regarding the need for the PPP project, what it entails and the implications the project may have. They asserted that prior to the hosting of the

brainstorming sessions, criteria were established to determine those individuals and groups who should be included as stakeholders. The semi-structured interviews further revealed that early in the PPP project lifecycle, the GoJ conducted brainstorming sessions with the sole purpose of identifying the critical stakeholders (internal and external) for the projects. The section of the Communications Management and Stakeholder Engagement (CMSE) Strategies titled “Stakeholder Mapping” indicated that the identifying stakeholders process was not static. In that regard, the interviewees confirmed that it was an ongoing process which required the use of critical thinking - to ensure that all individuals and/or groups who may be impacted by, have a legitimate interest in, or the ability to influence the project were captured. They indicated that some of the external stakeholders identified included the following groups: government ministries (Office of the Prime Minister, Ministry of Finance and Planning, Ministry of Transport and Works, Ministry of Foreign Affairs and Foreign Trade, Ministry of Industry, Commerce and Technology, Ministry of Local Government and Community Development), government agencies (Planning Institute of Jamaica (PIOJ), National Investment Bank of Jamaica (NIBJ) - now Development Bank of Jamaica (DBJ), National Works Agency (NWA), Commissioner of Lands, Urban Development Corporation (UDC), Land and Survey Department, Natural Resources Conservation Authority (NRCA), Town Planning Department, Mines and Geology Department, Jamaica Promotions Corporation (JAMPRO), Attorney General’s Department, Chief Parliamentary Counsel, Jamaica Tourist Board (JTB), Jamaica Constabulary Force, The Passport, Immigration and Citizenship Agency (PICA), Tourism Product Development Company (TPDCo), Jamaica Customs Agency, International Air Transport Association (IATA), International Airlines, and National Heritage Trust), labor unions, non-governmental organizations (NGOs), political leaders/ member(s) of parliament, local and international banks, local and international law firms, auditing firms, export credit agencies, government and multilateral funding agencies, professional groups, public asset users, civil society, and the media. The interviewees mentioned that the internal stakeholders were very heterogeneous, and their composition dependent on governmental decisions.

Some of the mentioned internal stakeholders included: the grantors/operators, the concessionaires, local and international contractors, the GoJ, and other investors. The FGP author observed that in both instances, a Stakeholder Register was created to identify and record key stakeholders and their associated levels of influence on the projects.

Further, in the Stakeholder Mapping Section, the FGP author observed a key statement - "In PPP project management, stakeholder analysis supports efficient communication.". Thus, the subsection also described the strategy which was used for classifying each stakeholder to determine their communication needs. In addition, the interviewees noted that another critical step was to ensure that stakeholders' needs, concerns, worries, and interests were mapped. In that regard, they noted that each stakeholder required distinct communication approaches. Therefore, the stakeholder analysis process involved determining for each identified stakeholder: their power, project influence, project interest, project impact and other parameters. These dimensions, they added also aided in the definition of the stakeholder's spheres of influence. In addition, the FGP author discovered that the stakeholders were then categorized into four probable groups: High-power – high-interest, High-power – low-interest, Low-power – high-interest, and Low-power – low-interest

The FGP author upon review of the findings concludes that this analytical process was essential to achieving project success as it provided the concessionaires and the GoJ with the ability to ensure that all information regarding the two PPP projects were very guided and direct in addressing each stakeholder's need(s).

#### *Plan Stakeholder Management*

Successful projects are greatly contingent on the level of buy-in received from all project stakeholders; this holds true for both PPP Projects being evaluated in this FGP. The semi-structured interviews revealed that appropriate management strategies based on stakeholders' specific needs, interests, and potential impact on project success were established. The FGP author further supports the idea that

these strategies which were established from early on in the projects' planning phases were critical in the effective engagement of the stakeholders throughout the projects' lifecycles. As articulated by the interviewees, the level of engagement required for each stakeholder varied over the course of the project, so much so that during the beginning stages of the project, it would have been necessary for key stakeholders to be highly engaged as they were pivotal for project kickoff, achieving project personnel buy-in and clearing obstacles. However, as the projects progressed, the level of engagement shifted from key stakeholders to the broader project implementation team and the end-users.

Planning and documenting how stakeholders were managed throughout the project lifecycles for the two PPP projects provided a clear and actionable plan for project stakeholders to support the project's interests, thereby increasing its success rate.

#### *Manage and Monitor Stakeholder Engagement*

Having ascertained when and how stakeholders would be engaged in the PPP Projects, it is equally important for these engagements to be effectively managed and monitored for project success to be realized. It is in this light that the interviewees confirmed that the detailed Communications Management and Stakeholder Engagement (CMSE) Strategies crafted for the two PPP projects were the guiding documents utilized in communicating project related information to the key stakeholders in a proactive and timely manner. Further, the documents under review revealed that in relation to achieving a high level of transparency regarding project activities, it was necessary to develop monitoring procedures which addressed complaints as well as any environmental impacts. The interviewees divulged that for both PPP projects, annual reports were prepared and presented each year indicating the results of all monitoring activities. The FGP author was told that these reports were accessible from the respective official project websites. Some other tools and techniques which were used to receive ongoing direct feedback from key stakeholders, according to the interviewees, were: active

listening, surveys, complaint logs, and stakeholder meetings; which all allowed for necessary adjustments to be made and for responding to any concerns.

The FGP author observed that the guiding documents stated that the management of the existing stakeholders' relationships would vary depending on the PPP project phases. They also indicated that there were concerted efforts between the contractors and the concessionaires during the construction phase to manage the relationships, whilst during the operation phase it was solely the concessionaires' responsibility - until the concession period ended when the public asset would return to the GoJ. The interviewees mentioned that in their efforts to increase the probability of project success, they held sensitization forums to ensure that stakeholders had a clear understanding of project goals, objectives, benefits, and risks. They added that a critical component which was used to effectively manage stakeholder engagement was that there would be impromptu meetings called to quickly remedy critical stakeholder complaints.

### Approvals

The interviewees confirmed that it was a requirement for the Communications Management and Stakeholder Engagement Strategies to be duly approved. The FGP author observed that above the section for signing, there was a statement which read: "*The undersigned acknowledge they have reviewed this Communications Management and Stakeholder Engagement Strategy and agree with the approach which is presented. Changes to this Communications Management and Stakeholder Engagement Strategy will be coordinated with and approved by the undersigned or their designated representatives.*" Immediately following this statement, the FGP author observed that both documents provided a section which identified the signatories (individuals agreeing to the strategies) by name, title, role and signature. In both instances, the documents were signed by the Project's concessionaire, Government Minister and the Head of Government Agency. The FGP author also observed that these signatories also signed off on the respective Concession Agreements.

## CONCLUSION

The purpose of this Findings and Analysis report was to analyze, using PMI's theoretical framework, the two Communications Management and Stakeholder Engagement (CMSE) Strategies which were crafted for the PPP projects. Based on the analysis performed, the following can be rationalized:

- Given the close alignment of communications management with stakeholder management (engagement), the Government of Jamaica in collaboration with the respective concessionaires dovetailed the two knowledge areas and crafted what they called a Communications Management and Stakeholder Engagement (CMSE) Strategies. Whilst this may be frowned upon in the PMI fraternity, the FGP author understood clearly the motive behind this decision as the two knowledge areas are closely aligned. Further, it satisfactorily covered the components of the two subsidiary plans, and thus enabled the two projects to realize success.
- Given the novelty of PPP projects in Jamaica at the time, the Government of Jamaica with a thirst for increasing the probability for project success, took the initiative in identifying and communicating with stakeholders via periodic forums and town hall meetings. This included the provision of information and solicitation of feedback, which facilitated in the definition of success criteria for the project and ensured buy-in. The FGP author is convinced that this proactiveness would have most definitely contributed to the success of both PPP projects.
- The FGP author was impressed by the fact that the Government of Jamaica strove toward maximum accountability and transparency by organizing forums, summits, and town hall meetings and inviting key stakeholders to voice their needs, concerns, worries, and interests. This allowed for critical reflection to enlarge public support and decrease the probability of project implementation delays as a result.
- An interesting addition to this plan was the “mini” resource management plan. Whilst this shortcut may be held in disfavor within the PMI circles, the

FGP author understood how and why this approach was taken. The interviewees explained that when these PPP projects were being implemented the PMI's knowledge area was called "project human resources management". Nevertheless, given the complexities of the projects, the interviewees saw a greater need for stakeholder management and saw their human resources as a critical stakeholder - thus, their inclusion within the Communications Management and Stakeholder Engagement (CMSE) Strategies.

#### **4.6 Risk Management Plan – Findings and Analysis Report**

##### **INTRODUCTION**

The semi-structured interviews conducted with the Heads of Agencies revealed that due to the high degree of risks which generally affected PPP projects, a detailed and well-organized approach to risk management was important for PPP project success. In that regard, two very robust Risk Management Plans were crafted for the PPP projects under evaluation. The FGP author upon examination of the two Risk Management Plans found that their components included:

- Purpose
- Risk Management Approach
- Roles and Responsibilities
- Risk Identification
- Risk Qualification and Prioritization
- Risk Monitoring and Control
- Risk Mitigation and Avoidance
- Risk Register
- Approvals



## DISCUSSION

### Purpose

The FGP author noted that this section of the Risk Management Plans clearly described the formal process through which risks would be identified, mitigated or avoided, and managed for the two PPP projects. Further, the interviewees affirmed that as the parties were aware that risk sharing was a common attribute of PPP projects, the risk management plans served the purpose of addressing how specific risks would be dealt with and what management actions would be taken against those risks. This they stated was a proactive measure taken by the parties to ensure that the PPP projects would be successfully managed throughout all the phases.

The FGP author understood clearly why the documents under evaluation stressed that where possible, risks would be identified prior to their occurrence so that efforts to avoid and mitigate could be implemented to avert any adverse impacts on the PPP project associated with those risks. The interviewees reiterated that the ultimate purpose of these elaborate plans for the two PPP projects was to document the varied processes, tools and procedures that were used to:

- identify the risks and risk owners;
- evaluate and track the risks;
- determine the control measures for risk avoidance.

### Risk Management Approach

The FGP author observed that the section of the two Risk Management Plans entitled “Risk Management Approach” provided a general description for the strategies to be utilized for the identification and management of the risks associated with the two PPP projects. The interviewees confirmed that the preemptive approach which was utilized was methodical in nature and allowed for the identification, scoring and ranking of the various identified risks. The objective of this approach as documented was to identify risks as early as possible to avoid

or minimize any adverse impact these risks would or could have had on the two PPP projects.

Further examination revealed that those risks which were determined to be of highest impact and most probable were added as an activity in the projects' lifecycle. This was understandable as it would have enabled the designated risk managers to assume responsibility and implement the necessary mitigation measures at the fitting time in the projects' lifecycle. The semi-structured interviews disclosed that the designated personnel would provide status updates on their assigned risks in the bi-weekly project meetings; however, of keynote, this was only done if the meeting's agenda included the risks planned time-frame. Further, the documents stated that upon project completion, specifically during project handover, the concessionaire was expected to conduct assessment on each risk and the overall risk management process. From this analysis, improvement would be identified to be employed in the execution of any future projects. The interviewees verified that all identified improvements would be captured in the lessons learned repository for future use.

As it relates to the risk management approach, there seemed to have been mutual understanding among the key project partners. In addition, the interviewees stated that the risk management approach was conducted on the following principles: fair and non-discriminatory evaluation, active engagement, well-equilibrated risk monitoring, and a clear and concise process. The interviewees mentioned that this was only accomplished through continuous evaluation of critical project areas to identify risks, working harmoniously to determine the potential impact of each risk identified, develop and implement mitigation and avoidance strategies, and monitor the risks. The FGP author is convinced that this would have created the atmosphere needed for project success.

### *Roles and Responsibilities*

Risks are inevitable and cannot be avoided, inherently, they include uncertainties which could have positive and negative effects on projects. Consequently, it is imperative to identify and take actions to minimize the

probability or the effects of risks should they be manifested. As it relates to the two PPP Projects being elaborated, the interviewees confirmed that the responsibility to identify, analyze, quantify, develop mitigation and avoidance strategies and manage the risks of both PPP Projects was shared among the stakeholders of both projects. Through the information divulged, the FGP author understood that the decision authority for selecting whether to proceed with mitigation strategies and implement contingency actions, especially those that have an associated cost or resource requirements, rested with the concessionaires who also bore the responsibility to determine the requirement for modification of the contracts.

From the interviews, the FGP author was able to decipher the key roles and responsibilities and the different aspects of risk management allocated for the two PPP Projects. As indicated above all project stakeholders held responsibility to identify, assess, and provide possible risk response options. The concessionaires, being the managers of both projects, were responsible to establish, update, and maintain the risk registry. The FGP author also learnt that the concessionaires in collaboration with the GoJ were responsible for all risk response approvals and management activities. Responsibility for reporting risk to the relevant body and establishing risk contingency plans in the event that risk may materialize, lies with the concessionaires.

### *Risk Identification*

Upon review, the FGP author found that this section of the Risk Management Plans for the two PPP projects described in detail how project risks would be identified. Further, it thoroughly explained the process through which risk identification would be conducted for the projects. Given that the risks involved in PPP projects are distinct and dynamic owing to the large amounts of investment and long concession period, the interviewees stated that initially the concessionaires for the two PPP projects convened risk assessment meetings with all critical stakeholders to conduct risk identification. They added that the process was very methodical so as to allow for a comprehensive listing of identified risks. The interviewees identified the Crawford Slip Method as the primary technique that

was used in the meetings as this facilitated participation of all stakeholders present to record as many project risks. The FGP author upon inquiring was informed by the Heads of Agencies that this risk identification technique known as the Crawford Slip Method is a simple common and effective brainstorming method which uses speed to encourage creativity for the collection of risk identification data from a wide group of people. In this regard, they stated that in the risk assessment meetings convened with key stakeholders, slips of paper were distributed and the attendees were asked to jot down their ideas regarding probable project risks. The FGP author believes that this also helped to increase buy-in from project stakeholders as they would feel that their contributions were valued. The Head of Agency for the Highway 2000 Project added that other methods utilized in the risk identification process included: interviews with subject matter experts and reviewing historical information (project archives and lessons learned register) from other road construction projects. The FGP author determined that all the risks identified were included in the Risk Registers which were developed for the two PPP projects and the interviewees agreed that this process enabled them to draft feasible strategies which could be used to mitigate the identified risks.

#### *Risk Qualification and Prioritization*

The FGP author observed that this section of each of the risk management plans for each PPP project explained in depth the risks that were qualified and prioritized. The semi-structured interviews explained that to determine the severity of the identified risks, probability and impact factors were assigned to each identified risk to reflect the risk appetite and thresholds of the concessionaires and all the key stakeholders. The interviewees indicated that this process enabled the concessionaires of both projects to prioritize the identified risks as per the impact they may have on the PPP projects - Highway 2000 and the Renovation and Expansion of SIA. It was also reported that the concessionaires used a probability-impact matrix. This was imperative as it enabled the project partners to have complete understanding of the priority for each risk and to value their relative significance. Further, the FGP author believes that the creation of the probability-

impact matrix would have also allowed for risk mitigation/avoidance planning and for detailed risk response plans to be drafted.

### *Risk Monitoring and Control*

In this section of the Risk Management Plans under evaluation, the FGP author found that they described, in detail, how the identified risks would be actively monitored and what the risk monitoring process would entail for the two PPP projects. The interviewees stated that in order to achieve value for money (VfM), the Government of Jamaica had to ensure that the two concessionaires' planned allocation of responsibilities with regard to monitoring risks were established and enforced. Further, they affirmed that risk monitoring was a vital element in ensuring satisfactory performance and sustained service delivery under the two PPP project contracts. As risk monitoring enables active performance measurement of the implemented risk control activities, the FGP author is cognizant that continuous risk monitoring during the PPP projects' lifecycles would have indeed enabled the two concessionaires and the GoJ to realize VfM.

The FGP author also observed that the concessionaires were mandated to include the highest-ranked risks to the project lifecycle and to ensure that personnel was assigned to each of these risks. The interviewees confirmed that the assigned personnel would report during the projects' bi-weekly meetings by providing status updates on these high-ranked risks, identification of any trigger conditions, observed changes in probability or impact of the risks occurring, the progress of the established control measures (inclusive of completion date), and/or emerging risks. They also added that though there was risk sharing, it was the concessionaires' responsibility to ensure that the process was thoroughly documented. This risk documentation process, they said, would be stored in the lessons learned repository and serve as a reference for future PPP projects, to explore common causes of risks as well as to draft strategies for mitigation and avoidance. The FGP author believes that this exhaustive risk monitoring process was highly-effective and would have supported decision-making and overall risk

management as the two PPP Projects progressed through planning and implementation.

### *Risk Mitigation and Avoidance*

In this section of the Risk Management Plans, the FGP author found thorough explanation of considerations which must be given to and the available options for the two concessionaires in managing these risks. The interviewees in the semi-structured interviews explained that the concessionaires led the process of developing responses to each identified risk as well as developing strategies for mitigation and avoidance of the risks. From observation, the FGP author also realized that the identified risks were included in the risk registers which were created for the two PPP projects, as well as the respective project plans. This would have facilitated effective and appropriate risk monitoring which would ensure that the identified risks were responded to in a timely manner.

The interviewees stated that the documented risks for the two PPP projects were managed and controlled within the constraints of time, scope, and cost. They added that the concessionaires for the two PPP projects were tasked with the responsibility of determining the most suitable response to each risk to ensure compliance with these constraints; however, they maintained that there was some degree of flexibility in extreme situations where risk avoidance or mitigation would not have worked.

### *Risk Register*

This section of the Risk Management Plans for the two PPP projects carefully described the risk register criteria and also detailed where the risk register was maintained, and how the identified project risks were tracked during the two PPP projects' lifecycles.

The FGP author observed that the Risk Registers created for the two PPP projects were a detailed framework of all the identified risks for each project, their probability and impact to the projects, the category to which they belong, their triggers, the mitigation strategy, their associated costs, and the expected occurrence of risk. The semi-structured interviews revealed that the risk registers

were developed as a result of the agreements made during the interim project risk management meetings which were convened by the concessionaires of the two projects. Further, the interviewees informed the FGP author that with regard to the identified risks and their likely timeframes, each risk was also included in the project plan, and at the opportune time, the concessionaires assigned personnel to ensure adherence to the agreed mitigation strategies. As previously mentioned, the assigned personnel would report on their assigned risk during the bi-weekly project meetings. Interestingly, the FGP author observed that the two Risk Registers were maintained as an annex to the Risk Management Plans for the two PPP projects under evaluation.

### Approvals

Similar to that which was mentioned in the previous findings and analysis reports, this section of the two Risk Management Plans for the PPP projects provided a statement of endorsement thereby requiring the signatures of the Project's concessionaire, Government Minister, and the respective Head of Government Agency. These key stakeholders' signatures indicated their acknowledgement and awareness of the details of the Risk Management Plans.

### CONCLUSION

The objective of this Findings and Analysis Report was to evaluate, using PMI's project management tenets, the two Risk Management Plans which were crafted for two PPP projects undertaken in Jamaica. In keeping with the evaluation conducted, the following can be extrapolated:

- It was appreciated that risk management was not approached blindly for the two PPP projects, a methodical process was in place and this would have indeed contributed to the success of the two projects: Highway 2000 and the Renovation and Expansion of SIA.
- The complexities of PPP projects result in increased risk exposure for all parties involved, as was the case with the two PPP projects being evaluated. Given this knowledge the risks were identified, and an appropriate strategy crafted from as early as the projects' developmental

stage. This would have significantly contributed to the two PPP projects under evaluation's success.

- The relevance of risks, the establishment of an acceptable risk allocation schema, and the choice of the appropriate risk mitigation strategies are dependent on the specific PPP project. Thus, though these two projects were both implemented under PPP modality, the identified risks were dissimilar, and the mitigation strategies though quite similar were each tailored to the particular project as was the overall approach.
- At the core of a PPP project lies a risk-sharing relationship between the Government and the concessionaire/ developer. However, with value for money being a critical success factor for PPP projects, efficient levels of risk must be transferred to the concessionaire for this to be realized. Strangely, this was not the case for the PPP projects under evaluation, since most of the project risks remained with the Government of Jamaica.

#### **4.7 Procurement Management Plan – Findings and Analysis Report**

##### **INTRODUCTION**

Generally, procurement policies and regulations are established to deliver significant benefits and flexibility throughout the procurement lifecycle of a project. They also work collaboratively to improve project delivery through a renewed focus on the concepts of quality, value for money (VfM), and fitness for purpose.

The semi-structured interviews which were conducted with the Heads of Agencies revealed that due to the long-term and output-focused nature of PPP Projects, it was imperative to have a detailed and comprehensive approach to procurement management if PPP project success is to be achieved. In that regard, two very robust Procurement Management Plans were developed for the PPP projects under evaluation. The FGP author examined the two Procurement Management Plans and determined that their components included:

- Procurement Management Approach



- Procurement Definition and Requirements
- Procurement Risks and Risk Management
- Vendor Identification and Selection
- Vendor Management and Documentation
- Procurement Constraints
- Performance Metrics for Procurement Activities
- Approvals and Acceptance

## DISCUSSION

### Procurement Management Approach

The interviewees indicated that the concessionaires spent a significant amount of time identifying the essential steps and responsibilities for procurement from the start to the end of the projects. To verify this, the FGP author found that these integral parameters were clearly defined within the Procurement Management Plans for the two PPP projects. Additionally, it was interesting to learn that the concessionaires in their capacity provided overall oversight and ensured that every task in the procurement process was intricately structured after conducting thorough analysis. The interviewees iterated that this minimized delays in the two PPP Projects. As it relates to general management and oversight of the procurement activities, this was the responsibility of the two concessionaires in collaboration with other key project partners. A specific unit was established to identify all items to be procured, review the procurement list, and determine whether it was beneficial to make or outsource the items, and start the vendor selection, purchasing and contracting process. The interviewees stated that this was also detailed in the Concession Agreements for each of the projects. The interviewees mentioned that though the concessionaires had ultimate responsibility for procurement activities, the GoJ, for good practice, nevertheless, included personnel from their respective project management teams from an early stage of the procurement process. The FGP author understood the reason for this being

done as it would have ensured that quality was embedded into the procurement process and that they received value for money.

The interviewees relayed that the concessionaires established separate teams whose primary focus would be on procurement of specific modules of the projects, inclusive of two distinctly overarching categories - internal and external. This, they stressed, would have allowed for project tasks such as the planning, designing, construction, operation, maintenance and renovation and the external tasks such as purchasing all the requisite raw materials, and managing the contractors who were involved in the two projects. All the transactions of both projects were done on a contractual basis with stakeholders who were actively managed by the concessionaires.

The interviewees stressed that the concessionaires' approach to procurement followed a transparent, neutral and non-discriminatory selection process that fostered competition and established a balance between the need to reduce the duration and cost of the bid process and securing the best proposal.

#### *Procurement Definition and Requirements*

From general observation, the FGP author was able to infer that the primary purpose of this section of the Procurement Management Plans for the two PPP Projects was to describe, in specific terms, those items which needed to be procured and under what conditions so as to be successfully implemented. According to the interviewees, given that the two concessionaires were selected based on their expertise, the role of wholly defining those items to be procured was entrusted to them. As such, the FGP author found that the concessionaires in the respective Procurement Management Plans listed, justified and set the conditions for the items and services which needed to be procured for the projects to be successful. It was also in this section that the technical requirements, especially those which needed to be procured, were included. The interviewees also mentioned that the concessionaires also ensured that those key project partners with authority to approve project purchases were also duly listed. In addition to describing what the item was, the FGP author noticed that the listings, as

elaborated by the concessionaires, also provided a justification or a description of what deliverable the item supported, and the date the item was required within the projects' lifecycle.

### Procurement Risks and Risk Management

The interviewees confirmed that all potential risks specific to the procurement management phase for both PPP projects were managed in accordance with their respective risk management plans. They shared some key risks which were allocated for in the procurement management phase of the projects. These included but were not limited to: unrealistic schedule and cost expectations for contractors, manufacturing capacity capabilities of contractors, conflicts with current contracts and vendor relationships, configuration management for upgrades and improvements of purchased technology, potential delays in shipping and impacts on cost and schedule, questionable past performance for contractors and potential that final product would not meet required specifications. These risks were not isolated and thus, were aligned with the risk management plans for the projects.

During the interview sessions, the FGP author gathered that it was mandatory for all identified risks in the procurement phase of both projects to be adequately managed on the basis that business relationships were extended to external parties. According to the interviewees, if not managed appropriately, the impact from these alliances would have potentially affected the success of the projects. It was a requisite for the concessionaires for both projects and at minimum one member (who was tasked with procurement oversight) from the GoJ's special project management unit that was established to be present in all project meetings. Further, the concessionaires in collaboration with the GoJ were responsible for approving all procurement transactions. Any related issues or newly identified risks were communicated to all key project partners.

### Vendor Identification and Selection

The interviewees confirmed that the method utilized in identifying and selecting contractors for the two PPP Projects varies from that of the procurement

of goods. They explained that the contractors are firstly identified based on their ability to meet the established procurement requirements, thereafter selected and contracted from a shortlist of international or local suppliers chosen by concessionaires with input from the GoJ. Further, the procurement oversight officer is responsible for the drafting and distribution of the Request for Proposal (RFP). Upon receipt, the requests are evaluated, and the most suitable vendor is selected to award the contract to. Primary responsibility for approval rests with the concessionaires in conjunction with the GoJ. The FGP author took note of the following selection criteria utilized in selecting the most suitable and qualified vendor for the procurement needs based on the requirements:

- Vendor most capable of meeting required delivery dates for procurement requirements
- Past performance of the vendor (if applicable)
- Cost of procurement items
- Quality assurance measures

The interviewees noted that it was mandatory for all contracts to be drafted and formally finalized with the selected vendor prior to the commencement of the scope of work.

#### *Vendor Management and Documentation*

Based on evaluation of the documents, it became clear that in both instances the concessionaires had ultimate responsibility for managing contractors. In addition, the interviewees informed the FGP author that to ensure timely delivery and high quality of products and/or services from contractors, the concessionaires appointed a designee from within their respective teams to meet weekly with the contractors to discuss the progress for all procured items and/or services. The primary purpose of these meetings was to review all documented specifications for each asset (product) as well as to review the quality test findings. The interviewees stated that these critical project meetings provided an opportunity for the concessionaires (or the designees) to critically review each asset's development or

the service that was being provided so as to ensure they were in compliance with the requirements established in the respective projects' specifications. Further, these meetings also facilitated the asking of questions, modification of contracts or requirements in advance so as to prevent delays in asset delivery and/or project completion. It was the concessionaires' responsibility to schedule these meetings regularly until all items were delivered and deemed acceptable.

The interviewees maintained that the procurement management process established for both PPP projects consisted of several steps inclusive of the ongoing management of all procurement activities and contracts. Given the dynamic and sensitive environment in which the PPP projects were being implemented, the interviewees stated that the concessionaires' primary goal was to simplify procurement management to facilitate the successful completion of all contracts as well as the projects. To aid in streamlining the tasks, standard documentation for all steps of the procurement management process was established and used. From observation, the FGP author gathered that the established standard documents were revised regularly as the two PPP projects progressed. This was in an effort to continually improve their procurement efforts. The interviewees pointed out that the two concessionaires' PMO maintained a repository on their shared drive which comprised standard project management and procurement documentation that were used for the projects. These documents would be handed over to the GoJ at the end of the concession periods.

### *Procurement Constraints*

Through the semi-structured interviews, the FGP author was able to clearly identify the procurement constraints for the two PPP Projects being evaluated. These constraints while specific to the procurement aspect were well-aligned with the documented overarching constraints for both projects. Being that the PPP projects were large and complex, the common and most important constraints revealed were inclusive of scope, schedule, cost, and quality. To ensure transparency, and the ability of the contractors to operate within the identified constraints, the interviewees state that all the constraints were thoroughly

explained, documented and communicated to the selected contractors via the Request for Proposal (RFP).

The interviewees verified that all project procurement activities occurred within the approved budget, schedule, and scope for the projects, as was stated in the documents. The concessionaires' designated personnel for oversight of all procurement activities was responsible for ensuring that the activities were performed according to the documented details in the RFP. From review, the FGP author noted that the mention of any variances of these activities would result in excessive costs or schedule delays. The interviewees stated that in such instances of variance, the contractors would assume responsibility for these or as stated in their contracts.

#### *Performance Metrics for Procurement Activities*

Interestingly, the FGP author observed that the 'Performance Metrics for Procurement Activities' section of the Procurement Management Plans meticulously outlined the metrics which were used for procurement activities that were aligned with the two PPP projects. The semi-structured interviews revealed that these metrics were implemented to ensure that the PPP projects remained within their time constraints with regard to procurement activities.

The interviewees added that whilst the concessionaires had already institutionalized metrics for internal procurement needs, performance metrics were created for each of the project's procurement activities. This they said had been determined and agreed upon by the projects' key stakeholders during initial project discussions. Notably, they referenced that the established metrics were also used to collect data on the performance of various contracted vendors which would help with drafting contractor selection criteria for future procurement activities.

#### *Approvals and Acceptance*

It was observed that the approvals and acceptance section of both Procurement Management Plans for the two PPP Projects were duly signed by the usual three parties - the concessionaires/ developers, a Government Minister, and the respective Head of Agency. The FGP author noted that as was observed in the

other subsidiary plans, the signatures of these individuals indicated their acknowledgement, acceptance, and understanding of the purpose and contents of the documents.

## CONCLUSION

The primary aim of this Findings and Analysis Report was to assess, using PMI's methodological framework, the Procurement Management Plans which were crafted for the two PPP projects: Highway 2000 and the Renovation and Expansion of SIA. From the evaluation conducted, the following was determined:

- The Government of Jamaica having decided to utilize the PPP model for the implementation of the two projects, needed to make the determination of the procurement procedures which suited the project characteristics best. In that regard, the interviewees stated that the GoJ's requirements were put forward in the RFP to select the concessionaires, as well as, in ensuring that all procurements for the two PPP projects were fulfilled as per local legislation all while ensuring VfM.
- The well-established PPP tender process necessitated prudent and extensive preparation, inclusive of reserving adequate time and capacity to prepare the tenders and to maintain a strict planning and control during the process.
- Given that the PPP project and procurement objectives for both projects were clear and unambiguously defined, this allowed for a successful procurement process for the two PPP projects and would have facilitated the GoJ realizing VfM.
- The concessionaires for both projects took special care to ensure confidentiality. Where relevant, this was embedded in the procurement process and was key to facilitating a transparent and non-discriminatory procedure. This was an admirable display of integrity and would have boosted the confidence of the stakeholders in the procurement process. Further, this would have also aided in generating effective partnerships

- To ensure VfM for the GoJ, the concessionaires of both PPP projects ensured that there was an established holistic structure and that they continuously improved efficiency, flexibility, and quality, throughout the procurement cycle.

#### **4.8 Resource Management Plan – Notation**

As mentioned on page 117 in the Stakeholder and Communications Management Plan - Findings and Analysis Report of this FGP when asked to view a Resource Management Plan for the two PPP projects, the FGP author was informed that this was not individualized and further, the author was reminded that at the time of project development and implementation - the PMI's knowledge area was Human Resource Management. Therefore, the focus at that time was only on people being resources as opposed to PMI's current knowledge area - Project Resource Management, which focuses on the full realm of resources needed to successfully implement a project. The interviewees indicated that as the concessionaires considered their human resources to be key stakeholders - they were extensively elaborated within the CMSE Strategies designed for each of the PPP projects.

Nevertheless, through review of the CSME Strategies, the FGP author believes that as the information presented adequately elaborated most of the varying components of a resource management plan, this shortcut approach used by the concessionaires did not detract any value. Some of the components which were covered include: the approach used, team and equipment identification and acquisition, team development, activity resource estimation, team and equipment management, and training requirements. Though the concessionaires should have considered creating comprehensive resource management plans for the two PPP projects, they still managed to effectively capture those elements which were deemed critical for managing their human resources, who were considered to be key stakeholders of the projects.



Albeit, the reality was that the FGP author was not able to compose a thorough findings and analysis report which was focused entirely on project resource management. However, an attempt was made to analyze the information which was presented within the CMSE Strategies designed for the PPP projects related to the management of human resources for the project.

Chart 7 provides the reader with key information which enables him/ her to quickly gather the main insights of each findings and analysis report presented above, in accordance with the FGP’s specific objectives.

**Chart 7:** *Summary of Results and Conclusion as per the Specific Objectives of the FGP*  
 (Source: Parker, 2021)

<b>KNOWLEDGE AREA</b>	<b>OBJECTIVE</b>	<b>RESULTS AND CONCLUSION</b>
<b>Project Integration Management</b>	To assess whether the various project management processes and activities were well-integrated and elaborated in the respective charters for both PPP projects.	Both PPP projects had in place supporting initiation documents, which captured particularized information and specifications that were integrated across processes and activities. Additionally, the PPPs utilized a phased-based approach to project implementation so as to benefit from the availability of comprehensive project-level data to aid in decision-making, and capturing lessons learned.
<b>Project Scope Management</b>	To identify and evaluate the Scope Management Plan for both PPP projects to determine those activities which	There was robust project scoping done for the two PPP projects. Scope books were utilized which contained comprehensive and elaborated details and embraced

	needed to be executed to achieve the projects' objectives.	the design of work breakdown structure (WBS) and aligned the work breakdown structures with the PBS and the OBS respectively. Scope documentation was properly defined and articulated so that work undertaken by the private partner (concessionaire) was completed with the highest precision.
<b>Project Cost Management</b>	To determine if the Cost Management Plan devised for both projects stipulated the policies and procedures to plan the project's budget, appropriately allocated project funding, and managed the project's cash flow.	The GoJ/Concessionaire created a well-thought out lifecycle and cost management plan and executed phases in cycles due to the long-term nature of the projects (usually spanning 30 - 35 years). Though, in both instances, the two projects' budgets were managed by the Concessionaire, the GoJ were kept informed and were actively involved in the decision-making process in relation to budgetary matters. In that regard, the policies and procedures were well-documented allowing for good fiscal management.
<b>Project Schedule Management</b>	To determine if a Schedule Management Plan had been crafted for both PPP Projects -	Within the two Lifecycle and Cost Management Plans, it was established that the two (2) GoJ agencies served as oversight

	<p>documenting project activities, their attributes, and relationships to enable timely project completion.</p>	<p>bodies to ensure that project activities were documented and that they remained on schedule and within budget. Management of the schedule was critical as it determined the official handing-over date of the public asset to the GoJ.</p>
<p><b>Project Quality Management</b></p>	<p>To verify if a Quality Management Plan was drafted defining the quality parameters (local and international) to be adopted in the management of both PPP projects, so as to ensure that project results meet expectations for approval.</p>	<p>The Quality Management Procedure closely followed the Quality Management Approach usually found in Quality Management Plans. Also, the Concessionaires used a combination of the PMI and PProjects IN Controlled Environments (PRINCE2®) methodologies in drafting the documents.</p> <p>Quality was embedded into the design of both public assets (highway and airport) as both projects were in compliance with international quality standards. Also, quality assurance and quality control measures were adequately performed for the two PPP projects and both projects incorporated a proactive approach to Continuous Quality Improvement (CQI).</p>

<p><b>Project Resource Management</b></p>	<p>To investigate if Resource Management Plans were designed for both PPP projects identifying and specifying how project resources were to be managed to ensure those project activities were completed within time, cost, and scope constraints.</p>	<p>At the time when the projects' documentation was formalized, PMI's focus was on project human resources management; hence, there was no resource management plan drafted. However, given the complexities of the projects, project personnel believed there was a greater need for stakeholder management; the projects' human resources were seen as a critical stakeholder group for project success and as such they were accounted for within the drafted Communications Management and Stakeholder Engagement (CMSE) Strategies for the two projects.</p>
<p><b>Project Risk Management</b></p>	<p>To ascertain if Risk Management Plans were drafted for both PPP projects and if the plans identified and evaluated (categorized) the projects' main risks, and planned mitigation measures for the most critical ones</p>	<p>For both projects, there was a methodical process in place which looked at the relevance of risks, the establishment of an acceptable risk allocation schema, and the choice of the appropriate risk mitigation strategies. These were tailored for the particular project.</p> <p>Further, a "Risk Management Approach" was established which provided a general description for the stratagem to be utilized for the</p>

		<p>identification and management of the risks associated. In most instances, there exists a risk-sharing relationship between Government/Concessionaire in PPP projects, but the projects under evaluation proved differently as the GoJ bore most of the project risks.</p>
<p><b>Project Procurement Management</b></p>	<p>To examine the Procurement Management Plans of the two (2) PPP projects to ensure that they clearly defined the parameters under which goods and services were acquired so that relevant resources were available for the timely and cost-effective completion of the projects.</p>	<p>The PPP project and procurement objectives were clear and unambiguously defined and were regularly updated, which facilitated a successful tender procedure. The well-established PPP tender process necessitated prudent and extensive preparation that included reserving adequate time and capacity to prepare tenders and to maintain strict planning and control during the process.</p> <p>Importantly, all procurements for the two PPP projects were fulfilled as per local legislation all whilst ensuring VfM. Confidentiality, where relevant, was embedded in the procurement process; this was key for facilitating a transparent and non-discriminatory procedure.</p>

<p><b>Project Communications Management</b></p>	<p>To establish whether Communications Management Plans were created for both PPP projects dictating the communication mediums used to communicate internally and externally to ensure that all key stakeholders were kept informed regarding project status.</p>	<p>The Government of Jamaica in collaboration with the respective Concessionaires dovetailed the two knowledge areas and crafted what they called a Communications Management and Stakeholder Engagement (CMSE) Strategies.</p> <p>The utilization of a communication matrix, communication flow chart and corresponding communication standards served effectively as the guiding framework for all communications from start to finish for both PPP Projects. These elements supported communication both internally and externally and would have contributed to the two PPP projects' success.</p>
<p><b>Project Stakeholder Management</b></p>	<p>To assess the Stakeholder Management Plans that were designated for both PPP projects to ensure that they identified the relevant project's key stakeholders and designated the strategy to effectively engage,</p>	<p>Brainstorming sessions with the sole purpose of identifying the critical stakeholders (internal and external) for the projects. This process was accomplished as per established criteria which determined those individuals and groups who were to be included as a stakeholder. Notably, the CMSE strategy also documented the process to manage and monitor</p>

	<p>monitor, and manage them throughout the project lifecycle.</p>	<p>stakeholder engagement; it included the utilization of tools such as active listening, surveys, complaint logs, and stakeholder meetings.</p> <p>Periodic forums and town hall meetings were scheduled with stakeholders to solicit feedback which also facilitated the process of defining success criteria for the project. By organizing forums, summits, and town hall meetings and inviting key stakeholders to voice their needs, concerns, worries, and interests, accountability and transparency were promoted. This enlarged public support and decreased the probability of project implementation delays.</p>
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## CONCLUSIONS

This chapter of the final graduation project (FGP) consolidates the preceding chapters and provides findings that relate particularly to the research's specific objectives by which the FGP is underpinned. The study analyzed two (2) PPP projects in particular: Highway 2000 and the Renovation and Expansion of Sangster International Airport within the Project Management Institute's ten (10) knowledge areas in order to evaluate the effectiveness of the public-private-partnership projects to development in Jamaica.

Based on the results obtained from the study conducted, it was concluded that:

1. In relation to the first objective, the results showed that both PPP projects had in place supporting initiation documents, even though the documentation reflected different titles. The PPPs project initiation documents captured particularized information and specifications that were integrated across processes and activities. It must also be noted that the projects had concession agreements, which ensured that legal responsibilities of all parties involved were mandated.

The results also revealed that the PPPs utilized a phased-based approach to project implementation so as to benefit from the availability of comprehensive project-level data to aid in decision-making, and to capture lessons learned so that future activities are not negatively impacted and to manage changes adequately to prevent stakeholder resistance.

2. The findings related to the second objective indicated that there was robust project scoping done for the two PPP projects. Projects of this nature require high degrees of precision, and as such Scope Books were utilized which contained comprehensive and elaborated details, which would have contributed to a reduction in the probability of scope creep on the projects.

Further, it was revealed that in determining and executing activities to achieve the project's objectives, there was well-defined project and product scope in the Scope Books, as well as, several pre-project meetings held



with all project partners/stakeholders to ensure that all requirements were adequately captured and documented, all of which contributed to the projects' attainment of success. Additionally, the Scope Books of the two PPP projects embraced the design of work breakdown structure (WBS) and aligned the work breakdown structures with the PBS and the OBS respectively. These unique additions to the WBS aided in project performance and conclusively, project success.

It should be noted that 'traffic forecasting' was foundational to the PPPs project development planning and facilitated the preparation of the necessary documentation needed for the development of various Request for Proposals (RFP). Scope documentation was properly defined and articulated so that work undertaken by the private partner (concessionaire) was completed with the highest precision.

3. Using the PMI's theoretical schema, the assessment conducted in relation to the FGP's third and fourth objectives revealed that the GoJ/concessionaire created a well-thought out lifecycle and cost management plan and executed phases in cycles due to the long-term nature of the projects (usually spanning 30 - 35 years).

In addition, PPP projects involve two critical components which are 'transfer' and 'privatization' which the study identified as being intricately linked to the scheduled completion date. The effective management of the schedule and budget were also identified as critical success factors in the official handing-over date to the government. Furthermore, the findings suggested that to prevent any political and reputational risks for the GoJ, two (2) GoJ agencies were established as oversight bodies to ensure that activities remained on schedule and within budget.

4. With respect to the fifth objective, the analysis performed suggested that the Quality Management Procedure closely followed the Quality Management Approach usually found in Quality Management Plans. Also, the concessionaires used a combination of the PMI and PProjects IN Controlled

Environments (PRINCE2®) methodologies in drafting the documents. Additionally, the roles and responsibilities as outlined in both Quality Management Strategies appeared to have been sufficient in ensuring that all quality management processes and activities for the two PPP projects were undertaken efficiently. It was also confirmed that the QMIS was the only tool used for quality management by the PPPs.

The analysis further revealed that quality assurance and quality control measures were adequately performed for the two PPP projects and both projects incorporated a proactive approach to Continuous Quality Improvement (CQI). This allowed the concessionaires to analyze measures to minimize waste, improve efficiency, and enhance internal and external stakeholder satisfaction for the two PPP projects.

5. The sixth objective was to investigate if Resource Management Plans were designed for both PPP projects, the assessment revealed that at the time when the projects' documentation was formalized, there was no resource management plan. However, stakeholders were considered as critical resources and as such the stakeholder plan (which will be discussed in the subsequent section) covered 'human resources' extensively.
6. Based on the analysis performed with regard to the FGP's seventh and tenth objectives, the Government of Jamaica in collaboration with the respective concessionaires dovetailed the two knowledge areas and crafted what they called a Communications Management and Stakeholder Engagement (CMSE) Strategies. This plan satisfactorily covered the components of the two subsidiary plans.

It was also revealed that periodic forums and town hall meetings were scheduled with stakeholders to solicit feedback which also facilitated the process of defining success criteria for the project. By organizing forums, summits, and town hall meetings and inviting key stakeholders to voice their needs, concerns, worries, and interests, accountability and transparency

were promoted. This allowed for critical reflection to enlarge public support and decrease probability of project implementation delays as a result.

Of note is the fact that, at the point at which the PPP project documentation was developed, the PMI's focus was on 'Human Resources Management' and not on 'Resource Management'. Interestingly, the findings revealed the utilization of a "mini" resource management plan, which elaborated on a resource management approach, team and equipment identification and acquisition, team development (inclusive of organizational charts), activity resource estimation, team and equipment management, and training requirements. This approach was effective in managing the resources of the PPP Projects being evaluated.

Further findings indicated the utilization of a communication matrix, communication flow chart and corresponding communication standards that served effectively as the guiding framework for all communications from start to finish for both PPP Projects.

7. From the evaluation conducted of the FGP's eighth objective, it was extrapolated that Risk Management Plans were in place which aided in the success of the two projects. The complexities of PPP projects resulted in increased risk exposure for all parties involved, thus, risks were identified, and an appropriate strategy crafted from as early as the projects' developmental stage. Although, these two projects were both implemented under PPP modality, the relevance of risks, the establishment of an acceptable risk allocation schema, and the choice of the appropriate risk mitigation strategies were each tailored to the particular project.

Furthermore, a "Risk Management Approach" was established which provided a general description for the strategies to be utilized for the identification and management of the risks associated with the two PPP projects. All project stakeholders held responsibility to identify, assess, and provide possible risk response options while the concessionaires in

collaboration with the GoJ were responsible for all risk response approvals and management activities.

Of interest, the evaluation revealed that most of the project risks remained with the Government of Jamaica and not the concessionaires/ developers as is customary in risk-sharing relationships.

8. The evaluation of the ninth objective of this FGP determined that the PPP project and procurement objectives were clear and unambiguously defined and were regularly updated, which facilitated a successful tender procedure.

Additionally, the GoJ's requirements were put forward in the RFP to select the concessionaires, as well as, to ensure that all procurements for the two PPP projects were fulfilled as per local legislation all while ensuring VfM. Furthermore, the well-established PPP tender process necessitated prudent and extensive preparation that included reserving adequate time and capacity to prepare the tenders and to maintain strict planning and control during the process. In general, it can be concluded that the procurement process was successful in generating effective public-private partnerships.

Overall, the GoJ through PPP arrangements, improved road networks to reduce travelling times and improve intra-island logistics and expanded and upgraded airports to improve global connectivity. Cognizant that PPPs would be playing a more important role in the GoJ's infrastructure development programme, in 2012, the GoJ established a robust and internationally recognized Public-private Partnership (PPP) and Privatisation (P4) Programme, managed by the Development Bank of Jamaica (DBJ) with the Ministry of Finance and Public Service's PPP unit. A well-defined supporting policy and institutional framework to identify, properly develop, implement and monitor infrastructure projects was also put in place. The GoJ has continuously worked to improve its processes to incorporate international project management practices to deliver successful PPPs.

Significant empirical research is needed with regard to evaluating the effectiveness of PPPs versus Traditional Procurement for infrastructure development projects in the Caribbean and PPP contract management for

sustainable PPP projects. Given the distinctiveness of each PPP project and the intricacies of such large and complex legal contracts, this work is needed for more robust analytical clarification of the PPP framework within the Latin American and Caribbean (LAC) context.

## RECOMMENDATIONS

The research that has been undertaken for this Final Graduation Project has highlighted a number of areas on which improvements could be made with regard to the implementation of PPP projects within the Jamaican context. Having completed the elaboration of the findings and analysis reports for the two PPP projects, the FGP author recommends the following to the two concessionaires and the GoJ respectively. These recommendations are in relation to the general and specific objectives:

1. Upon review of the documentation and the interview results, a general but important recommendation for the consortium between the concessionaires and the GoJ is to develop policies to address the standardization and use of a specific project management methodology to guide the development and execution of these and similar type PPP Projects in the future.
2. Having experienced a difficult time locating and sourcing information in the development of this FGP, it is recommended that the GoJ hasten to establish an easily retrievable, and centralized repository to store all project documentation, thereby ensuring its accessibility to all Jamaicans. It is also recommended that these documents be revisited at regular intervals and updated so that the information found within remains relevant.
3. Given the scope and importance of these and similar types of infrastructural development projects, the GoJ should establish a database with the names and other general information of all potential private investors. It is recommended that they use this information to establish a business network where information on the country and opportunities for potential investments are shared regularly.
4. With regard to Cost and Schedule Management, the effective management of the projects' schedule and budget throughout the lifecycle of the projects was integral to commissioning and constructing the two public assets. Failure to do so may negatively impact the timely completion of project delivery, and to a greater extent budgetary planning. Thus, it should be a

requirement for the private investors to liaise with the government regularly to report on project progress against the construction schedule. This was the case with these two projects.

5. In relation to Quality Management, QMIS was the only tool used for quality management in the PPP Projects thus, it is recommended that the concessionaires seek out other relevant quality management tools and techniques to be used to further solidify the quality assurance and control processes for future projects of a similar nature. Additionally, in the same way that well-designed and resilient infrastructure plays a critical role in supporting national development, quality assurance is instrumental to the successful delivery of PPP projects. Therefore, it is recommended that the Government of Jamaica encourages all concessionaires in the future to establish a system which builds quality in all deliverables from project inception, and to monitor the quality control efforts.

Further, taken that quality assurance is fundamental in preventing re-work and programme delays, it is also recommended that the Government of Jamaica ensure that quality issues are identified during the build phase of PPP projects, as failure to conduct quality assurance can result in unnecessary defect-liability periods, or infrastructure that fail years after project completion.

Moreover, a good quality control system is a necessary component in the production of good end results, especially for PPP projects. Further, for these mega-sized infrastructure projects, quality control begins from the sourcing of construction materials right to project closure. Thus, it must be maintained at a high level of efficiency, that is - control in relation to whether the materials and work supplied by the concessionaire have met the technical requirements outlined in the contract specifications.

6. Whilst the “shortcut” approach of integrating the Human Resource Management component of these two PPP Projects in the Communications Management and Stakeholder Engagement Strategies at the time was

understandable and workable. It is recommended, on that basis that the PMI's Project Management approach be adopted by the concessionaires and the GoJ, and a separate Resource Management Plan be developed for all future PPP Projects.

7. In the normal course of business, it is customary for efficient levels of risk to be distributed equitably amongst all invested partners. Given that this was not the case with the two PPP Projects being evaluated, it is recommended that risk allocation is done more efficiently to guarantee better value for money through future similar PPP Projects.
8. Based on the results identified from the Procurement Management process, it is recommended that the process be reviewed often as special care must be taken to guarantee confidentiality where relevant, this is key to a transparent and non-discriminatory process. This also includes aspects of integrity within the procuring authority itself. In addition, the elaboration of the criteria for selecting candidates and awarding the contract should always be given special consideration. The criteria should be formulated as objectively as possible, in order to maintain equal treatment of candidates during the process.



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## APPENDICES

### Appendix 1: FGP Charter

PROJECT CHARTER	
<b>Date:</b>	<b>Project Name:</b>
26-Oct-20	Evaluating the effectiveness of public-private-partnership projects to development in Jamaica through project management lens: the case of Highway 2000 vs Sangster International Airport
<b>Knowledge Areas / PM Processes:</b>	<b>Application Area (Sector / Activity):</b>
<b>Knowledge Areas:</b> Integration Management, Scope Management, Schedule Management, Cost Management, Quality Management, Resource Management, Communications Management, Risk Management, Procurement Management, and Stakeholder Management <b>PM Processes:</b> Initiating, Planning, Executing, Controlling and Closing	Public-Private Partnerships (PPP), Infrastructure Development, National Development
<b>Project Start Date:</b>	<b>Project Finish date:</b>
26-Oct-20	9-Jul-21
<b>Project Objectives (General and Specific):</b>	
<p><b>General Objective:</b>            To utilize the Project Management Institute's prescribed ten (10) knowledge areas to methodically evaluate the effectiveness of public-private-partnership (PPP) projects to development in Jamaica. It analyzes two (2) PPP projects in particular: Highway 2000 and the Sangster International Airport to make this determination.</p> <p><b>Specific Objectives:</b></p> <ol style="list-style-type: none"> <li>1. To assess if the various project management processes and activities were well-integrated and elaborated in the respective charters for both PPP projects.</li> <li>2. To identify and evaluate the Scope Management Plan for both PPP projects to determine those activities which needed to be executed to achieve the projects' objectives.</li> <li>3. To discover whether a Schedule Management Plan was crafted for both PPP Projects to include documenting project activities, their attributes, and relationship to enable timely project completion.</li> <li>4. To determine if the Cost Management Plan devised for both projects stipulated the policies and procedures to plan the project's budget, appropriately allocate project funding, and manage the project's cash flow.</li> <li>5. To verify if a Quality Management Plan was drafted defining the quality parameters (local and international) to be adopted in the management of both PPP projects, so as to ensure that project results met expectations for approval.</li> <li>6. To investigate whether Resource Management Plans were designed for both PPP projects to identify and specify how project resources were managed to ensure those project activities were completed within time, cost, and scope constraints.</li> <li>7. To establish whether Communications Management Plans were created for both PPP projects dictating the communication mediums used to communicate internally and externally to ensure that all key stakeholders were kept informed regarding project status.</li> <li>8. To ascertain if Risk Management Plans were drafted for both PPP projects and if these plans identified and evaluated (categorized) the projects' main risks, and planned mitigation measures for the most critical ones.</li> <li>9. To examine the Procurement Management Plans of the two (2) PPP projects to ensure that they clearly defined</li> </ol>	

the parameters under which goods and services were acquired so that relevant resources were available for the timely and cost-effective completion of the projects.

10. To assess the Stakeholder Management Plans that were designated for both PPP projects to ensure that they identified the relevant project's key stakeholders and designated the strategy to effectively engage, monitor, and manage them throughout the project lifecycle.

**Project Purpose or Justification (merit and expected results):**

This Final Graduation Project (FGP) is being elaborated for the partial fulfillment of the Master in Project Management Programme offered at the University of International Cooperation (UCI) in San José, Costa Rica. This study is being done to shed further light on the effectiveness of public-private-partnership (PPP) projects to development in Jamaica through project management lens. As such, it evaluates two (2) PPP projects, in particular – Highway 2000 and the Sangster International Airport. This research is intended to add to the body of knowledge on PPP project initiatives undertaken by the Government of Jamaica (GoJ) in light of the country's overall development. Nevertheless, this analysis is framed within the standards of the Project Management Institute (PMI) to arrive at this resolve.

By way of executing this FGP, the expected benefits to be derived are:

- Improved planning and execution of current PPP project initiatives in Jamaica and the wider Latin America & Caribbean (LAC) region, as well as serve as a guide to designing the framework for future projects.
- Increased probability of successful completion of PPP project initiatives in Jamaica, that is - within the planned timeframe, budget, and quality requirements.
- Best practices which assure that current and future PPP project results and deliverables will meet and/or exceed stakeholders' requirements and expectations.
- Guidance to ensure that project performance of all future PPP project initiatives will be measured throughout their lifecycle, and any anomalies remedied accordingly.
- An aide-mémoire which dictates that lessons learned need to be documented and disseminated to increase efficiency and effectiveness and build on earned experience for future PPP projects.

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

The specific objectives of this final graduation project are expected to generate a comprehensive study which critically evaluates the effectiveness of two (2) already completed PPP projects in Jamaica according to PMI Standards. It is anticipated that the ten (10) project management knowledge areas will be used as the benchmark for this analysis and answers to the following questions will be derived:

- Were the intended project management processes and activities well-integrated for the two (2) PPP projects being evaluated?
- Were the scopes of both PPP projects clearly defined to determine those activities which needed to be executed to achieve the projects' objective?
- Were the timelines of both PPP projects clearly-defined, documenting project activities, their attributes and relationship to enable timely project completion?
- Were the governance frameworks for all financial resources of the two (2) PPP projects elaborated, showing how the budgets ought to be planned, how project funding should be allocated, and the measures needed to be taken to manage the project's cashflow?
- Were the quality parameters (local and international) for both PPP projects outlined, to ensure that standards are maintained and that project results met expectations?
- In both PPP projects, were project resources identified, and specifications made regarding resource management to ensure that project activities are completed within time, cost and scope constraints?
- Were effective communication techniques and protocols established for both PPP projects, to ensure that internal and external stakeholders were kept informed regarding project status?
- For both PPP projects being evaluated, were all project risks properly identified and categorized, and mitigation measures established for all critical risks?
- Were parameters defined regarding the procurement of goods and services, which ensured that the relevant resources were available for the timely and cost-effective completion of both PPP projects?
- Were guidelines provided in both PPP projects which articulated the identification, designation and prioritization of all stakeholders to ensure that they were effectively engaged, monitored, and managed throughout the project lifecycle?



**Assumptions:**

Project (FGP) assumptions are as follows:

- It is assumed that once the FGP Charter is authorized, no major change requests will be received to same, as this may delay the timely completion of the FGP.
- It is assumed that the author will accept and approve UCI's Regulations for the Final Graduation Project.
- It is assumed that the prescribed timeline is adequate for the elaboration of the FGP.
- It is assumed that all key stakeholders will play their relevant roles, by providing required information, allowing for the timely completion of the FGP.
- It is assumed that the FGP requirements as prescribed by UCI will remain the same.
- It is assumed that the FGP template as given by UCI will not be modified during project implementation.
- It is assumed that all resources are available to achieve the FGP's general and specific objectives.
- It is assumed that risks are inevitable and will require close attention.

**Constraints:**

The elaboration of the FGP has certain constraints that need to be considered. The study has focused on a relatively new project procurement management mechanism being utilized in developing countries, like Jamaica. Thus, it may present some probable challenges, this includes:

- Time: the prescribed schedule is inflexible; thereby, project activities will need to be honored within a limited timeframe in order for the FGP to be deemed successful.
- Cost: financial resources may not be sufficient for the hiring of expert judgment (philologist), printing, photocopying and mailing costs for the FGP may be more than budgeted, and transportation costs may be underestimated due to inflation.
- Resources: inadequate project personnel (only one (1) person) to support execution of FGP deliverables.
- Communication: stakeholders may provide poor and untimely feedback on requested information which may result in a severe breakdown in productivity.
- Quality: the information obtained from the various information sources may prove to be biased; as well as, if project personnel execute deliverables poorly, and refuse to accept change requests then project quality may be compromised.
- Stakeholder Management: subject matter experts may not be able to facilitate interviews because of prior engagements or availability may change at short notice.

**Preliminary Risks:**

Some preliminary risks include:

- If the author does not submit deliverables on-time, this may affect the prescribed project schedule, impacting the successful completion of the FGP.
- If the author does not submit deliverables utilizing the agreed-upon structure, this may affect the quality of the FGP inevitably impacting the FGP outcome (lower grade will be given).
- If the author does not comprehend the deliverables, resulting in incorrect information being submitted, this may affect the quality of the FGP, thereby impacting the successful completion of the FGP.
- If information from the relevant sources are not received within a timely manner, this will affect the given project schedule; thus, impacting the completion of the FGP.

**Budget:**

The FGP Budget was approximated using the analogous technique, and as per the scope of works as laid out in the WBS.

Thus, it consists of the following:

Cost for Philologist: US\$ 170

Printing, Binding and Shipping of finalized FGP to UCI in Costa Rica: US\$ 400

Transportation for Execution Purposes: US\$ 150


Internet: US\$ 150

Miscellaneous: US\$ 100

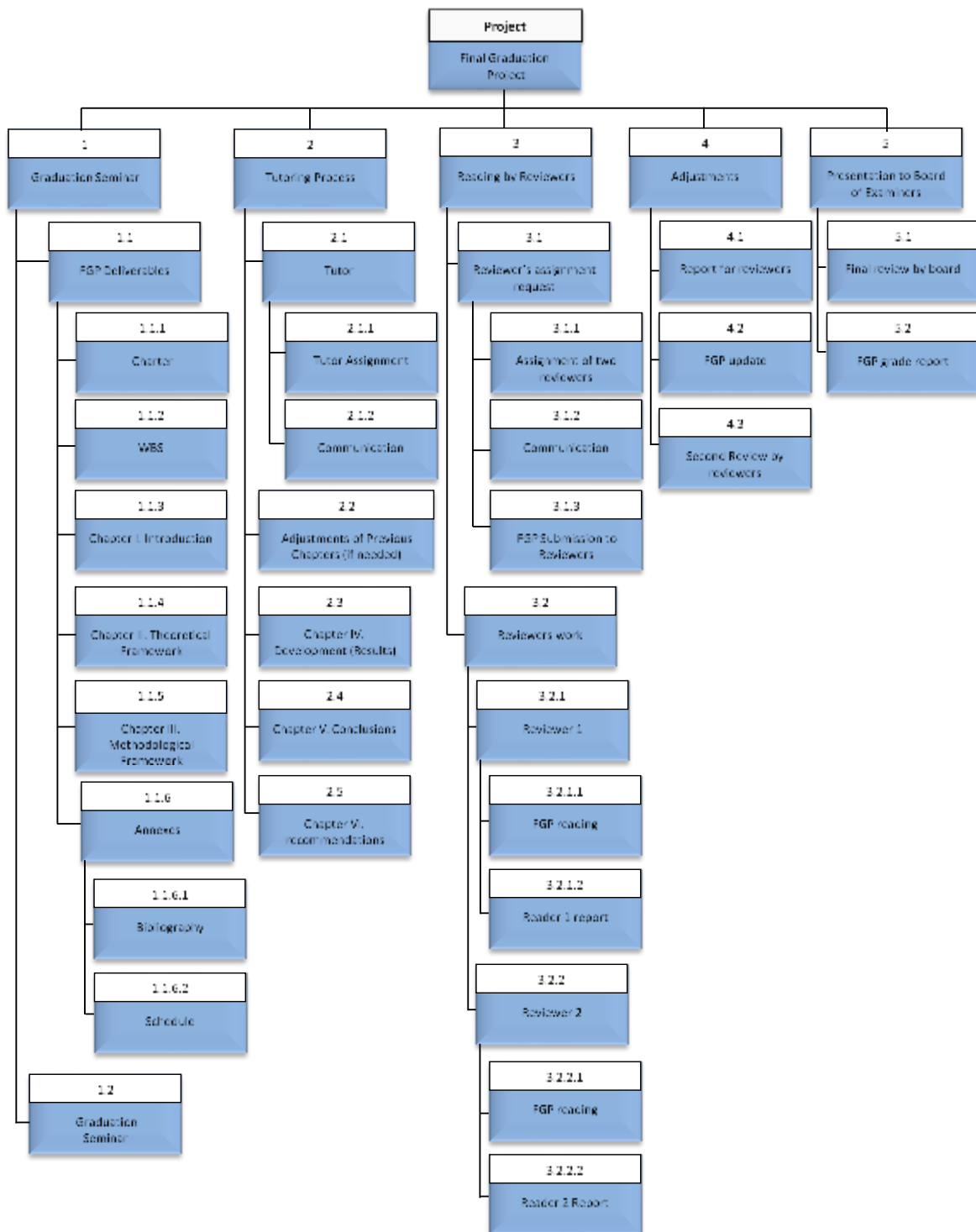
**TOTAL BUDGET = US\$ 970**

**Milestones and Dates:**

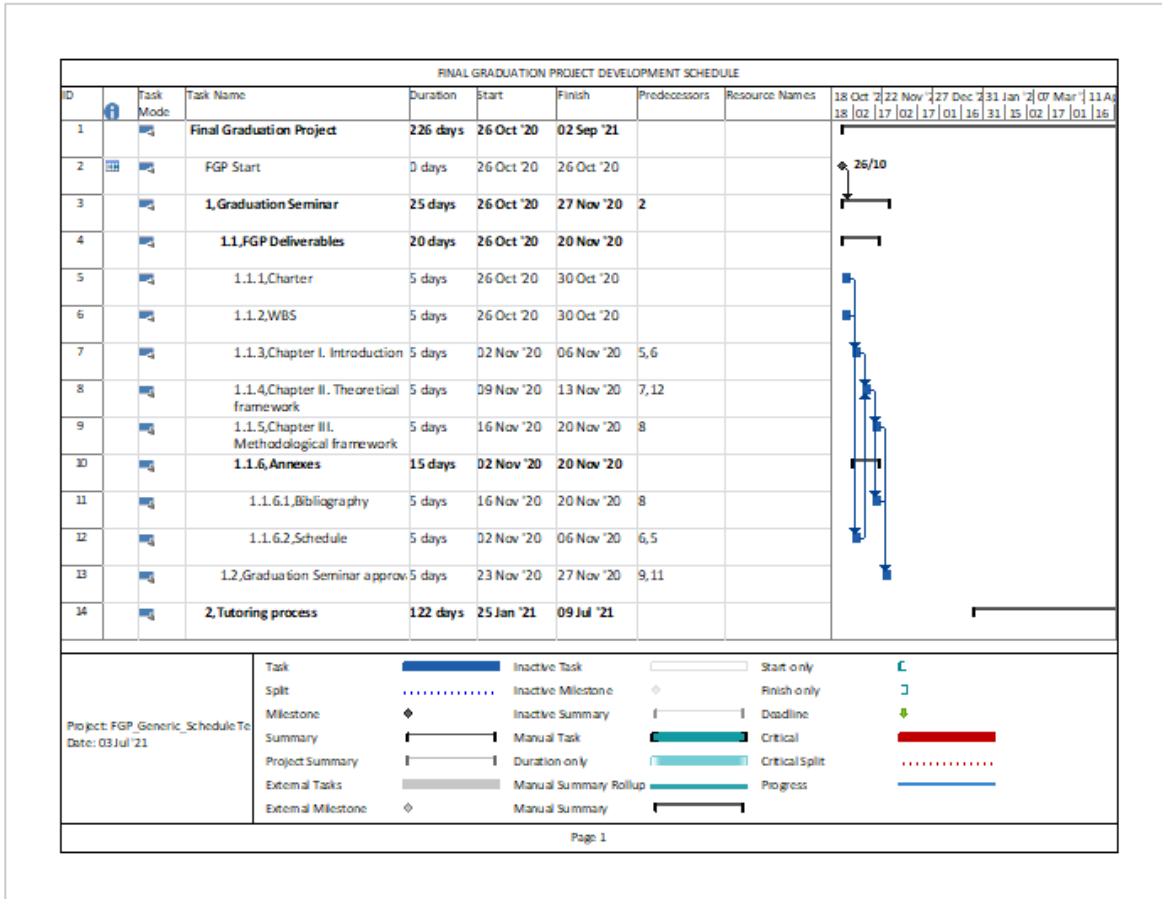
Milestone	Start date	End date
Graduation Seminar	26-Oct-20	27-Nov-20

Tutoring Process	25-Jan-21	09-Jul-21
Reading by Reviewers	09-Jul-21	29-Jul-21
Adjustments	30-Jul-21	26-Aug-21
Presentation to Board of Examiners	27-Aug-21	02-Sept-21
<b>Relevant historical information:</b>		
<p>At the heart of sustainable economic growth and social development lies a country's ability to provide adequate and improved infrastructure coupled with macroeconomic stability and the country's long-term development strategy. Nevertheless, most developing countries, like Jamaica, have failed in their bid to soundly invest in repairing, maintaining, and expanding their infrastructure whilst positively contributing to the transformation of their economies and the achievement of sustainable prosperity. As a result, public-private partnerships (PPPs) have gained notoriety as a strategy or mechanism used by governments to aid in the delivery of traditional public assets and services.</p> <p>Generally, it is understood that a public-private partnership is a formal long-term cooperative agreement whereby a public partner (governmental entity) assigns some of its own responsibilities to a private partner for the purpose of delivering a public infrastructural project or provision of a service. The Canadian Council for Public-Private Partnerships (n.d.) provides the following definition for a public-private partnership, "a cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards".</p> <p>As Jamaica has not been able to successfully maintain nor secure the financing needed for its infrastructural needs, the Government of Jamaica (GoJ) recognized the critical need for collaboration with the private sector so as to narrow the gap. Since 2008, the GoJ has embarked on a program of fiscal rationalization. The fiscal rationalization initiative has occasioned planning across government Ministries, Departments and Agencies (MDAs) to partner with the private sector to deliver critical infrastructure and services as a strategy to increase efficiencies, and appropriately manage fiscal exposure and risks while achieving planned development goals (Development Bank of Jamaica, n.d.). As a result, in 2012, the GoJ crafted and ratified a comprehensive legal framework for the establishment of PPPs – The PPP Policy. This document sets forth the guiding principles for decision-making in state Ministries, Departments and Agencies which are cogitating the use of PPPs to improve the country's infrastructure and the delivery of public services. Since then, as per data retrieved from the PPP Knowledge Lab, majority of the projects which have been completed through the utilization of PPPs were related to upgrading and maintaining Jamaica's road network, ports and airports, and electricity infrastructures accounting for investments in over twenty (20) projects valued at US\$ 3.458 billion dollars.</p> <p>This research primarily aims to evaluate whether two (2) of these eighteen projects were effective in their project management pursuit; the analysis is being made using the Project Management Institute's ten (10) knowledge areas. The projects are namely: Highway 2000 and the Sangster International Airport. The Highway 2000 Project commenced on September 22, 2003, while the Sangster International Airport Project was a three-phase project which began in March 2001. Both projects have since been completed.</p>		
<b>Stakeholders:</b>		
<p><b>Direct stakeholders:</b> Shamene Parker (Project Manager), University for International Cooperation (UCI), Board of Examiners, and Organization of American States (OAS).</p> <p><b>Indirect stakeholders:</b> Government of Jamaica (GoJ), Future Investors, Public Sector Organizations, other Latin American and Caribbean (LAC) Governments, and future UCI student learners.</p>		
<b>Approval:</b>		
<b>Project Manager:</b> Shamene Parker	Signature: 	
<b>Authorized by:</b>	Signature:	

## Appendix 2: FGP WBS



### Appendix 3: FGP Schedule



FINAL GRADUATION PROJECT DEVELOPMENT SCHEDULE							
ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
15		<b>2.1,Tutor</b>	<b>10 days</b>	<b>25 Jan '21</b>	<b>05 Feb '21</b>		
16		2.1.1,Tutor assignment	1 day	25 Jan '21	25 Jan '21		
17		2.1.2,Communication and Review	9 days	26 Jan '21	05 Feb '21		
18		2.2,Adjustments of previous chapters (If needed)	5 days	05 Feb '21	11 Feb '21		
19		2.3,Chapter IV. Development (Results)	106 days	12 Feb '21	07 Jul '21	18	
20		Check Point 1	38 days	26 Feb '21	20 Apr '21	16	
21		Check Point 2	21 days	21 Apr '21	19 May '21	20	
22		Check Point 3	15 days	20 May '21	09 Jun '21	21	
23		Check Point 4	13 days	10 Jun '21	26 Jun '21		
24		Check Point 5	5 days	28 Jun '21	03 Jul '21		
25		2.4,Chapter V. Conclusions	5 days	21 Jun '21	26 Jun '21		
26		2.5,Chapter VI. Recommendations	5 days	21 Jun '21	26 Jun '21	2555	
27		Tutor approval	5 days	03 Jul '21	09 Jul '21	26	
28		Philologist Review and Approval	14 days	16 Jun '21	02 Jul '21		

Project: FGP_Generic_ScheduleTo Date: 03 Jul '21	Task	Inactive Task	Start only	Critical
	Split	Inactive Milestone	Finish only	Critical Split
	Milestone	Inactive Summary	Deadline	Progress
	Summary	Manual Task	Critical	
	Project Summary	Duration only	Critical Split	
	External Tasks	Manual Summary Rollup	Progress	
	External Milestone	Manual Summary	Manual Summary	

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FINAL GRADUATION PROJECT DEVELOPMENT SCHEDULE							
ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
29		<b>3, Reading by reviewers</b>	20 days	09 Jul '21	05 Aug '21		
30		<b>3.1, Reviewers assignment request</b>	15 days	09 Jul '21	29 Jul '21		
31		3.1.1, Assignment of two reviewers	2 days	09 Jul '21	12 Jul '21	28	
32		3.1.2, Communication	2 days	13 Jul '21	14 Jul '21	31	
33		3.1.3, FGP submission to reviewers	1 day	15 Jul '21	15 Jul '21	32	
34		<b>3.2, Reviewers work</b>	10 days	16 Jul '21	29 Jul '21		
35		<b>3.2.1, Reviewer</b>	10 days	16 Jul '21	29 Jul '21		
36		3.2.1.1, FGP reading	9 days	16 Jul '21	28 Jul '21	33	
37		3.2.1.2, Reader 1 report	1 day	29 Jul '21	29 Jul '21	36	
38		<b>3.2.2, Reviewer</b>	10 days	16 Jul '21	29 Jul '21		
39		3.2.2.1, FGP reading	9 days	16 Jul '21	28 Jul '21	33	
40		3.2.2.2, Reader 2 report	1 day	29 Jul '21	29 Jul '21	39	
41		<b>4, Adjustments</b>	20 days	30 Jul '21	26 Aug '21		
42		4.1, Report for reviewers	9 days	30 Jul '21	11 Aug '21	40	

Project: FGP_Generic_ScheduleTo Date: 03 Jul '21	Task	Inactive Task	Start only	Critical
	Split	Inactive Milestone	Finish only	Critical
	Milestone	Inactive Summary	Deadline	Critical
	Summary	Manual Task	Critical	Critical
	Project Summary	Duration only	Critical Split	Critical
	External Task	Manual Summary Rollup	Progress	Progress
	External Milestone	Manual Summary	Manual Summary	

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FINAL GRADUATION PROJECT DEVELOPMENT SCHEDULE							
ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
43		4.2.FGP update	1 day	12 Aug '21	12 Aug '21	42	
44		4.3,Second review by reviewers	10 days	13 Aug '21	26 Aug '21	42,43	
45		5, Presentation to Board of Exami	5 days	27 Aug '21	02 Sep '21		
46		5.1,Final review by board	2 days	27 Aug '21	30 Aug '21	44	
47		5.2,FGP grade report	3 days	31 Aug '21	02 Sep '21	46	
48		FGP End	0 days	02 Sep '21	02 Sep '21	47	

Project: FGP_Generic_Schedule To Date: 03 Jul '21	Task		Inactive Task		Start only	
	Split		Inactive Milestone		Finish only	
	Milestone		Inactive Summary		Deadline	
	Summary		Manual Task		Critical	
	Project Summary		Duration only		Critical Split	
	External Task		Manual Summary Rollup		Progress	
	External Milestone		Manual Summary			

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#### Appendix 4: Semi-structured Interview Questions (Sample 1)

INTERVIEWER	INTERVIEWEE
<b>NAME:</b> <b>INSTITUTION:</b> <b>DEPARTMENT:</b> <b>TITLE:</b>	<b>INTERVIEWEE:</b> <b>COMPANY:</b> <b>DEPARTMENT:</b> <b>POSITION:</b>
<b>DATE:</b> 2 March 2021	
<b>RESEARCH TOPIC:</b> Evaluating the effectiveness of public-private-partnership projects to development in Jamaica through project management lens: the case of Highway 2000 vs Sangster International Airport	
<b>WORKING ABSTRACT:</b> <p>For several years, public-private partnership (PPP) projects have been a valuable panacea for the development and/or rehabilitation of critical public infrastructure in Jamaica. These projects have served to eliminate poverty and stimulate economic growth. Within that context, the objective of this document is to develop a stratagem which evaluates the effectiveness of two (2) PPP projects in Jamaica, using PMI’s theoretical framework. The need for this study arose from the notion that infrastructural development projects in Jamaica, generally, are delivered with cost overruns, schedule constraints, and quality shortfalls.</p> <p>Through this analytical and qualitative study, which utilized semi-structured interviews, the analysis of literature from previously published documents, coupled with the use of tools stipulated by the PMI, the performance of two (2) already completed public-private partnership projects in Jamaica were evaluated using PMI’s broader measures of success. Thus, the end product will be a compendium of ten (10) individualized findings and analysis reports as per the knowledge areas prescribed by the PMI. It is anticipated that the finalized document will add to the body of literature on project management and public-private partnerships and will also be a reference for the Government of Jamaica (GoJ), project management practitioners, private sector, and policymakers in Jamaica, as well as in other Latin American and Caribbean countries.</p> <p>Additionally, the mapped dimensions not only present a benchmark to diagnose the scope of PPP project success but also proffer a solid foundation for other academics to conduct supplementary studies vis-à-vis PPP project success. The FGP findings provide a well-informed basis on the areas of opportunity, primarily surrounding cost, schedule, and quality, to be considered for improvement to realize PPP project effectiveness, thus solidifying the need to carry out the study. Conclusively, it is confirmed that this study will facilitate the development and execution of more successful PPP projects as it will illustrate the need to incorporate project management best practices as postulated by the PMI. In that regard, from the completed Findings and Analysis Reports, the stakeholders will be better guided to design PPP projects which deliver results, and which are completed as per acceptable international standards.</p>	



## INTERVIEW CONSENT FORM

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I, \_\_\_\_\_, hereby give permission for **Shamene Parker** to interview me and quote my responses in a scholarly research paper. Having been provided with advance information, I am cognizant that this research paper will be submitted to the Global School of Project Management at the University for International Cooperation (UCI) in San José, Costa Rica.

Whilst it is anticipated that there are no risks associated with my participation, I am aware that I have the right to discontinue the interview or withdraw my comments from the research at any time. It is also understood that there are no compensatory benefits to be received for my participation.

I understand that I waive any claim to copyright this material should the author ever publish it in a scholarly journal or in electronic format online. I also have full understanding that the author [will / will not] maintain my anonymity as a part of this interview.

I hereby give my permission in the form of my signature below.

Printed Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

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## INTERVIEW QUESTIONS - HIGHWAY 2000 PROJECT

### General Questions

1. Describe your professional (and/or personal) experience relating to this research topic.
2. In your opinion, what were the factors that gave rise to the development of the Highway 2000 (H2K) Project?
3. Was the H2K Project formulated as a result of any national development plan(s)? If yes, how would you evaluate the Project's direct and indirect contributions to national development?
4. In your capacity as Managing Director - National Road Operating and Constructing Company Limited (NROCC), were you directly involved in the formulation of the H2K project documents? If yes, kindly identify these documents.
5. Are you aware of the existence of a project charter or project initiation document? If yes, is this document available to the public?

### Project Scope Management

6. In your opinion, was the *Scope of Works* clearly defined for the Highway 2000 Project to determine those activities which needed to be executed to

achieve the project's objective? If no, what should have been included / excluded?

7. Are you aware of the process used for developing the *Scope of Works* for the H2K Project? If yes, please describe.

### **Project Schedule Management**

8. What was the methodology used to develop the project's schedule? And, what was the initial expected duration?
9. Was there ever a need for project extension? If yes, what was the primary cause for this, and the duration required?

### **Project Cost Management**

10. Was the governance framework for all financial resources for the Project elaborated, showing how the budgets ought to be planned, how project funding should be allocated, and the measures needed to be taken to manage the project's cashflow? If yes, are these documents readily accessible? If so, where can they be found?
11. Was there a particular method used in the development of the project's budget? (analogous, parametric, etc.) Kindly expound.

### **Project Risk Management**

12. Were all project risks properly identified, categorized and documented? If yes, name the critical ones (or can a document be shared which identifies them?).
13. What mitigation measures were established for all the critical risks?

### **Project Quality Management**

14. Were any quality parameters (local and/or international) for the project outlined, to ensure that standards were maintained and that project results would meet expectations? If yes, kindly elaborate.
15. To what extent, was quality control and quality assurance conducted throughout the project's lifecycle?

### **Project Resource Management**

16. Were project resources identified, and specifications made regarding resource management to ensure that project activities would be completed within time, cost and scope constraints? Can you elaborate on this process?
17. To what extent was the involvement of local talent (skilled and/or unskilled) in the implementation of this project?

### **Project Communications Management**

18. Were effective communication techniques and protocols established for the project, to ensure that internal and external stakeholders were kept informed regarding project status? If yes, what mediums were used?
19. Was the media a critical player in the communication framework for this project? If yes, how were they engaged, and how effective was this for public education regarding the project's progress?

### **Project Procurement Management**

20. Were parameters defined regarding the procurement of goods and services, which ensured that the relevant resources were available for timely and cost-effective project completion? If yes, can you speak on how contracts were evaluated, awarded, and closed in the procurement process for this project?
21. What were the quality standards followed in the procurement of goods and services for this project? Were these based on any international standards? If yes, kindly elaborate.

### **Project Stakeholder Management**

22. Were guidelines provided for the project which articulated the identification, designation and prioritization of all stakeholders to ensure that they were effectively engaged, monitored, and managed throughout

the project lifecycle? Can you state how these guidelines impacted project progress?

23. What were the means of engagement for key stakeholders during the project's lifecycle?

### **Concluding Questions**

24. Can you comment on the overall achievement of time, budget and quality requirements as it relates to Highway 2000?

25. Is there anything critical you would like to add that has not been covered by the questions I have already posed?

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END

## Appendix 5: Semi-structured Interview Questions (Sample 2)

INTERVIEWER	INTERVIEWEE
<b>NAME:</b> <b>INSTITUTION:</b> <b>DEPARTMENT:</b> <b>TITLE:</b>	<b>INTERVIEWEE:</b> <b>COMPANY:</b> <b>DEPARTMENT:</b> <b>POSITION:</b>
<b>DATE:</b> 4 March 2021	
<b>RESEARCH TOPIC:</b> Evaluating the effectiveness of public-private-partnership projects to development in Jamaica through project management lens: the case of Highway 2000 vs Sangster International Airport	
<b>WORKING ABSTRACT:</b> <p>For several years, public-private partnership (PPP) projects have been a valuable panacea for the development and/or rehabilitation of critical public infrastructure in Jamaica. These projects have served to eliminate poverty and stimulate economic growth. Within that context, the objective of this document is to develop a stratagem which evaluates the effectiveness of two (2) PPP projects in Jamaica, using PMI's theoretical framework. The need for this study arose from the notion that infrastructural development projects in Jamaica, generally, are delivered with cost overruns, schedule constraints, and quality shortfalls.</p> <p>Through this analytical and qualitative study, which utilized semi-structured interviews, the analysis of literature from previously published documents, coupled with the use of tools stipulated by the PMI, the performance of two (2) already completed public-private partnership projects in Jamaica were evaluated using PMI's broader measures of success. Thus, the end product will be a compendium of ten (10) individualized findings and analysis reports as per the knowledge areas prescribed by the PMI. It is anticipated that the finalized document will add to the body of literature on project management and public-private partnerships and will also be a reference for the Government of Jamaica (GoJ), project management practitioners, private sector, and policymakers in Jamaica, as well as in other Latin American and Caribbean countries.</p> <p>Additionally, the mapped dimensions not only present a benchmark to diagnose the scope of PPP project success but also proffer a solid foundation for other academics to conduct supplementary studies vis-à-vis PPP project success. The FGP findings provide a well-informed basis on the areas of opportunity, primarily surrounding cost, schedule, and quality, to be considered for improvement to realize PPP project effectiveness, thus solidifying the need to carry out the study. Conclusively, it is confirmed that this study will facilitate the development and execution of more successful PPP projects as it will illustrate the need to incorporate project management best practices as postulated by the PMI. In that regard, from the completed Findings and Analysis Reports, the stakeholders will be better guided to design PPP projects which deliver results, and which are completed as per acceptable international standards.</p>	

## INTERVIEW CONSENT FORM

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Whilst it is anticipated that there are no risks associated with my participation, I am aware that I have the right to discontinue the interview or withdraw my comments from the research at any time. It is also understood that there are no compensatory benefits to be received for my participation.

I understand that I waive any claim to copyright this material should the author ever publish it in a scholarly journal or in electronic format online. I also have full understanding that the author [will / will not] maintain my anonymity as a part of this interview.

I hereby give my permission in the form of my signature below.

Printed Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

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## INTERVIEW QUESTIONS - SANGSTER INTERNATIONAL AIRPORT (AIRPORT RENOVATION AND EXPANSION PROJECT)

### General Questions

1. Describe your professional (and/or personal) experience relating to this research topic.
2. In your opinion, what were the factors that gave rise to the development of the airport expansion project for the Sangster International Airport?
3. Was the airport expansion project for the Sangster International Airport formulated as a result of any national development plan(s)? If yes, how would you evaluate the Project's direct and indirect contributions to national development?
4. In your capacity as President & CEO - Airports Authority of Jamaica (AAJ), were you directly involved in the formulation of the airport expansion project documents? If yes, kindly identify these documents.
5. Are you aware of the existence of a project charter or project initiation document? If yes, is this document available to the public?

### **Project Scope Management**

6. In your opinion, was the *Scope of Works* clearly defined for the airport expansion project (Sangster International Airport) to determine those activities which needed to be executed to achieve the project's objective? If no, what should have been included / excluded?
  
7. Are you aware of the process used for developing the *Scope of Works* for the airport expansion project for the Sangster International Airport? If yes, please describe.

### **Project Schedule Management**

8. What was the methodology used to develop the project's schedule? And, what was the initial expected duration?
  
9. Was there ever a need for project extension? If yes, what was the primary cause for this, and the duration required?

### **Project Cost Management**

10. Was the governance framework for all financial resources for the Project elaborated, showing how the budgets ought to be planned, how project funding should be allocated, and the measures needed to be taken to manage the project's cashflow? If yes, are these documents readily accessible? If so, where can they be found?

11. Was there a particular method used in the development of the project's budget? (analogous, parametric, etc.) Kindly expound.

### **Project Risk Management**

12. Were all project risks properly identified, categorized and documented? If yes, name the critical ones (or can a document be shared which identifies them?).

13. What mitigation measures were established for all the critical risks?

### **Project Quality Management**

14. Were any quality parameters (local and/or international) for the project outlined, to ensure that standards were maintained and that project results would meet expectations? If yes, kindly elaborate.

15. To what extent, was quality control and quality assurance conducted throughout the project's lifecycle?

### **Project Resource Management**

16. Were project resources identified, and specifications made regarding resource management to ensure that project activities would be completed within time, cost and scope constraints? Can you elaborate on this process?

17. To what extent was the involvement of local talent (skilled and/or unskilled) in the implementation of this project?

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20. Were parameters defined regarding the procurement of goods and services, which ensured that the relevant resources were available for timely and cost-effective project completion? If yes, can you speak on how

contracts were evaluated, awarded, and closed in the procurement process for this project?

21. What were the quality standards followed in the procurement of goods and services for this project? Were these based on any international standards? If yes, kindly elaborate.

### **Project Stakeholder Management**

22. Were guidelines provided for the project which articulated the identification, designation and prioritization of all stakeholders to ensure that they were effectively engaged, monitored, and managed throughout the project lifecycle? Can you state how these guidelines impacted project progress?

23. What were the means of engagement for key stakeholders during the project's lifecycle?

### Concluding Questions

24. Can you comment on the overall achievement of time, budget and quality requirements as it relates to the airport expansion project for the Sangster International Airport?
25. Is there anything critical you would like to add that has not been covered by the questions I have already posed?

---

END

## Appendix 6: Certificate of Approval: Philological Dictum for FGP

4 Farringdon Heights,  
Kingston 6, Jamaica

July 01, 2021

Academic Advisor

Masters Degree in Project Management (MPM)  
Universidad para la Cooperación Internacional (UCI)

Dear Academic Advisor:

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

I hereby confirm that Shamene Parker has made the corrections to the Final Graduate Project document as I have advised.

In my opinion, the document should now meet the literary and linguistic standards expected of a student reading for a degree at the Masters level.



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Hilory Pamela Kelly

B.A. (UWI) M.Ed. (UWI) MSc. Unisys, (England)