TERMS OF REFERENCE
(INDIVIDUAL CONSULTANT)

Data Warehouse Expert

Institution:	Ministry of Finance
Country:	Belize
Project:	Strengthening Public Expenditure Management in Belize (SPEM)
Process ID:	BL-L1038 – P00106
Duration:	Eighteen (18) Months
Duty Station:	Remote
Deadline:	**August 21, 2025; 10:00 a.m. (Local Belize Time)**

1. **BACKGROUND**

   The Strengthening Public Expenditure Management Program – SPEM (5353/OC-BL-L1038) is a response to the consolidation efforts to bring public finances back to a sustainable path and create meaningful fiscal space require the adaptation of reforms to reduce inefficiencies in public expenditure, which amounts to 6.3% of GDP at the level of the wage bill, procurement, and transfers, the third highest in the region. To face this challenge the government is committed to implementing a comprehensive fiscal consolidation plan, with a strategy centered on three areas: (i) expenditure reduction (ii) increased revenues; and (iii) debt restructuring.

   The Government of Belize, through the Ministry of Finance (MOF), is undertaking a strategic initiative to develop a centralized data warehouse solution. This initiative aims to improve data accessibility, enhance decision-making capabilities, and streamline data management across government departments. The data warehouse will integrate data from multiple governmental systems, providing a unified platform for real-time analytics and reporting.

   To support this initiative, the MOF seeks to engage an individual consultant with expertise in data warehouse development, including data modeling, ETL processes, OLAP cube design, and data governance. The consultant will work closely with MOF and the Central Information Technology Office (CITO) to design and implement the core components of the data warehouse.

2. **OBJECTIVE AND SCOPE OF WORK**

   The primary objective of this consultancy is to provide technical expertise and hands-on support in the development and implementation of a data warehouse for the MOF, based on the model validated through the previously developed prototype. The consultant will be

responsible for developing, and optimizing the data warehouse architecture Prototype, ensuring data integrity, and facilitating knowledge transfer to MOF and CITO staff.

3. **RESPONSIBILITIES/ACTIVITIES**

The consultant will perform the following tasks:

1. **Data Warehouse Design and Development**

    o Review and enhance the prototype data warehouse schema to ensure it is scalable and efficient.

    o Design and implement data marts to serve different government departments.

    o Define data governance and quality assurance processes.

2. **ETL Processes**

    o Design and implement ETL processes to extract, transform, and load data from multiple government systems.

    o Optimize ETL workflows to improve efficiency and maintain data integrity.

3. **Reporting and Analytics**

    o Develop and configure Power BI dashboards and SSRS reports.

    o Design OLAP cubes for multi-dimensional analysis.

4. **Data Security and Governance**

    o Implement role-based access controls and data encryption measures.

    o Ensure compliance with governmental data privacy regulations.

5. **Knowledge Transfer and Documentation**

    o Conduct training sessions for MOF and CITO staff. Develop comprehensive technical documentation and user manuals.

4. **KEY OUTPUTS/DELIVERABLES**

The consultant will present the following deliverables:

Deliverables	Period weeks	Working days
1. A comprehensive work plan outlining activities, deliverables, and timelines.	1	4

2. **Data governance model** o Develop a model including clarity on roles and responsibilities, specifically, who will be accountable for data quality, access control, classification, and metadata management. A clear delineation between data owners, custodians, and stewards will be essential to ensuring operational alignment. o Develop a strategy to support ministries and agencies in developing formal data sharing agreements, such as MOUs or SLAs, that set expectations around data lifecycle policies such as retention, archival, and disposal of data stored in the warehouse.	3	7
3. **Data Warehouse Deployment Architecture Document for TEST and PROD Environments**	5	11
o Develop a deployment architecture document including servers, networks, software, and connectivity details.		
o Prepare activities such as server provisioning, network configuration, Active Directory configurations, and Git repository configurations.		
4. **Data Warehouse Configuration Manual for TEST and PROD Environments**	6	24
o Configure SQL Server to support data warehousing operations and integrate with Active Directory for centralized authentication.		
o Implement SQL Server and SQL Server Integration Services (SSIS) for ETL processes, Master Data Services (MDS), SQL Server Analysis Services (SSAS) for OLAP and data mining, SQL Server Reporting Services (SSRS), SQL Server Management Studio (SSMS), and Power BI.		
o Deliver an installation and configuration manual.		
5. **Data Mart and Data Warehouse Design Document and Source Code**	12	33
o Design the first data mart and the first data warehouse, including implementation in both environments.		
o Implement the ETL processes to populate the data mart and data warehouse, including source code and automation configuration.		
6. **Master Data Management and Metadata Definition Implementation Document**	3	15
o Create and publish the metadata catalog primary entities (MDS).		
7. **Design and ETL Development Training Material**	3	10

o Conduct a two-day training/workshop on the design and implementation of ETL processes and automation.			
8. **Report and Analysis Design Document and Source Code for the Selected Stakeholder**	**8**	**24**	
o Design a cube for the selected stakeholder needs, including a document with the design and decisions.			
o Implement the cube on SSAS.			
o Create two reports for the selected stakeholder.			
9. **Installation and Configuration Document for Data Mining Tools**	**4**	**20**	
o Install and configure data mining tools.			
o Create one data extraction and analysis routine for the selected stakeholder.			
o Conduct a three-day training/workshop on data mining and analytics tools.			
10. **First Support Report**	**12**	**15**	
o Support CITO in the creation of a new data mart.			
o Enhance the data warehouse.			
o Assist in report design and the use of data mining and analytics tools.			
11. **Second Support Report**	**12**	**15**	
o Support CITO in the creation of a new data mart.			
o Enhance the data warehouse.			
o Assist in report design and the use of data mining and analytics tools.			
12. **Third Support Report**	**12**	**15**	
o Support CITO in the creation of a new data mart.			
o Enhance the data warehouse.			
o Assist in report design and the use of data mining and analytics tools.			

Total	81	193

5. QUALIFICATIONS AND EXPERIENCE

Academic and Education Qualification: (submit relevant attestations)

- Minimum of a Bachelor's degree in Computer Science, Information Systems, Information Technology, Data Science/Data Analytics, or a related field.
- Master's Degree in Computer Science, Information Systems, Information Technology, Data Science/Data Analytics or related field will be considered an asset.

General Work Experience:

- Minimum of twelve (12) years' experience in the field of information technology.

Specific Experience:

- Minimum of ten (10) years of proven experience in the design and implementation of data warehouse solutions.
- Minimum of five (5) years' experience in developing or designing data architectures.
- Mimumun of five (5) years' experience in Extract, Transform, Load (ETL) development.
- Demonstrated experience in at least two (2) projects leading or supporting the design and development of data warehouses and related components such as data marts, OLAP cubes or reporting tools for government financial management systems is required.
- Experience working within the public sector is required.
- Experience in configuring and implementing reporting and analytics platforms using Power BI or similar tool will be considered an asset.
- Experience working in Latin America or the Caribbean would be an asset.

Desired Skills, Knowledge, and Abilities

Candidate must possess:

- Proven proficiency in Microsoft SQL Server and its associated tools, including SSIS (SQL Server Integration Services), SSRS (SQL Server Reporting Services), SSAS (SQL Server Analysis Services), and SSMS (SQL Server Management Studio).
- Strong understanding of data governance frameworks, metadata management, and information security best practices is required.
- Demonstrated ability to transfer knowledge through training, documentation, and collaborative technical support.
- Familiarity with digital transformation processes in public institutions, including integration with existing government systems.

Applicants are encouraged to ensure that the materials submitted are comprehensive and tailored to demonstrate their capacity to fulfil the objectives of this Terms of Reference.

6. <u>REPORTING RESPONSIBILITY</u>

The consultant will report directly to the MOF's designated project manager and will work closely with CITO technical staff to ensure seamless implementation.
Regular progress updates and review meetings will be required.

7. <u>PAYMENT SCHEDULE</u>

Estimated budget for consultancy is US$154,400 and includes consultancy rate, travel tickets (4 – trips to Belize) and per diem.

Deliverables	Period weeks	% of Total Budget	Payments
1. A comprehensive work plan outlining activities, deliverables, and timelines.	1	5	7,720
2. **Data Governance & Strategy** o Data governance Model - Develop a model including clarity on roles and responsibilities, specifically, who will be accountable for data quality, access control, classification, and metadata management. A clear delineation between data owners, custodians, and stewards will be essential to ensuring operational alignment. o Data Sharing Strategy - Develop a strategy to support ministries and agencies in developing formal data sharing agreements, such as MOUs or SLAs, that set expectations around data lifecycle policies such as retention, archival, and disposal of data stored in the warehouse.	3	10	15,440
3. **Architecture & Configuration Documentation** o Data Warehouse Deployment Architecture Document for TEST and PROD Environments - Develop a deployment architecture document including servers, networks, software, and connectivity details. o Prepare activities such as server provisioning, network configuration, Active Directory configurations, and Git repository configurations.	11	15	23,160

o Data Warehouse Configuration Manual for TEST and PROD Environments o Configure SQL Server to support data warehousing operations and integrate with Active Directory for centralized authentication. o Implement SQL Server and SQL Server Integration Services (SSIS) for ETL processes, Master Data Services (MDS), SQL Server Analysis Services (SSAS) for OLAP and data mining, SQL Server Reporting Services (SSRS), SQL Server Management Studio (SSMS), and Power BI. o Deliver an installation and configuration manual.			
4. Design & Implementation Phase 1 o Data Mart and Data Warehouse Design Document and Source Code **-** Design the first data mart and the first data warehouse, including implementation in both environments. o Implement the ETL processes to populate the data mart and data warehouse, including source code and automation configuration.	**12**	**20**	**30,880**
5. Metadata, Training & Stakeholder Reports o Master Data Management and Metadata Definition Implementation Document - Create and publish the metadata catalog primary entities (MDS). o Design and ETL Development Training Material - Conduct a two-day training/workshop on the design and implementation of ETL processes and automation. o Report and Analysis Design Document and Source Code for the Selected Stakeholder - Design a cube for the selected stakeholder needs, including a document with the design and decisions. o Implement the cube on SSAS. o Create two reports for the selected stakeholder.	**14**	**20**	**30,880**
6. Data Mining Tools Setup o Installation and Configuration Document for Data Mining Tools - Install and configure data mining tools. o Create one data extraction and analysis routine for the selected stakeholder. o Conduct a three-day training/workshop on data mining and analytics tools.	**4**	**10**	**15,440**
7. Advanced Analytics & Ongoing Support o Support CITO in the creation of a new data mart. o Enhance the data warehouse.			

○ Assist in report design and the use of data mining and analytics tools.			
First Support Report	**12**		**10,293.33**
Second Support Report	**12**	**20**	**10,293.33**
Third Support Report	**12**		**10,293.34**
Total	**81**	**100**	**154,400**

8. **DURATION**

The consultancy is expected to be for a period of eighteen (18) months. This will include six (6)-month implementation phase followed by 12 months' support.

9. **CRITERIA FOR SELECTION**

The selection for this contractual position will be in accordance with the procedures set out in the Inter-American Development Bank: Policies for the Selection and Contracting of Consultants financed by the Inter-American Development Bank GN-2350-15 and the Government of Belize policies and best practices and is open to all eligible candidates as defined in the policies. The Consultants will be selected based on qualifications including a positive professional reference check.

10. **APPLICATION PROCEDURES**

Applications should be submitted in the English language before or on **August 21, 2025, 10:00 a.m. (Local Belize Time). Late applications will not be accepted.** Please note that the required application template should be utilized. The Template can be obtained online at https://procurement.gov.bz/opportunities/.

Applications should be submitted in one (1) pdf document via email to procurement@ceu.mof.gov.bz or three (3) hardcopies to the below address:

Trudy Joseph
Procurement Specialist
Central Executing Unit
Ministry of Finance
2nd floor Sir Edney Cain Building
Belmopan, Belize

Ref: Data Warehouse Expert - BL-L1038- Your name