

**STATE OF MICHIGAN
ENTERPRISE PROCUREMENT**

Department of Technology, Management, and Budget
525 W. ALLEGAN ST., LANSING, MICHIGAN 48913
P.O. BOX 30026 LANSING, MICHIGAN 48909

CONTRACT CHANGE NOTICE

Change Notice Number 2

to

Contract Number 071B5500110

CONTRACTOR	Pricewaterhouse Coopers, LLP
	300 Madison Ave.,
	New Yrk, NY 10017
	Todd Hoffman
	917-664-6188
	todd.hoffman@us.pwc.com
	*****6736

STATE	Virginia Hambric	DTMB-IT
	517-241-9617	
	hambricv@Michigan.gov	
	Jarrod Barron	DTMB
	(517) 284-7045	
	barronj1@michigan.gov	

CONTRACT SUMMARY				
EIM IMPLEMENTATION SRVCS FOR DTMB CSS ST				
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW	
June 17, 2015	June 16, 2018	3 - 1 Year	June 16, 2018	
PAYMENT TERMS		DELIVERY TIMEFRAME		
		In accordance with original contract and statement of work		
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING	
<input type="checkbox"/> P-Card	<input type="checkbox"/> Direct Voucher (DV)	<input type="checkbox"/> Other	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS				
In accordance with original contract and statement of work				
DESCRIPTION OF CHANGE NOTICE				
OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
<input type="checkbox"/>	NA	<input type="checkbox"/>	NA	June 16, 2018
CURRENT VALUE	VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE		
\$3,000,000.00	\$395,360.00	\$3,395,360.00		
DESCRIPTION				
Effective January 11, 2017, the implementation of Phase I Enterprise Information Management Program for MDOT and Treasury. Phase I of this contract is hereby incorporated in accordance with the attached Statement of Work (SOW). All other terms, conditions, specifications and pricing remain the same, per Contractor, Agency and DTMB Procurement agreement.				



STATE OF MICHIGAN ENTERPRISE PROCUREMENT

Department of Technology, Management, and Budget
525 W. ALLEGAN ST., LANSING, MICHIGAN 48913
P.O. BOX 30026 LANSING, MICHIGAN 48909

CONTRACT CHANGE NOTICE

Change Notice Number 1
to
Contract Number 071B5500110

CONTRACTOR	Pricewaterhouse Coopers, LLP
	300 Madison Ave.,
	New Yrk, NY 10017
	Todd Hoffman
	917-664-6188
	todd.hoffman@us.pwc.com
	*****6736

STATE	Program Manager	Hambric, Virginia	Agency Acronym
		517-241-9617	
		hambricv@Michigan.gov	
	Contract Administrator	Chris Mitchell	DTMB
		(517) 284-7016	
		MichelC@michigan.gov	

CONTRACT SUMMARY				
DESCRIPTION: EIM Implementation Svcs for DTMB CSS ST				
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW	
June 17, 2015	June 16, 2018	3 - 1 Year	June 16, 2018	
PAYMENT TERMS		DELIVERY TIMEFRAME		
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING	
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
MINIMUM DELIVERY REQUIREMENTS				
DESCRIPTION OF CHANGE NOTICE				
OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
<input type="checkbox"/>		<input type="checkbox"/>		
CURRENT VALUE		VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE	
\$2,000,000.00		\$ 1,000,000.00	\$3,000,000.00	
DESCRIPTION: Effective June 21, 2016 the implementation of Phase II of this Contract is hereby incorporated with an increase of \$1,000,000.00 in accordance with the attached Statement of Work (SOW) and quote; and as approved by Agency, DTMB Procurement and the State Administrative Board 6/21/2016.				
All other items, prices, terms and conditions remain unchanged.				



**MICHIGAN DEPARTMENT OF TECHNOLOGY,
MANAGEMENT AND BUDGET
IT SERVICES
STATEMENT OF WORK**

Project Title: EIM Implementation Services (Phase 2)	Period of Coverage: 6/21/2016 - 5/31/2017
Requesting Department: DTMB – CSS / EIM	Date: 1/1/2016
Agency Project Manager:	Phone:
DTMB Project Manager: Virginia Hambric	Phone: 517-241-9617

Brief Description of Services to be provided:

NOTE:

This Statement of Work (SOW) describes Phase 2 of the Enterprise Information Management (EIM) project. This SOW is the first Contract Change Notice (CCN) to Contract #071B5500110 between the State of Michigan and PricewaterhouseCoopers (PwC).

BACKGROUND:

EIM is an improved way of managing vast and valuable state information assets. EIM is important because citizens should see and expect one state government, despite the fact that government decisions increasingly require more types of data from multiple and diverse government agencies. Citizens should have one central entry point to the State to see all types of services and program information in which they are interested. EIM is necessary to do this. A well-implemented EIM strategy will enable:

1. Improved analysis and reporting, such as:
 - Cross-departmental enterprise data analysis leading towards better planning and budgeting
 - Validation of program effectiveness across agencies
 - Evidence-based policy making
 - Data and information-based management to reduce duplication, fraud and processing errors
 - Financial management to improve investment decisions and revenue collection and allocation.
2. Improved operations, such as:
 - Digital government services such as single sign-on for citizens and businesses to access all
 - state account information (driver information, vehicle registration, tax information, benefits)
 - through one portal via a smart device or desktop computer
 - Open government for citizen access to records and statistics
3. Ability to meet critical needs of citizens, businesses, and public interests, such as:
 - Continuum of student, teacher, and school education data from pre-school through graduate school
 - Access to healthcare data, including information on benefits, cost, and availability
 - Workforce and economic development data to create strategic, targeted, and systemic responses to economic conditions and labor market changes
 - Multiple entry points to social services and subsequent provision and coordination of services
 - Law enforcement data to improve state and community security, responsiveness, and better
 - Management of State assets

Based on Executive Directive 2013-1, in 2014 the initial EIM project established organizational processes and the framework necessary to implement a successful EIM program. In 2015 (Phase 1 of the EIM



Implementation Services contract with PricewaterhouseCoopers) the project identified enterprise solutions, developed proofs of concept, and created actionable department-specific roadmaps. Current efforts (Phase 2 of the EIM Implementation Services contract with PwC) focus on pilots and statewide implementation.

All State departments are engaged and have identified a Chief Data Steward. A Steering Committee of ten departments is leading the effort, including:

1. Department of Health and Human Services (DHHS)
2. Talent and Investment Agency (focus on Unemployment Insurance Agency)
3. Treasury
4. Michigan Department of State (MDOS)
5. Michigan Department of Education (MDE)
6. Center for Education Performance Information (CEPI)
7. Michigan Department of Transportation (MDOT)
8. Michigan Department of Natural Resources (MDNR)
9. Michigan State Police (MSP)
10. Michigan Department of Insurance and Financial Services (DIFS)

PROJECT OBJECTIVE:

In 2016 the EIM program will establish key enterprise services, onboard pilot agencies to the EIM platform, and communicate the EIM value proposition to various stakeholders with the objective of increased organizational adoption.

The EIM program will show tangible results and measurable value in the following program elements:

1. Identity Master (Im)
2. Location Master (Lm)
3. Data Sharing (Ds)
4. Business Glossary (Bg)
5. Program Management, Organizational Change Management, and Communication

SCOPE OF WORK:

The Contractor will work closely with the EIM program team and Steering Committee throughout this project. PwC will assist the SoM EIM team with implementation oversight, technical project management, Master Data Management (MDM) enterprise architecture, change management, communication, and marketing for EIM services. PwC will continue to offer strategic guidance for the overall EIM solution vision and partner with state resources to ensure timely enablement and quality of service delivery.

Activities include:

1. DHHS MPI elevated to Statewide Identity Master platform – establishment of collaborative governance
2. Citizen data integrated across Health Human Services, Education, Workforce Development
3. Master Address Repository and geocoding services established and enabled
4. Cleansed reliable geocoded address data made available for Bureau of Elections (and one other department)
5. Enterprise DSA Automation and DSA Repository services enabled
6. Workflow automation tool for cross-departmental data share agreements rolled out to select departments
7. Blanket agreements initiated for select departments (DSA reduction initiative)
8. EIM Framework and guidelines released for statewide data classification
9. Data Inventory established for all departments
10. Data Classification initiated across departments with new guidelines



11. Business Glossary platform enabled and initiated for select departments
12. EIM Data Governance org structure established in all departments
13. Initiate and operationalize Enterprise Open Data Services
14. Leverage current geospatial user group to further strengthen geospatial capabilities for all departments
15. Possible pilot for self-service BI and data visualization tool
16. Further discovery for Im (traffic fatality)

TASKS:

1. Identity Master (Im)

- a. Elevate DHHS MPI to Enterprise Identity Master Platform – establish common governance
 - Assist SoM EIM project team in scaling the existing MPI solution to a statewide platform
 - Define a project governance and oversight model that enables the current MPI team and EIM Identity Master teams to execute in collaboration
 - Determine structure of the merged team including architecture, technical and project management staff. Create joint operating model (for example governance structure, budget and timeline, implementation plan, escalation paths etc.)
 - Conduct collaborative planning with MPI team. Plan sequenced implementation activities for the next 16 months to enable onboarding of the new department data sources.
 - Assist with communication and change management activities. (Potential rebranding and stakeholder communication)
- b. Implementation oversight for onboarding new department sources*
 - Provide expert MDM technical assistance, design and implementation oversight for onboarding of new departments
 - Design and establish data governance and stewardship model for the new departments
 - Provide oversight and guidance regarding best practices for data profiling, data quality assessment, functional testing and user acceptance testing as relates to Master Data Management.
 - Provide implementation oversight for initial data load , data migration, data cleansing and management of fall-outs

*Note: The State (DTMB or departments) will provide implementation staff required to execute on the service development or integration

c. Identity Master Onboarding Implementation Tasks

- i. Engagement and Stewardship
 - Engage with EIM team to receive more granular detail on Identity Master solution and integration plans
 - Fill and empower Identity Master Data Steward role
 - Identify initial onboarding engagement model with EIM team and initiate DSA requests using latest solution
 - Build upon EIM stewardship model to determine ongoing department-specific responsibilities
 - Have Identity Master Data Steward communicate new policies and procedures around identity data
- ii. Interface Design & Testing
 - Outline high-level and detailed-level interface design (batch mode or real-time)
 - Determine source to target data fields mapping
 - Complete data profiling and data quality assessment of source data
 - Document profiling findings for interface design
 - Perform functional testing for validation of core requirements



- Design data load and migration from source to Identity Master platform
- Provide feedback on solution functionality, usability, and processes/protocols
- iii. Integration & Data Load
 - Extract creation - provide data from respective source systems to Identity Master platform (MPI)
 - Participate in system interaction and service calls
 - Cleanse and upload data into testing platform
 - Engage in data load cycles with EIM team for fallout and conflict resolution
 - Execute data load iterations in test and production environments
 - Test for validity of matches between cross-department person data sets
 - Test data load and batch interface performance
 - Complete resolution of fall-outs and cleansing of data in source

2. Location Master (Lm)

- a. Implementation oversight for pilot release of Location Master
 - Partner with DTMB resources to develop the pilot solution – assist as necessary in progressing the implementation forward, engage in design, implementation decisions, project management. Provide expert MDM technical assistance and oversight for establishing the location master services.
- b. Department engagement and onboarding new sources*
 - Provide expert MDM technical assistance and oversight to the DTMB GIS team for onboarding of new departments
 - Assist with stakeholder communication, business analysis and requirements activities with the department personnel
 - Architecture, design and implementation oversight for building new interfaces
 - Provide implementation oversight for initial data load , data migration, data cleansing and management of fall-outs
 - Determine stewardship model and engage with department data stewards to train on ongoing operating procedures

*Note : The State (DTMB or departments) will provide implementation staff required to execute on the service development or integration

- c. Location Master Onboarding Implementation Tasks
 - i. Engagement & Stewardship
 - Engage with EIM team to receive more granular detail on Location Master solution and integration plans
 - Fill and empower Location Master Data Steward role
 - Participate in location master data stewardship training
 - Have Location Master Data Steward communicate new policies and procedures around Location Master data
 - ii. Interface Design & Testing
 - Determine source to target data fields mapping
 - Participate in application user acceptance testing (UAT)
 - Partner with EIM team to profile source data and assess its quality
 - Document profiling findings for interface design
 - Perform functional testing for validation of core requirements
 - Use implemented Location Master platform, with assistance from EIM PM team
 - Provide feedback on solution functionality, usability, and processes/protocols



- iii. Integration & Data Load
 - Extract creation - provide data from respective source systems to Master Address Repository (MAR)
 - Participate in system interaction and service calls
 - Cleanse and upload data into testing platform
 - Engage in data load cycles with EIM team for fallout and conflict resolution of addresses
 - Execute data load in test and production environments
 - Test data load and batch interface performance
 - Complete resolution of fall-outs and cleansing of data in source
3. Data Sharing (Ds) – This work stream leverages Phase 1 of the project titled “Cross Departmental Data Linkage for Reduction in Traffic Fatalities” as a case study that requires data sharing among the Michigan State Police, Michigan Department of Transportation, Michigan Department of State, and the Department of Health and Human Services.
 - a. Rapid assessment and due-diligence to understand the landscape, the players, the technical objectives and the data integration roadmap as documented in the roadmap.
 - b. Confirmation of prioritized objectives and charter of Phase 1
 - c. Development of a strategy and initial program plan to realize the Phase 1 goals. (Refer to the appendix)
 - d. Development of solution blue-print and long-term roadmap including activities for Phases II-V
 - e. Coordinating work-group meetings with different departments to build upon the existing roadmap
 - f. Determining connection with EIM, MPI or other state programs
 - g. If determined as ‘required’ during initial assessment – aid the creation of a data dictionary so that naming agreements can be determined for all data elements in the resulting system.
 - h. Development of project costs and funding required for the subsequent phases
4. Business Glossary (Bg)
 - a. Provide technical oversight, guidance and solution specifications for the pilot release of the EIM business glossary solution
 - b. Manage Business Glossary and Metadata Management Implementation for select departments by acting as liaison between the product vendor, DTMB shared services and business stakeholders
 - c. Assist departments to onboard onto the enterprise business glossary platform and adopt a standardized approach to managing business terminology, data dictionary, and metadata.

*Note: This activity requires engagement with all state departments. PwC will be responsible for releasing guidelines. The State (DTMB or departments) will provide implementation staff required to execute on the service development or integration
5. Program Management, Organizational Change Management, and Communication
 - a. Solution Strategy and Project Management
 - Assist SoM with management of the overall program delivery through ensuring effective cross work stream communication and coordination.
 - Continue refining the strategic roadmap to take the State of Michigan’s Enterprise Information Program to the next level of maturity
 - Continue building and refining the overall solution architecture and use-case library.
 - b. Service Definition and Communication
 - Define the new EIM service offerings - include service description, cost of onboarding, capability, benefit, value proposition for Identity Master, Location Master, DSA Automation and Business Glossary.



- Develop go-to-market communication and collaterals
- Help market the service offerings to relevant department contacts, GMs, stewards or other relevant stakeholders
- Develop detailed plans, including channels, audiences, content, format, owners, and frequency to guide shorter and longer-term communication

DELIVERABLES:

Workstream	Item	Deliverable Description	Price
Identity Master	1	Design and establish a program governance and oversight model that enables EIM and MPI teams to collaborate on Identity Master implementation roadmap and go-forward rollouts.	\$35,000
	2	Integrate citizen data across Health Human Services, Education, and Workforce Development. (If Education and WDA data is not available, SoM will identify two additional data sources outside of DHHS). Based on WDA-CEPI integration, evaluate data integration process for pilot departments and recommend architectural or governance changes as needed for adding more data sources.	\$90,000
	3	Develop plan (schedule, resources and costs) for moving MPI from DCH to EIM service center.	\$45,000
	4	Engage with departments for further discovery of use-cases and requirements for onboarding to Identity Master platform.	\$45,000
	Workstream Total		
Location Master	5	Establish pilot Location Master solution in alignment with the requirements and design proposed in Phase 1 (development of a production-ready solution); implemented by State and 3rd Party resources.	\$80,000
	6	Design and establish data governance and stewardship model for the pilot department data source integration.	\$25,000
	7	Production go-live and onboarding of Treasury and DTMB data sources to the Lm platform; implemented by State and 3rd party resources. (If Treasury and DTMB data is not available, SoM will identify two additional data sources). Evaluate data integration process for solution pilot and recommend architectural and governance changes as needed for adding more data sources.	\$80,000
	Workstream Total		
Data Sharing	8	Develop comprehensive blueprint, roadmap and cost estimates for MSP's initiative - 'Cross Departmental Data Integration for Reduction of Traffic Crash Fatalities'. Utilize EIM's cross-departmental DSA framework to support MSP's need for cross-departmental data sharing and linkage to enable analysis of Michigan's traffic records data across six core systems: crash, vehicle, driver, roadway, citation & adjudication, and injury surveillance.	\$150,000
Workstream Total			\$150,000
Business Glossary	9	Establish pilot Business Glossary solution in alignment with the requirements and design proposed in Phase 1; implemented by State and 3rd Party resources. For the pilot solution, onboard one department (to be identified by SoM) to the Bg platform by acting as liaison between the product vendor, DTMB shared services and business stakeholders.	\$150,000
	10	Onboard additional FY'16 Wave 1 departments (to be identified by SoM) onto EIM Business Glossary platform by acting as liaison between the product vendor, DTMB shared services and business stakeholders. In the absence of data sources to be on boarded, produce detailed implementation-ready material (design, operating procedure, MDM specific best practices).	\$20,000



	11	Establish state wide data asset inventory in collaboration with Chief Data Stewards. Developing guidelines, framework execution plan for the exercise.	\$50,000
	12	Establish state wide data classification in collaboration with Chief Data Stewards. Developing guidelines, framework and execution plan for the exercise.	\$65,000
	Workstream Total		\$285,000
Organizational Change & Communication	13	Develop of marketing materials that outline the EIM service offerings including service description, cost of onboarding, capability, benefit, value proposition for Identity Master, Location Master, DSA Automation and Business Glossary services. Develop of department specific material to enable Data Stewards and BRMs to communicate value of the services to the departments.	\$60,000
	14	Identify and establish of operational metrics and KPIs that measure effectiveness of the EIM program (including scorecards, dashboards). This activity will be prioritized.	45,000
	15	Develop and deliver of detailed communication plans, including channels, audiences, content, format, owners, and frequency to guide shorter and longer-term communication.	\$60,000
	Workstream Total		\$165,000
GRAND TOTAL			\$1,000,000

- **ACCEPTANCE CRITERIA:**
 - See detail in section 1.104 Work and Deliverables within Contract #071B5500110
- **PROJECT CONTROL AND REPORTS:**
 - See detail in section 1.104 Work and Deliverables within Contract #071B5500110
- **SPECIFIC DEPARTMENT STANDARDS:**
 - See detail in section 1.104 Work and Deliverables within Contract #071B5500110
- **PAYMENT SCHEDULE:**
 - See detail in section 1.104 Work and Deliverables within Contract #071B5500110
- **EXPENSES:**
 - See detail in section 1.104 Work and Deliverables within Contract #071B5500110

PROJECT CONTACT:

Virginia Hambric
 DTMB, EPMO
 517-241-9617
 HambricV@michigan.gov

AGENCY RESPONSIBILITIES:

Reserved

LOCATION OF WHERE THE WORK IS TO BE PERFORMED:

See detail in section 1.104 Work and Deliverables within Contract #071B5500110

EXPECTED CONTRACTOR WORK HOURS AND CONDITIONS:

See detail in section 1.104 Work and Deliverables within Contract #071B5500110

Price Quote form PWC





STATE OF MICHIGAN
 DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
 PROCUREMENT
 P.O. BOX 30026, LANSING, MI 48909
 OR
 525 W. ALLEGAN, LANSING, MI 48933

NOTICE OF CONTRACT NO. 071B5500110
 between
THE STATE OF MICHIGAN
 and

NAME & ADDRESS OF CONTRACTOR	PRIMARY CONTACT	EMAIL
Pricewaterhouse Coopers, LLP (PwC) 300 Madison Ave., 24th Floor New York, NY 10017	Todd Hoffman	Todd.Hoffman@us.pwc.com
	PHONE	VENDOR TAX ID # (LAST FOUR DIGITS ONLY)
	(917) 664-6188	-6736

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
PROGRAM MANAGER	DTMB EPMO	Virginia Hambric	(517) 241-9617	hambricv@michigan.gov
CONTRACT ADMINISTRATOR	DTMB Procurement	Christine Mitchell	(517) 284-7020	Mitchellc4@michigan.gov

CONTRACT SUMMARY

DESCRIPTION: Enterprise Information Management (EIM) Implementation Services for DTMB CSS - Statewide			
<u>INITIAL TERM</u>	<u>EFFECTIVE DATE</u>	INITIAL EXPIRATION DATE	<u>AVAILABLE</u> OPTIONS
3 Years	6/17/2015	6/16/2018	3, 1-yr Options
PAYMENT TERMS	F.O.B.	SHIPPED TO	
Net 45	Destination	NA	
<u>ALTERNATE PAYMENT OPTIONS</u>			<u>EXTENDED</u> PURCHASING
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
NA			
MISCELLANEOUS INFORMATION:			
This contract has been awarded based on the competitive Request for Proposal No. 007115B0004087.			
ESTIMATED CONTRACT VALUE AT TIME OF EXECUTION:		\$2,000,000.00, The full amount approved by the State Administrative Board is: \$2,400,621, but the amount included in the Contract as available for Purchase Order is the FY 2015 budgeted amount only.	

For the Contractor:

**Todd Hoffman, Partner PwC ,
Contract Administrator**


Date

For the State:

**Sharon Walenga - Maynard,
Sourcing Director, DTMB Procurement
State of Michigan**

Date



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Exhibits

- Exhibit A – Pricing
- Exhibit B – Phase II Preliminary Proposed Solution

Appendices

- Appendix A – EIM Organizational Processes
- Appendix B – EIM Communication and Organizational Change Management Plans
- Appendix C - AICPA Code of Conduct



Article 1 – Statement of Work (SOW)

1.000 Project Identification

1.001 Project Request

Under Executive Directive 2013-1, the State of Michigan (State) must establish and implement an Enterprise Information Management (EIM) program. The goal of EIM is to improve operational efficiency, promote transparency, and enable customer-centric service delivery.

Phase I Deliverables are described in Section 1.104 below. Phase I includes seven work streams covered by this contract, along with a reserved bank of hours available to address immediate implementation opportunities.

After satisfactory completion of Phase I, the State will ask the awarded Contractor to submit an updated proposal for Phase II. Based on the updated Phase II proposal and an assessment of the results of Phase I, the State will determine its next step, which may be to: (1) issue a Contract Change Notice to continue and complete Phase II through the existing contract; (2) post a new RFP for Phase II; (3) or complete Phase II through some other mechanism.

Phase I must be completed by December 31, 2015.

If Phase I brings to light implementation activities which could be completed quickly without adversely affecting other work streams, a bank of hours has been set aside to be utilized at the fixed hourly rates for concurrent completion. If such an opportunity presents itself, the State may opt to issue a change notice to the contract to cover such work.

1.002 Background

EIM is an improved way of managing vast and valuable state information assets. EIM is important because citizens should see and expect one state government, despite the fact that government decisions increasingly require more types of data from multiple and diverse government agencies. Citizens should have one central entry point to the State to see all types of services and program information in which they are interested. EIM is necessary to do this. A well-implemented EIM strategy will enable:

1. Improved analysis and reporting, such as:
 - Cross-departmental enterprise data analysis leading towards better planning and budgeting
 - Validation of program effectiveness across agencies
 - Evidence-based policy making
 - Data and information-based management to reduce duplication, fraud and processing errors
 - Financial management to improve investment decisions and revenue collection and allocation.
2. Improved operations, such as:
 - Digital government services such as single sign-on for citizens and businesses to access all state account information (driver information, vehicle registration, tax information, benefits) through one portal via a smart device or desktop computer
 - Open government for citizen access to records and statistics
3. Ability to meet critical needs of citizens, businesses, and public interests, such as:
 - Continuum of student, teacher, and school education data from pre-school through graduate school
 - Access to healthcare data, including information on benefits, cost, and availability
 - Workforce and economic development data to create strategic, targeted, and systemic responses to economic conditions and labor market changes
 - Multiple entry points to social services and subsequent provision and coordination of services
 - Law enforcement data to improve state and community security, responsiveness, and better management of State assets.



First, the State established a Steering Committee comprised of ten State departments that represent a cross section of state business needs, complexity, size, customers, and degree of data sharing. The ten departments and specific programs are:

1. Department of Human Services (DHS) Food Assistance
2. Unemployment Insurance Agency (UIA), a bureau within the Department of Talent and Economic Development
3. Treasury
4. Michigan Department of State (MDOS)
5. Michigan Department of Community Health (MDCH) Medicaid
6. Michigan Department of Education (MDE)
7. Center for Education Performance Information (CEPI)
8. Michigan Department of Transportation (MDOT)
9. Michigan Department of Natural Resources (MDNR)
10. Michigan State Police (MSP)

The Steering Committee then established foundational components of the EIM program, which will be expanded to all State departments in 2015. The foundational components include:

1. Organizational processes
 - a. Data governance framework and model (Appendix A)
 - b. Definitions and common terminology (Appendix A)
 - c. Key roles and responsibilities (Appendix A)
 - d. Program guiding principles (Appendix A)
 - e. Governing board charters at the enterprise, department, and project levels (Appendix A)
 - f. Communication plan (Appendix B)
 - g. Organizational change management plan (Appendix B)
 - h. Baseline program metrics (Appendix A)
2. Legal framework
 - a. Data Sharing Agreement (DSA) template
 - b. Guidance and process for using the template
3. Technology infrastructure
 - a. Preliminary analysis of technology enablers related to EIM
 - b. Preliminary inventory of tools, software, and systems that the State already owns and processes already implemented that may be leveraged for EIM purposes

Now, this project focuses on implementing the EIM foundation established by the Steering Committee in 2014, including organizational processes, requirements definition, and recommendations for technology enablers.

Note that the State believes that it already owns the technology needed to implement key components of the EIM program. However, this project may include procurement of hardware, software, or tools as an OPTIONAL use component. If the State opts to procure hardware, software, or other tools from the Contractor, the parties will negotiate a Change Notice to add those components. The State reserves the right to utilize currently owned technology, applications and licenses as well as purchase from existing contracts to meet any new technology requirements for this project.

1.100 Scope of Work and Deliverables

1.101 In Scope

The Contractor will work closely with the EIM program team and Steering Committee throughout this project.

This project involves services related to each of the three foundational components listed above.



I. Organizational Processes

Implementation of organizational processes requires organizational culture and behavior change. The ten Steering Committee departments are currently in various stages of implementing the organizational processes. The Contractor must first work with Steering Committee departments and then subsequently with remaining State departments to ensure consistency of adoption and operations across all departments. A list of all State departments is available here: http://www.michigan.gov/som/0,1607,7-192-29701_29702_30045---,00.html

Relying on and potentially enhancing the communication plan and organizational change management plans, Contractor must work with the EIM program team, department executives, Chief Data Stewards, and Data Stewards to implement the EIM organizational processes. Implementation may involve discovery and analysis of each department's EIM maturity level and recommendations for workshops and training sessions. Development and delivery of such workshops and training sessions is in scope. The goal is to institutionalize EIM organizational processes across all State departments.

II. Legal Framework

Development and use of a template Data Sharing Agreement (DSA) is a key foundational component and a major step forward for the EIM program. The Contractor must provide enterprise requirements for an automated solution to create, track, and report on DSAs. The Contractor must evaluate the tools the State already uses that could potentially be leveraged for EIM and make recommendations for implementation of an automated DSA solution.

III. Technology Infrastructure

As stated above, EIM is an initiative predominantly driven by the business. However, technology supports and enables the business vision and plays a key role in realizing benefits. This project includes the following technology related components to support organizational processes:

- Enterprise data architecture: Contractor must develop a master data architecture, Business Intelligence (BI) strategy, and a technology roadmap. Contractor must define data architecture, evaluate technology currently in use in the state, and develop a technology roadmap for enterprise master data and future BI/analytics capability enablement. Contractor must evaluate shared master data domains such as roads, businesses, locations, bridges and other assets, identify potential mastering needs, and suggest Master Data Management (MDM) implementations and governance processes. The Contractor must also evaluate current BI and data warehouse landscape and create a holistic future architecture roadmap for EIM.
- Enterprise business glossary: Contractor must define requirements for an enterprise business vocabulary and data source lineage system, including services for authoring and sharing business metadata. This component includes evaluation of tools the State already uses that could potentially be leveraged for an enterprise solution as well as recommendations for implementation of an enterprise business glossary.
- Enterprise Master Data Management for Personal and Business Identity: Contractor must define requirements for a master data management solution for uniquely identifying citizens and businesses which provides a 360 degree view across State department personas such as student, driver, beneficiary, claimant, recipient, taxpayer, licensee, or service provider. Evaluate current tools and solutions that the State already uses for potential expansion to the enterprise level and provide recommendations for implementation.
- Enterprise Master Data Management for Location, including Addresses: Contractor must define requirements for a master data management solution for location and address, including both address cleansing and geospatial visualization. Evaluate existing Michigan Geographic Framework Editing Environment (MGFEE) for expansion to an enterprise level location master which will act as the single authoritative source of truth for consumption by departmental systems.

Reserved Bank of Hours – A bank of 2,080 hours has been reserved for additional work identified during each work stream or phase. These hours will be accessed as needed via issuance of a change notice incorporating the associated scope of work.



A more detailed description of the services and Deliverables for this project is provided in Section 1.104, Work and Deliverables.

This project may include procurement of hardware, software, or tools as an OPTIONAL use component.

1.102 Out Of Scope

IT processes and systems unrelated to EIM are out of scope.

1.103 Environment

The links below provide information on the State's Enterprise Information Technology (IT) policies, standards and procedures which includes security policy and procedures, eMichigan web development, and the State Unified Information Technology Environment (SUITE).

The State has methods, policies, standards and procedures that have been developed over the years. Contractors are expected to provide proposals that conform to State IT policies and standards. All services and products provided as a result of this RFP must comply with all applicable State IT policies and standards. Contractor must review all applicable links provided below and state compliance in their response.

Enterprise IT Policies, Standards and Procedures:

http://michigan.gov/dtmb/0,4568,7-150-56355_56579_56755---,00.html

All vendor proposals, services, and products must conform to State IT policies and standards located [here](#). If a vendor is awarded a contract, DTMB will provide additional policy information as may be necessary.

Software and hardware provided by the Contractor (if any) must be compatible with DTMB's Standard Information Technology Environment. Non-standard development tools may not be used unless approved in writing by DTMB.

Any change to DTMB's Standard IT Environment must be approved in writing by the DTMB and the State's Project Manager before work may proceed based on the changed environment.

Enterprise IT Security Policy and Procedures:

The State's security environment includes:

- DTMB Single Login,
- SQL security database,
- Secured Socket Layers, and
- RSA SecurID.

Look and Feel Standard

All software items provided by the Contractor must be ADA complaint and adhere to the Look and Feel Standards, found at: www.michigan.gov/somlookandfeelstandards.

The State Unified Information Technology Environment (SUITE):

Includes standards for project management, systems engineering, and associated forms and templates – must be followed: <http://www.michigan.gov/suite>.

1.104 Work and Deliverables – Phase I

I. Services and Deliverables

All Phase I Services and associated DDeliverables must be completed by December 31, 2015. The following Deliverables are not all inclusive. Contractors may propose other Deliverables.

The services and related DDeliverables are grouped in seven work streams:



- A. Implementation of organizational processes within each of Michigan’s principal State departments and specified agencies
- B. Enterprise data architecture
- C. Enterprise business glossary
- D. Enterprise master data management for individual and business identity
- E. Enterprise master data management for location, including addresses
- F. Enterprise automated solution for data sharing agreements
- G. Analytics strategy
- H. Reserved Bank of Hours

Contractor Approach:

Phase I approach and Time Frame

High-level timeline: Phase I

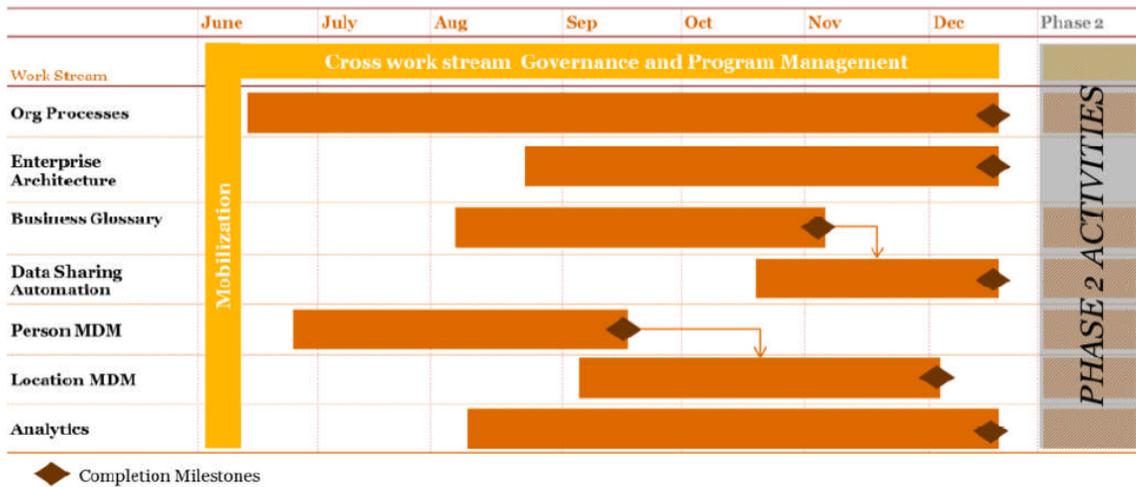


Figure 2

The approach will maintain appropriate level of engagement and focus on each work stream, while managing demand on the key State resources. The same Contractor resources will be engaged throughout the span of the program to preserve history and context.

The first two weeks will be used to mobilize the program, validate the overall approach, align resources, confirm dates and solidify assumptions. Work streams D & E are going to be carried out in sequence, with the same team rolling over from one work stream to the other with some overlap. Similarly, for work streams C and F, there will be significant overlap in the two work streams and the same resource pool will be leveraged with the team rolling over from one to the other in a similar fashion.



Figure 3

14

A project organizational chart is presented below:

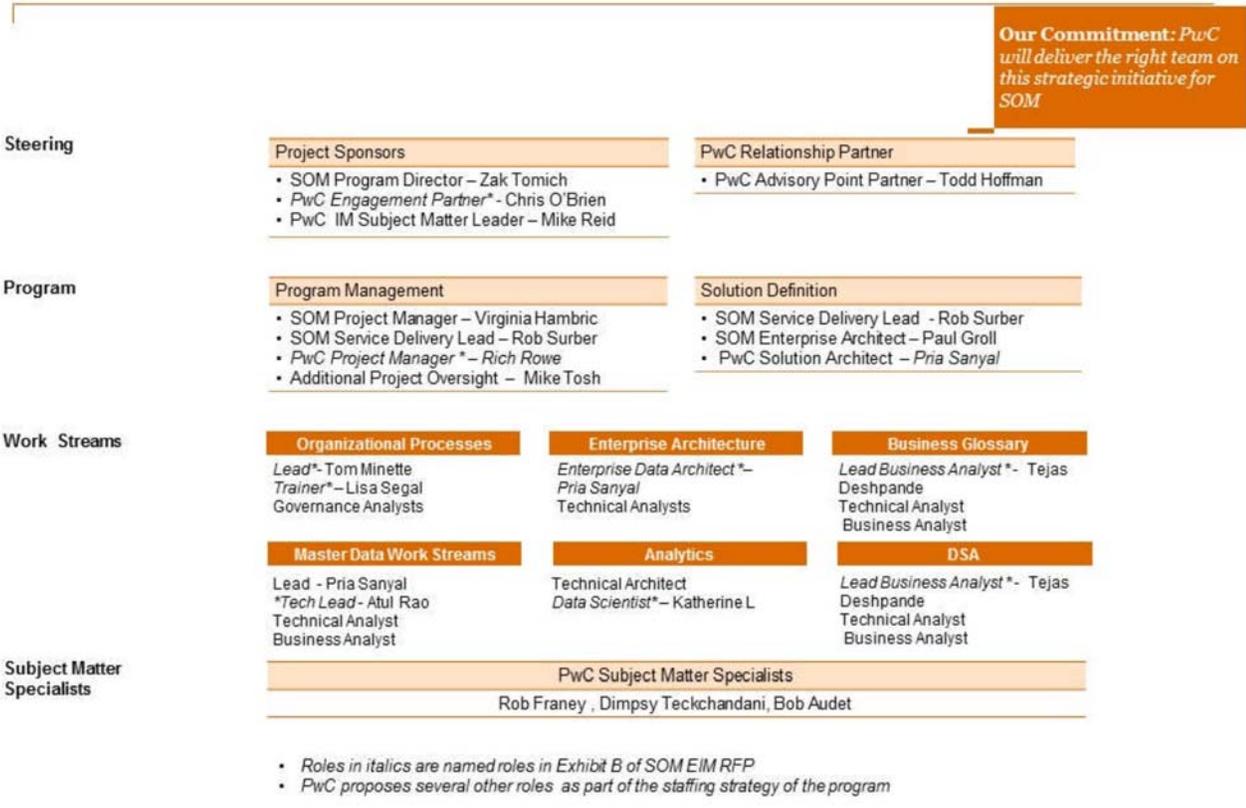


Figure 4

Contractor Assumptions:

During discovery in Phase I, Contractor will work with the State EIM team to validate assumptions.

Phase I

- Contract fixed pricing for Phase I includes Contractor resource hours. Contractor assumes that the State will provide coverage for:



- Costs associated with State FTE hours.
- Procurement costs for a new product, or additional license cost for an existing product.
- Infrastructure cost, installation and setup costs
- FTE/ Contractor hours for installation, setup and environment administration for Phase II implementation activities and/or SOW's assigned to work stream H, the reserved bank of hours.
- Costs incurred by state agencies that may need to integrate upstream or downstream with Person Master, Location Master, Data Sharing Automation, or Business Glossary.

Phase II

- During Phase II, the Contractor will be standing up an enterprise platform for Person and Business Master Data Management (MDM) and establishing a framework and repeatable process that can be leveraged to integrate several data sources and state agencies over time. Towards establishing that platform, the Phase II proposal includes addressing a majority of the State's functional requirements identified during Phase I and integration with a maximum of eight critical systems that will be identified during discovery.
- For Phase II, the Contractor assumes that the State already owns the technology needed to implement key components of the EIM program, and the following work streams are able to leverage an existing State technology platform:
 - Enterprise business glossary
 - Enterprise master data management for individual and business identity
 - Enterprise master data management for location, including addresses
 - The need for procurement of a new technology may introduce significant change in the project approach outlined in the respective work streams.

Phase I Work Stream A - Implementation of Organizational Processes within each State department

Using the foundational components developed by the Steering Committee in 2014, Contractor will facilitate adoption and institutionalization of EIM organizational processes across all State departments. A shared and common understanding of all organizational processes is critical for overall success of the EIM program. Contractor will use the communications plan and organizational change management plan (Appendix B) to assist the EIM program team in rolling out the EIM organizational processes. The goal is to institutionalize EIM organizational processes across all State departments.

All activities will be implemented first with the ten Steering Committee departments, revised as needed, and then rolled out to the remaining principal State departments and specified agencies. Contractor will work with direction from the EIM Director and EIM Project Manager.

Using an industry standard EIM and data governance maturity model, Contractor must assess the maturity level of each department through interviews and other analytic methods. Contractor must identify gaps and develop a roadmap for each department to attain an operational EIM maturity level that uses key organizational processes in a manner that is consistent across all departments. Contractor must provide expert assistance as needed for departments to operationalize EIM organizational processes. It may be possible to group departments at similar maturity levels together for developmental purposes. It may be advisable to develop and deliver customized workshops or training sessions for departments at similar maturity levels, for all Chief Data Stewards, other Data Stewards, or for specific IT and business processes and data standards.

Phase 1 Work Stream A – Deliverables

1. Assessment per State department that includes current EIM maturity level and target level. This assessment will include a review of current EIM related business process initiatives and associated technologies.
2. Actionable roadmap for each department to implement EIM organizational processes necessary to reach target maturity level. Per department, the roadmap should include key activities, an explicit checklist of action items, and timeframes.
3. Enterprise roadmap, including a consolidated project schedule that depicts a statewide perspective for implementing organizational processes across all departments, including key activities, key resources,



and timeframes for reaching the target maturity level. Critical components of the enterprise roadmap are organizational change management, communication, education and marketing.

4. Development and presentation of workshops training sessions, and materials including a dry run for the project team.

Audiences may include:

- Chief Data Steward
- DTMB General Manager (GM)
- DTMB Business Relationship Manager (BRM)
- Data Steward(s)
- Legal/Data share agreement representative
- Security/Privacy Officer
- Good Government Champion
- Other key representatives as needed

Phase 1 Work Stream A - Acceptance Criteria

- Materials must be professional, practical, realistic, informative, and effective
- Roadmaps must be clear and concise
- Deliverables must follow SUITE project management and systems engineering processes
- Deliverables must meet industry standards
- In addition, the high level acceptance criteria for Deliverables listed in Section 1.501 must be met.

Department Points of Contact and the EIM Project Manager have joint responsibility for acceptance of Deliverables 1 and 2.

The EIM Program Director and EIM Project Manager have joint responsibility for acceptance of Deliverables 3 and 4.

Contractor must meet all requirements and provide Deliverables for Work Stream A as described above.

Contractor Approach

Phase I Work Stream A - Implementation of Organizational Processes within each State department

Contractor will deploy this framework to further drill down within the agencies and assess both the current and future states of data governance at the State. Below is an infographic detailing the dimensions the Contractor must use to assess, analyze, and help the State transform its data governance.



Our Data Governance Framework – We will utilize the following dimensions to assess, analyze and transform data governance in an enterprise

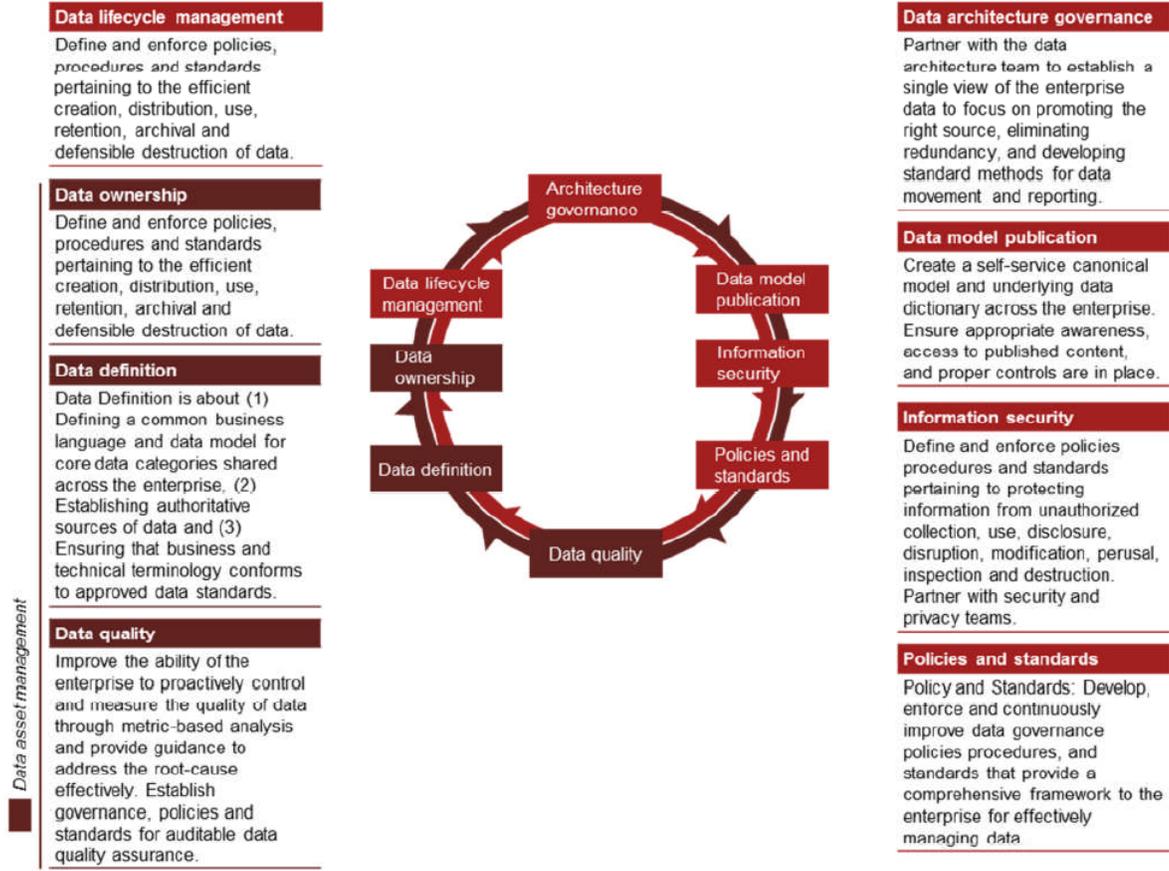


Figure 5

For each state agency, Contractor will:

- Assess findings from the existing artifacts,
- Conduct stakeholder interviews, and
- Conduct a deep-dive engagement with the agencies to develop recommendations.

In work stream A this process will be used to create a baseline understanding, or current state view, of data governance within the agencies.

A sample assessment of one state agency (MDOT) is depicted below:



Maturity level	➡ 1: Initial	➡ 2: Standardized	➡ 3: Managed & predictable	➡ 4: Optimized & improving
<i>Governance processes (2/4)</i>	No data governance processes are in place	Informal governance processes in place to manage changes to data structure, configuration, and data usage ●	Data governance processes are defined, communicated and monitored	Data governance processes are embedded into strategic and operational processes
<i>Executive sponsorship (4/4)</i>	No mandate for data governance from senior management	Individual group leadership realize the importance of data governance to be embedded into processes	Senior Management requires data governance to be embedded into processes	Senior Management fully embraces need for data governance and embeds this requirement into the business goals and corporate values ●
<i>Data ownership (2/4)</i>	Data ownership has not been defined	Data ownership consists of an informal network of owners and stewards ●	Data ownership consists of a formal network of owners and stewards implemented for a subset of data domains	Data ownership consists of a formal network of owners and stewards implemented for all key data domains
<i>Data policies (1/4)</i>	Data policies do not exist ●	Data policies are defined and communicated	Adherence to data policies is enforced/monitored through manual processes	Adherence to data policies is enforced/monitored through automated processes
<i>Data stewardship (2/4)</i>	Data stewardship is done informally	Data stewardship is implemented in a only a handful of process/data areas ●	Data stewardship is implemented across most data areas/process areas/applications	Data stewardship is embedded into all roles and responsibilities for all data users (both consumers and producers)
<i>Organizational structure (2/4)</i>	No data ownership or data maintenance organization has been defined	Basic data ownership and data maintenance organization structure has been defined. Organization meets on an ad-hoc basis ●	Data ownership and data maintenance organization structure has been defined that includes specific roles and responsibilities. Organization meets on a defined periodic basis	Data ownership and data maintenance organization structure has been defined that includes specific roles and responsibilities that have been integrated into formal job descriptions
<i>Training (1/4)</i>	No data maintenance training is provided ●	Informal data maintenance training is provided	Formal data maintenance training is provided	Continuous data maintenance training is provided
<i>Communication (2/4)</i>	No communication regarding data or data issues	Data and data related issues are communicated only to those individuals impacted by the issue ●	Data and data related issues are communicated to all data stakeholders	Data and data related issues are embedded into various corporate communication mediums

Figure 6 ** Dot represents Current Maturity Level**



<i>Maturity level</i>	➡ 1: Initial	➡ 2: Standardized	➡ 3: Managed & predictable	➡ 4: Optimized & improving	
Data management process	<i>Data maintenance processes (1/4)</i>	Informal processes for creating and maintaining data ●	Processes for creating and maintaining data are documented and communicated ●	Processes for creating and maintaining data are periodically updated ●	Processes for creating and maintaining data are flexible to allow for quick changes to be implemented ●
	<i>Data quality processes (2/4)</i>	Data quality is not assessed or monitored ●	Quality of data is baselined ●	Quality of data is periodically assessed ●	Quality of data is continually assessed ●
	<i>Data prioritization (2/4)</i>	Data is not prioritized ●	Key data domains are identified ●	Key data domains are identified and represented in a logical data model ●	Physical data model and logical data models are in alignment ●
	<i>Archiving (2/4)</i>	Data is not archived ●	Dormant data is informally flagged and deactivated ●	Dormant data is formally flagged and deactivated ●	Dormant data is formally archived through the use of technology ●
	<i>Security access (2/4)</i>	Access to data is not sufficiently restricted ●	Access to data is managed at the data domain level and is limited to only those individuals that need to create/maintain data ●	Access to data is managed at the view level and is limited to only those individuals that need to create/maintain data ●	Access to data is managed at the field level and is limited to only those individuals that need to create/maintain data ●
	<i>Security monitoring (2/4)</i>	Access to data is not monitored ●	Access to data is baselined and unauthorized access is identified and investigated ●	Access to data is periodically monitored and unauthorized access is identified and investigated ●	Access to data is continuously monitored and unauthorized access is identified and investigated ●
Standards & definitions	<i>Data standards (2/4)</i>	No data standards in place ●	Data standards are defined and communicated ●	Adherence to data standards is enforced/monitored through manual processes ●	Adherence to data standards is enforced/monitored through automated processes ●
	<i>Data redundancy (3/4)</i>	Redundant data is captured in disparate repositories ●	Data is synchronized across different repositories ●	Central repositories are created at a business unit and/or functional level ●	Central repositories are created at an enterprise level ("single source of truth") ●
	<i>Data definitions (1/4)</i>	Data definitions (dictionary) do not exist or are not available to data users ●	Data definitions are only known within each application and/or business unit and change through informal procedures. Each application/business unit has their own definition. ●	Data definitions are known across applications and/or business units and change through a formal process. Some of the key data domains have a single set of data definitions, but not all. ●	Data definitions are known across applications and/or business units and change through a formal process. All of the key data domains have a single set of data definitions ●
	<i>Metadata (1/4)</i>	Metadata is not captured or managed ●	Metadata is captured and managed in an inconsistent manner and is not available to users ●	Metadata is captured and managed in a centralized manner and is available to all users ●	Metadata is continually reviewed and enhanced to reflect changes to processes and business rules ●

Figure 7 ** Dot represents Current Maturity Level**



	Maturity level	➡ 1: Initial	➡ 2: Standardized	➡ 3: Managed & predictable	➡ 4: Optimized & improving
Technology & architecture	<i>Data quality (1/4)</i>	Manual processes are in place for maintaining data and managing data quality ●	Data quality processes are semi-automated for company managed data maintenance processes	Data quality is embedded into the company managed data maintenance processes	Data quality processes are embedded into non-company managed data maintenance processes
	<i>Master data management (2/4)</i>	Master Data is considered as general purpose; no vision around its value as an enterprise asset	Master Data is recognized as a business enabler; moves from an undervalued commodity to an enterprise asset but there are still limited controls in place ●	Centralized mater data management platform is available at the group/ enterprise level, feeds analytical data marts, or other transactional systems	Master Data Management Technology and processes are under constant improvement, there is significant management support behind MDM initiatives
	<i>Technology (2/4)</i>	Data exists in unconnected databases & spreadsheets using multiple formats & inconsistent definitions, unlinked to processes	Data is stored locally and data quality is reactive to circumstances Most data is integrated point-to-point, not across LOBs ●	System of Records are identified & designated; managed appropriately to support LOB processes & enterprise context	Tools/technology are standardize across the enterprise and continually enhanced as best practices emerge
	<i>Data modeling (2/4)</i>	Data modeling is not done	Limited data modeling is done on a project basis ●	Data modeling is done across business units or process areas	An enterprise data model has been defined Architectural standards reflect streamlined data models
Metrics	<i>Defined metrics (1/4)</i>	No metrics are defined for managing master data ●	Metrics for data quality and data redundancy are defined and measured	Metrics added to monitor other data dimensions (e.g. accuracy, accessibility, data maintenance)	Metrics added to monitor key data controls
	<i>Monitoring metrics (1/4)</i>	Metrics are not measured or monitored ●	Metrics are baselined	Metrics are periodically measured and monitored	Metrics are continuously measured and monitored
	<i>Metrics to performance (1/4)</i>	Metrics are not tied to performance measured ●	Metrics are tied to individual performance	Metrics are tied to team/department performance	Metrics are tied to business unit Performance
Overall score - 44					
Overall Maturity Score	< 25 - Initial	Between 25 and 50 – Standardized	Between 50 and 75 – Managed & Predictable	>75 Optimized & Improving	

Figure 8 ** Dot represents Current Maturity Level**

Contractor will employ a tailor-fitted approach to develop an enterprise roll-out plan and engage with the State agencies. Contractor will build off the EIM Data Governance Framework previously established by the EIM team and begin with a rapid revisit of the foundational elements to identify any nuances that may need to be refined and enhanced at an enterprise level before engaging with the individual departments. In the first few weeks, Contractor will work with the EIM program team to solidify the roll-out approach, sequences, dates and departmental groups for statewide roll-out. During planning, the Contractor will build out the details of agency-specific engagement model for the different State agencies. Figures 9 and 10 below depict steps the Contractor will undertake in the provision of Deliverables.

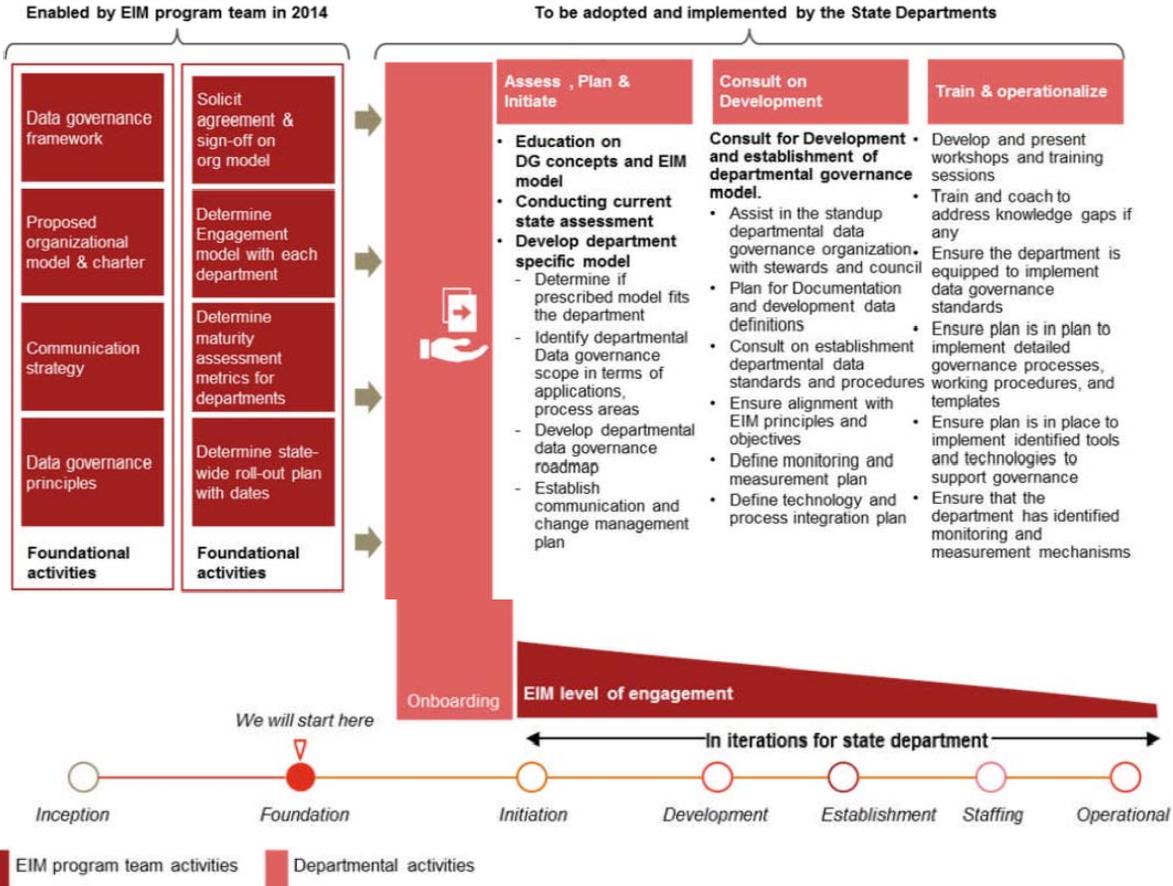


Figure 9



Timeline View for a State-wide roll-out

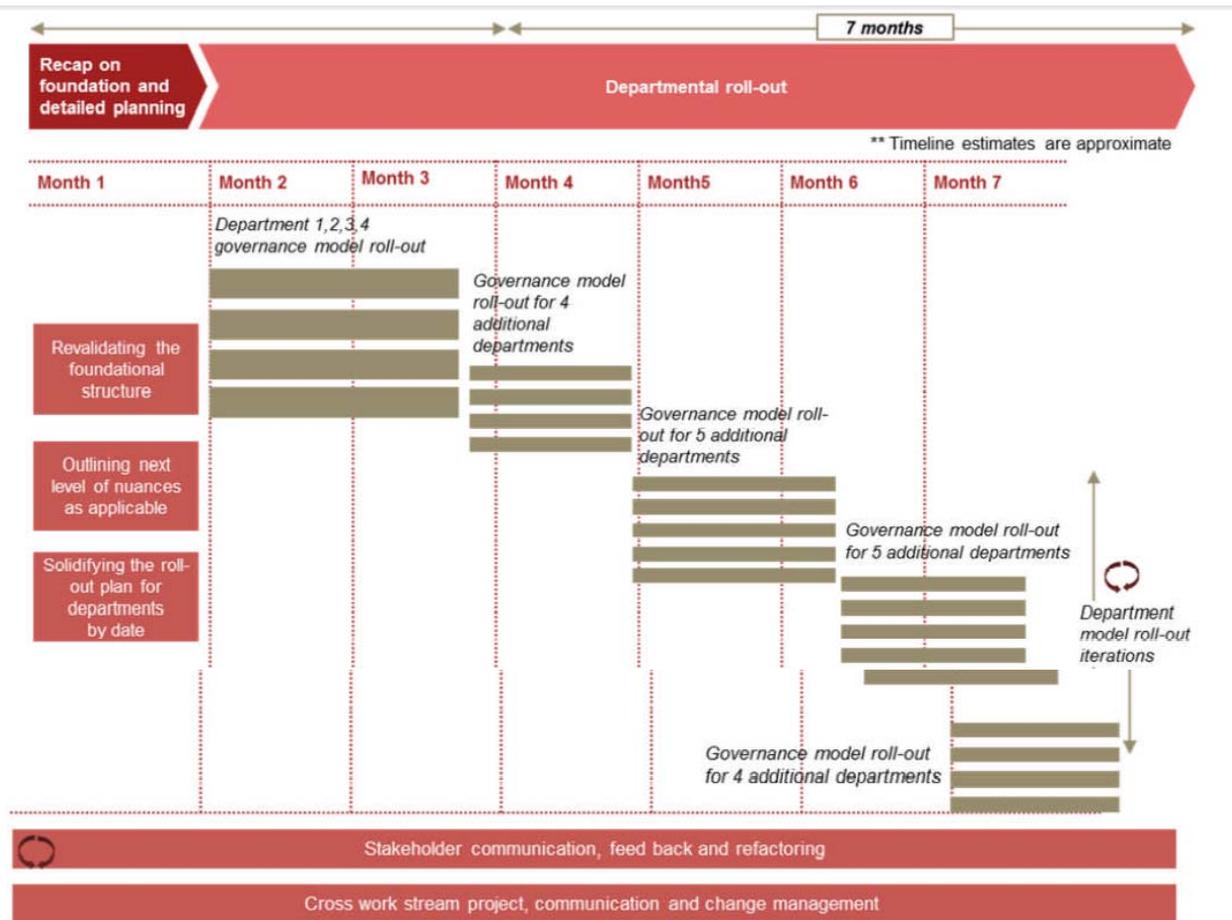


Figure 10

Key items to consider in the context of the approach:

1. This is a conceptual view of how the roll-out approach may look. The detailed plan for engaging with the individual departments will be finalized in the first two weeks.
2. The plan will involve sequence for departments and timelines. It will also take into consideration the complexity and size of the departments, assuming that each roll-out would not require the same amount of time and resources. To optimize the data governance roll-out for the 22 departments, the EIM/Contractor team will collectively evaluate options for efficiency during the planning weeks - like grouping the departments, creating repeatable routines and onboarding packages etc.
3. The roll-out scope covers all departments including those that were part of the initial Steering Committee; although some departments may have the models implemented at varying degrees of alignment.
4. Given the time that has elapsed since the creation of the foundational elements, a lightweight review of the foundational elements will be completed to identify any nuances that may need to be refined and enhanced at an enterprise level before engaging with the individual departments.
5. As confirmed through the revision process; the solution for Work Stream A includes not only the assessment and gap analysis, but also implementation activities for the policies and procedures for all State departments, including the 10 Steering Committee Departments.



Contractor Resource Team - Staffing model to support Work Stream A:

Role	Responsibilities	Staffing
<i>Project Manager/ Lead Strategist</i>	<ul style="list-style-type: none"> Overall responsibility for the work performed by PwC in the governance work stream Attends key meetings, address issues and work with client management and the PwC team to deliver the specified work Supports day-to-day detail design activities and deliverables Acts responsible for project planning, staffing, work assignments, issue resolution, status meetings, and status reports Has in-depth experience in data management and governance program design and implementation initiatives Serves as a subject matter specialist and facilitator across all stakeholder interviews, workshops, and meetings, etc. Bring expertise in designing and building data governance solutions Assist in defining the future state data governance solution leveraging data governance subject matter expertise from past implementations 	PwC personnel (1) SOM personnel (.25)
	<ul style="list-style-type: none"> Develops the overall Data Governance Detailed Design Helps identification of Domains, Elements and Priorities to organize data governance by the individual departments Develops the Implementation Roadmap Per Department Develops the Project Charter, Detail Project Plan Delivers the Project Kick-Off Presentation and the Project Status Report 	
<i>Data Governance Specialist</i>	<ul style="list-style-type: none"> Brings business and technical expertise from data governance engagements Co-facilitate interviews, workshops and working sessions with stakeholders Assist in defining leading practices and standards for future state Data Governance solution leveraging subject matter expertise from past engagements Assist during each step of the engagement Executes day-to-day detail design activities and deliverables Has experience in data management and governance program design and implementation initiatives Participates and co-facilitator across all stakeholder interviews, workshops, and meetings, etc. 	PwC personnel (2)
	<ul style="list-style-type: none"> Bring expertise in designing and building data governance solutions Defines the future state data governance solution leveraging data governance subject matter expertise from past implementations Assists in the overall Data Governance Detailed Design Facilitates identification of Domains, Elements and Priorities to organize data governance by the individual departments Facilitates implementation of Data Governance by the individual departments according to plan 	



Role	Responsibilities	Staffing
<i>Trainer & Change Specialist</i>	<ul style="list-style-type: none"> • Bring training and change management expertise from prior engagements • Assist with the development of change management, communication and training plan • Assist in the design and development of training material for the agency workshops and training sessions • Drive the development and completion of all change management and training work products and deliverables per the project plan and timeline • Assists in identifying criteria for change agents in each department • Develop training materials and facilitates change management meeting and training sessions • Coordinates with SOM change management and communications contacts within each department and the Office of Good Government 	PwC personnel (1)

Figure 11

Phase 1 Work Stream B - Enterprise Data Architecture

As an integral piece of our overall Enterprise Architecture, Enterprise Data Architecture (EDA) provides the model that guides the use and management of data as an asset. It is critical that our EDA supports our business strategy, our vision, and the many lines of business executed by our agencies.

We see EDA as an integrated set of specifications that define strategic data requirements, guides the tactical integration of data assets, and informs long-range investments in data in terms of internal business development, ongoing maintenance of data quality, Master Data Management (MDM) initiatives, and wide-ranging efforts with both internal and external partners to enhance both opportunities and outcomes for sharing data.

EDA plays a key role in the overall delivery of technical value, providing the foundation that bridges the gap between existing infrastructure and the value-adding layers of software development, various analytics, and endpoint services to customers. The meshing of all these elements in concert is the result of optimally leveraging a solid architecture for seamless delivery.

A well-defined EDA is not a stand-alone concept - it becomes a fluid instrument working to shape the interactions with other work streams to drive value from data assets, including the enterprise business glossary, MDM for identity, MDM for location and address, a universal data sharing model, and data transformations and integrations between disparate systems.

Work stream B focuses on an architecture model for optimizing enterprise data governance and data sharing primarily in the realm of software. The State infrastructure model is robust, complete, and not on the table for significant change, so this work stream strives to adapt a loosely-coupled software architecture to our existing infrastructure. The State anticipates using many of the tools and technologies that are already supported in our environment, and expects to supplement that ecosystem only with tools that add significant value and favorable return on investment.

Facets of our infrastructure that support core services include, at a macro-level:

- IP networks
 - Separate, isolated security zones
 - Dedicated security and traffic management devices (firewalls, load-balancers, etc.)
 - Windows servers and services
 - Linux servers and services



SAN-NAS-CAS, etc.
 LDAP (including Active Directory)
 File and print servers and services (large store of unstructured data)
 Multiple endpoints (Windows, Mac, iOS, Android, possibly others)

- Clients
 - Thick
 - Thin
 - Web
 - Mobile (several types)
 - VDI (desktop and apps)
 - Delayed sync for field workers
 - Remote access via IPSEC VPN
 - Others
- Data management - platforms and stacks for structured data
 - Oracle (multiple versions; many licensed tools and helper apps)
 - MS SQL (multiple versions; many licensed tools and helper apps)
 - Teradata (Data Warehouse; many licensed tools and helper apps)
 - MySQL (multiple versions)
 - MS SharePoint
 - Others (varies - FileMaker Pro, Access, XL, etc.)
- Data management - platforms and stacks for unstructured data
 - Windows Fileservers
 - MS Office document types
 - PDF and other mostly read-only document types (ISO, JPEG, TIFF, etc.)

Phase 1 Work Stream B - Deliverables

1. Comprehensive narrative and detailed model for a software solution sufficient to achieve enterprise-class data sharing of structured data, including:
 - a. Logical diagram that elaborates the interfaces and workflow of the model
 - b. Tools needed (category and type, not necessarily brands and products)
 - c. Survey of the collection of tools and solutions we already have in our environments
 - d. Detailed examination of the recommended tools and software needed to supplement the existing inventory of tools and software.
 - e. Roster of the skills required to implement, operate, and maintain the above, with an explanation of each by role
 - f. Estimate of State staffing requirements to achieve these goals, including roles, number of staff per role and level of effort.
 - g. Estimate of Contractor staffing requirements to achieve these goals, including roles, number of staff per role and level of effort.
 - h. Calendar of events and a comprehensive schedule (laid out relative to the time of contract award) for the completion of these items
2. The same (all of the above) for unstructured data, plus a narrative and detailed model for a software solution to:
 - a. Find data
 - b. Identify data
 - c. Classify data
 - d. Automatically harvest and catalog metadata about the discovered data.
3. Identification and explanation of methods to achieve Deliverables 1 and 2 above:

Although all the assessment activities for this work stream must be completed, including, but not limited to: socializing on or evaluating enterprise architecture as it relates to MDM, DSA or Business glossary, managing integration, decision points, planning and approach for the other work streams; presentation of the document Deliverables, acceptance and payment thereof, will be deferred until funds are approved for the new budget year; and will be incorporated via Contract amendment.



Phase 1 Work Stream B - Acceptance Criteria

- Materials must be professional, practical, realistic, informative, and effective
- Roadmaps must be clear and concise
- Deliverables must follow SUITE project management and systems engineering processes
- Deliverables must meet industry standards
- In addition, the high level acceptance criteria for Deliverables listed in Section 1.501 must be met.

The DTMB Enterprise Architect and EIM Project Manager have joint responsibility for acceptance of all Deliverables.

Contractor must meet all requirements and provide Deliverables for Work Stream B as described above.

Contractor Approach

Phase 1 Work Stream B - Enterprise Data Architecture

Work Stream B will be focusing on the enterprise architecture required to support the organizational rules, governance and business processes implemented during Work Stream A to enable more collaboration with a particular emphasis on software tools.

An overview of the timeline and approach to this work stream is presented in the graphic below:

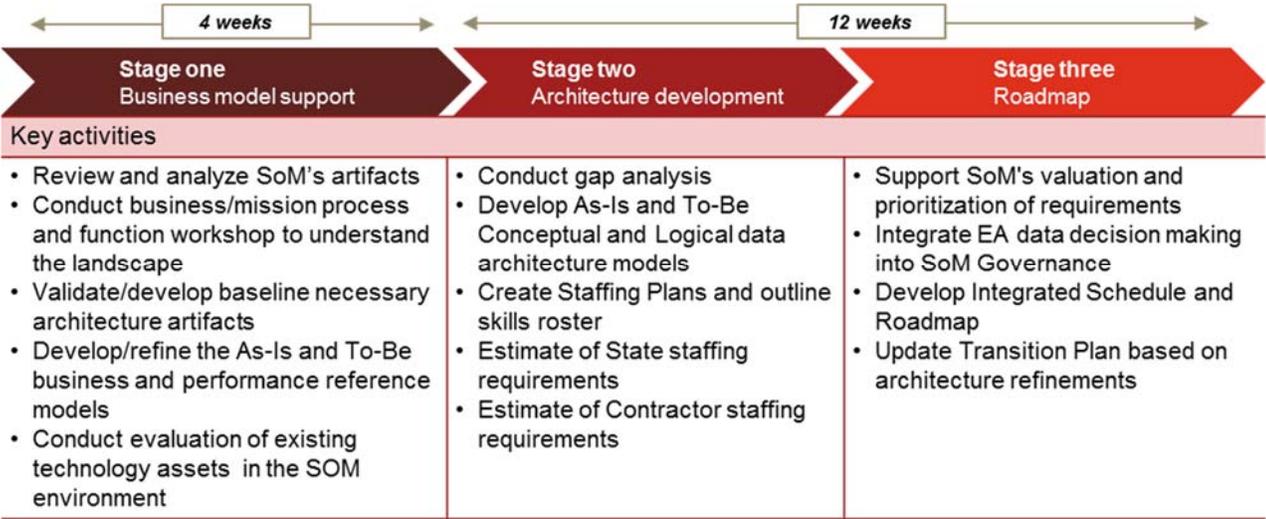


Figure 12

Contractor will work with the State of Michigan to develop a Data Architecture that captures the “As-Is” state to create a logical model and data flow diagram of how data is organized and how data flows through the organization. Using enterprise architecture disciplines, we will evaluate how the current state of data and software support the State’s desire to use key data elements as enterprise assets, and we will create a future state architecture that proposes the ideal model, with transitional states along the way.

Contractor will evaluate State tools currently in place and seek opportunities to leverage them and spread them more broadly. Where existing tools are not fit for purpose, we will evaluate options outside of the State’s current portfolio, placing an emphasis on those that have a track record in the market and are (relatively) straightforward to implement.

Contractor's Transform™ methodology is a scalable approach applicable to both large and small IT projects; it cuts across strategy, structure, services, processes, people, and technology to enable sustainable business transformation.

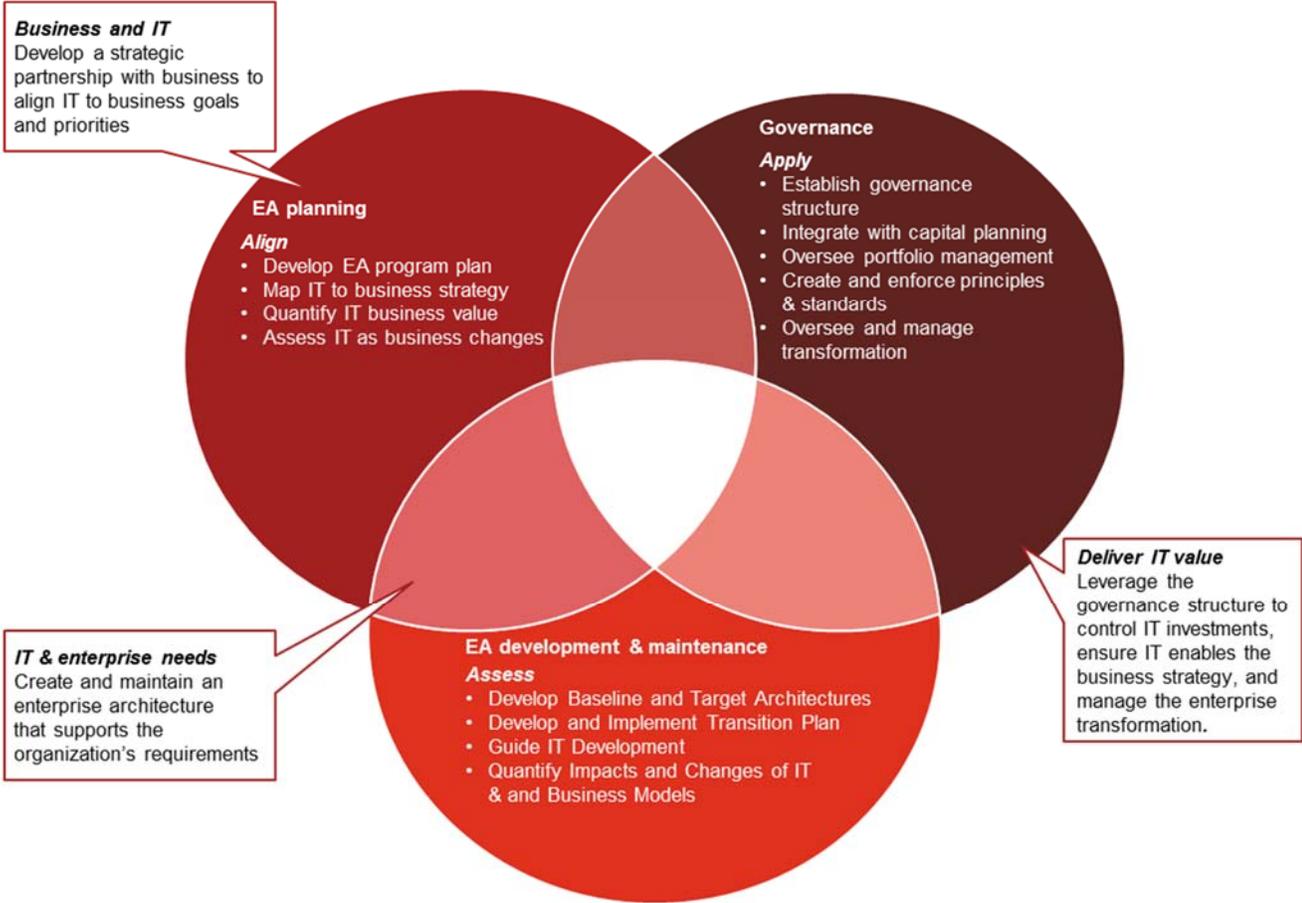


Figure 13



Enterprise Architecture Development (Current State)

Contractor knows the State’s environment, members of the core team and agency contacts, and will leverage this understanding to jump start the current state process. This strategy defines the value add, creation process, maintenance plan, anticipated challenges, and risks for the recommended artifacts below:

- Initial Information Gathering - documents current data management and data modeling projects to ensure alignment of existing data efforts and collect artifacts that will help build out the Enterprise Data Architecture.
- Enterprise Conceptual Data Model (ECDM) – decomposes the State’s portfolio of data into subject areas and defines the relationship between the subject areas so that it’s easier to prioritize and strategize enterprise data architecture efforts.
- Enterprise Logical Data Model (ELDM) - defines data entities, attributes, and relationships for each data subject area to provide a consistent data communication standard.
- System Entity CRUD (Create, Read, Update, and Delete) Matrix – maps systems and data entities in Enterprise Logical Data Model and shows what systems Create, Read, Update and Delete those data entities.
- Reference Data Lists – maps existing data standards to each system to promote data consistency and interoperability.
- Data Entity Lineage Diagrams - shows the data flow in a diagram of the key data entities in the logical data model.
- Domain Life Cycle Maps for Identity and Location – describes documents the stage gates in the full life cycle of the data and what subject areas of data are required at each stage gate for automating the movement of the data through the life cycle.
- Identification of Authoritative Data Sources - defines what data sources are approved resources for data entities identified in the Enterprise Logical Data Model and identifies systems that have been authorized to retain copies of the authoritative data for performance or other reasons.

Contractor will identify authoritative data sources in order to lead to an overall improvement in the State of Michigan’s data quality by ensuring business areas are using the most accurate, consistent, and available data possible. Once business areas reengineer the processes to extract/report on data from the authoritative data source, the State will be able to identify and retire duplicative databases.

Authoritative data criteria model					
<i>Authoritative data source</i>	Update frequency	Data flow position	Accuracy/data quality	Completeness	Inclusion of historical data
<i>Candidate 1</i>					
<i>Candidate 2</i>					

Figure 14

Contractor must work with the State to develop an integrated, secure, scalable and actionable Data Architecture which will clearly describe how existing and new technology will be applied to support each agency’s efforts to design, implement and roll out of the State of Michigan Data Enterprise Information Management Solution. Contractor must align technology and business processes while meeting federal regulations, and the Federal Enterprise Architecture Framework (FEAF) compliance. An “actionable EA” will serve to evaluate and coordinate technology development, insertion, refresh, and retirement while also coordinating IT spending and meeting the needs of State IT users and stakeholders. Figure 15 depicts all the elements of the State’s Data Architecture that will give the EIM a holistic view of the organization’s use and application of the data.

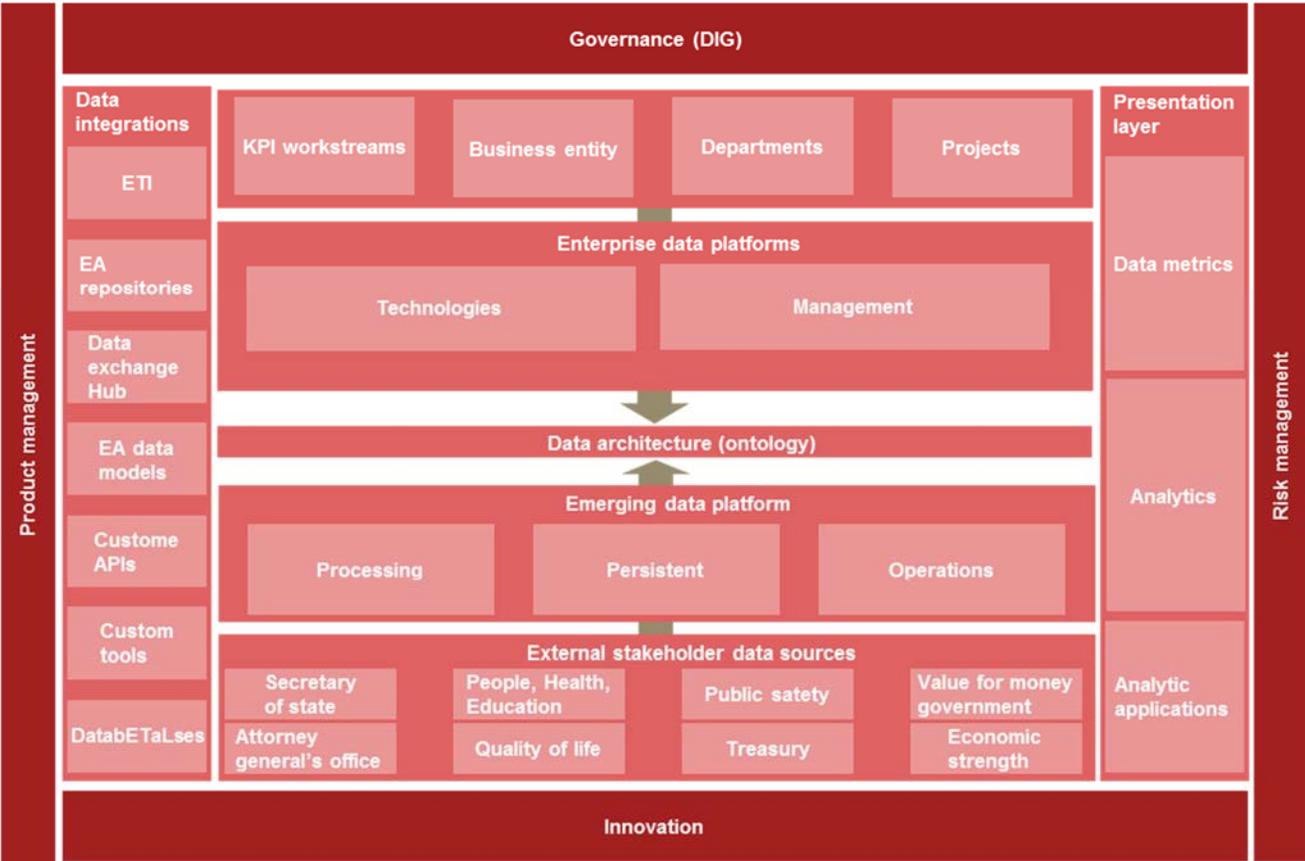


Figure 15

Contractor must address the software environment as a critical area to address, and as such, the central sections of this framework – Enterprise Data Platforms, Data Architecture and Emerging Data Platforms – will be emphasized. Additionally, the Product Management dimension, with its focus on APIs, Data Exchange Hubs and Custom Tools will be analyzed.

In order to develop a comprehensive, actionable Enterprise Data Architecture, which includes the As-Is, To-Be, and Transition multi-year architectures, Contractor will apply an Enterprise Architecture Approach which includes:

- **State of Michigan Business Model Support:** Contractor must work with State to review and analyze its EA artifacts; conduct business/mission process and function workshops, develop/validate baseline business process and function models, and develop/refine "As-Is" and target business reference and performance reference models.
- **Enterprise Architecture Development:** Contractor must conduct gap analyses, develop "As-Is" and "To-Be" Data, Application/Service, and Technology Reference Models, update State transition plans and reference models to reflect program and project results, develop program and portfolio investment mappings, and develop supporting EA models and artifacts to support security and facility data.
- **Roadmap Development:** Contractor must update the State's transition plans to reflect EA target and segment architecture refinements, support the State with valuation and prioritization of requirements, assess, evaluate, and incorporate new and emerging solutions, and integrate EA data and decision-making into the State's IT governance and project/program lifecycle processes. Consolidation of regional and local EIM systems and providing semantic layers on top of consolidated systems to all parts of the business can result in cost savings through improved efficiency. EIM serves as a foundational component for the target information architecture of a single source of truth for the enterprise. Figure 16 depicts three stages of Contractor's key activities.

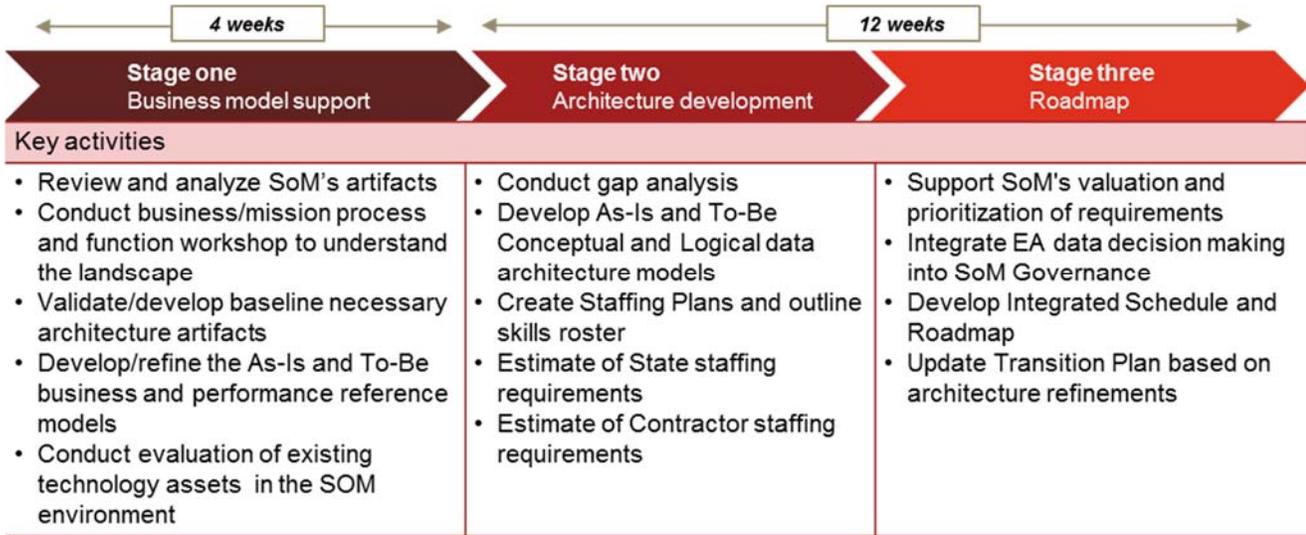


Figure 16

The Contractor will focus on developing the “as-is” or baseline of the State data architecture. Contractor proposes the following roles:

- State Chief Data Architect
- Enterprise Data Architect
- Technical Architect

The following matrix summarizes the functional roles and responsibilities needed to support the Data Architecture development, use, and maintenance.

Role	Responsibilities	Staffing
<i>State Chief Data Architect</i>	<ul style="list-style-type: none"> Consults on the work stream and provides organizational context regarding enterprise data landscape Acts as reviewer, chief decision maker on choice of technology solution and roadmap Provides knowledge-base and resources necessary to carry out the Deliverables for the work stream 	State of Michigan (State) personnel (1)
<i>Enterprise Data/Solution Architect</i>	<ul style="list-style-type: none"> Identify conceptual and logical data models for the functional areas in scope, including impact on upstream and downstream systems and processes Assess high-level organizational impact of the future state design Identify functional/organizational requirements to enable the future state process model Focused on providing solutions to different business/functional/technical areas. Develop estimate of State & Contractor staffing requirements Calendar of events and a comprehensive schedule (laid out relative to the time of contract award) for the completion of these items 	State personnel (.5) and Contractor personnel (1) to co-lead



Role	Responsibilities	Staffing
<i>Technical Architect</i>	<ul style="list-style-type: none"> • Design of data models • Consults on ETL processes, data warehouse applications and business intelligence (BI) reports through the use of best practices and tools, including SQL, SSIS, SSRS and OLAP. • Consults on architecture framework design; verifies operational objectives for each framework design procedure. • Determines corresponding indicators for each technology layer and evaluates the operational performance of each layer. • Decides on specific roles and responsibilities of engineers within business, information and data architecture modelling. • Coordinates materials for architecture design modelling. • Evaluates technology product roles and strengths within the project and locates appropriate technology providers based on results. 	<i>Contractor personnel (1)</i>

Figure 17

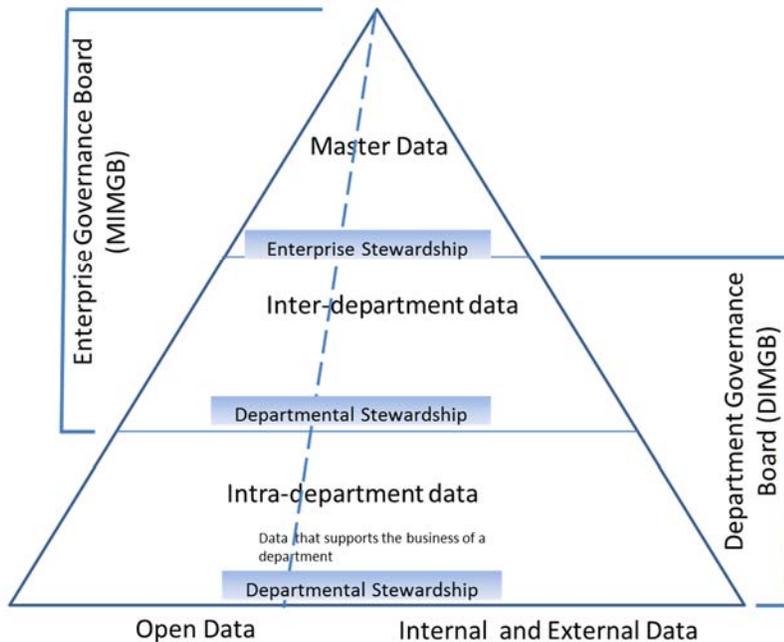
Phase 1 Work Stream C - Enterprise Business Glossary

The State is establishing a culture of inter-departmental data sharing to benefit citizens through cost effective and high quality services. A foundational principle is to treat data as an asset which is described and searchable by business users within and across departments. The State seeks to establish a statewide data dictionary, which will at a minimum include data element names, definitions, and classification. The State expects an enterprise business glossary to provide numerous benefits, such as faster and less expensive application development cycles, easier data sharing between State departments, higher quality data hence better answers to business questions, and establishment of master datasets.

The following illustration is commonly used as part of the EIM initiative to describe groupings of data and the levels of governance involved in the management of the data. The State recognizes the concept of master data as a statewide asset. Likewise, some data is shared between departments and known as inter-departmental data or shared data. Both of these types of broad classifications of data (master and inter-departmental) will need to be captured in a business glossary repository and managed at the enterprise or statewide level. Other data, portrayed at the bottom of the pyramid in the illustration would also be described in the business glossary but likely not be visible across the enterprise.



EIM Data Pyramid Concept



12

Several State departments have developed a department-specific business glossary. For example, MDOT has begun to use the IBM Infosphere Business Glossary to capture data definitions for key data used to manage and track mission critical data about roads and other assets, projects, and expenditures. MDOT has formally identified a Chief Data Steward and a data governance organization to manage element naming, definitions, and other key attributes. The Center of Educational Performance Information (CEPI) maintains education related data and manages data elements, data definitions, and data lineage. This manual process is augmented by data available within the SAS BI suite of tools and is currently housed in a Microsoft document. DCH is using the Adaptive tool to develop a custom business glossary for its multiple health programs and business needs.

Phase 1 Work Stream C - Deliverables

1. Enterprise requirements definition for an enterprise business vocabulary and data source lineage system, including services for authoring and sharing business metadata
2. Evaluation of tools, approaches, and solutions that the State already uses to manage data definitions and metadata from the perspective of expansion to an enterprise solution
3. Recommendations for implementation of an enterprise business glossary

Phase 1 Work Stream C - Acceptance Criteria

- Materials must be professional, practical, realistic, informative, and effective
- Roadmaps must be clear and concise
- Deliverables must follow SUITE project management and systems engineering processes
- Deliverables must meet industry standards
- In addition, the high level acceptance criteria for Deliverables listed in Section 1.501 must be met.

The EIM Program Director and EIM Project Manager have joint responsibility for acceptance of all Deliverables.

Contractor must meet all requirements and provide Deliverables for Work Stream C as described above.



Contractor Approach

Phase I Work Stream C - Enterprise Business Glossary

Solution Summary

The State of Michigan's capability to enable cross-agency data sharing will depend, among other things, on establishing a common definition and usage of business terms amongst the state agencies, a reliable source of truth for data definition, classification and lineage for the State's master data and other interdepartmental shared data assets. One of the core challenges in governing data assets at an enterprise level is the lack of published and formalized data definition, standards, and privacy classification.

The Enterprise Business Glossary will bring standardization to data management and provide a useful set of rules for State employees, vendors, and outside stakeholders who rely on the State's data.

The Enterprise Business Glossary work stream will develop a platform for the creation and management of an enterprise business vocabulary and data source lineage system that is standardized across State Agencies and Departments. The work stream will establish a statewide data dictionary, which will include data element names, their business approved enterprise definitions, usage, valid values, and classifications in terms of their degree of confidentiality and privacy. By enabling services for authoring and sharing of business metadata, it will reduce cycle time for system implementations and support statewide data governance functions by providing trusted information.

Contractor will provide the following for the enterprise metadata glossary Work Stream C:

- a. Establishment of single, authentic source system for approved business terminology and definition standards for enterprise data elements to alleviate organizational chaos resulting out of conflicting terminology
- b. Promotion of synergy between different agencies and functional areas by bringing several groups together to establish official business definitions
- c. Creation of an official source of truth for data lineage – identification of the 'most trusted source system' for a certain data element, thus enabling system implementations and architecture related decision making
- d. Capability for enterprise data owners for different data domains (person, business, location, asset) to set and manage definitions, lineage and classifications from an easily navigable user interface
- e. Capability to collaborate state-wide with authorized data officers from different agencies on definitions and classifications
- f. The solution will overlap or have an intersection with the EIM work stream for data sharing automation
- g. It will also have a potential intersection with the master data work-streams, since both involve master data definitions and establishment of lineage

Solution approach

The approach will involve extensive discovery to develop an inventory of data assets. This inventory will provide the foundation to scope out the effort involved to create a glossary for the targeted functional domains: Person, Business, Location and Asset. Closely collaborating with the Enterprise Architecture Work stream, Contractor will evaluate tools to support the glossary and standardize definitions and semantics. This will lead to implementation of the proposed solution.

It is important to note that these solutions can be developed on paper before it is implemented in a system, and that leading practice dictates that the glossary implementation be accomplished over several iterations of workshops and engagement with cross-functional groups.

Contractor tool evaluation methodology is holistic and must take the following aspects into consideration:

- **Ease of Use** – Should enable ease of access and management of definitions and lineage by business users
- **Support for Cloud**
- **Integration with Technical Metadata** – Business glossaries should be part of a broader metadata initiative that supports data lineage and impact analysis. Data architects should be able to easily link business terms to the associated technical metadata
- **Capability to Link between Data Policies and Rules** – As an advanced feature the glossary may need to accommodate data classification or other policies and standards

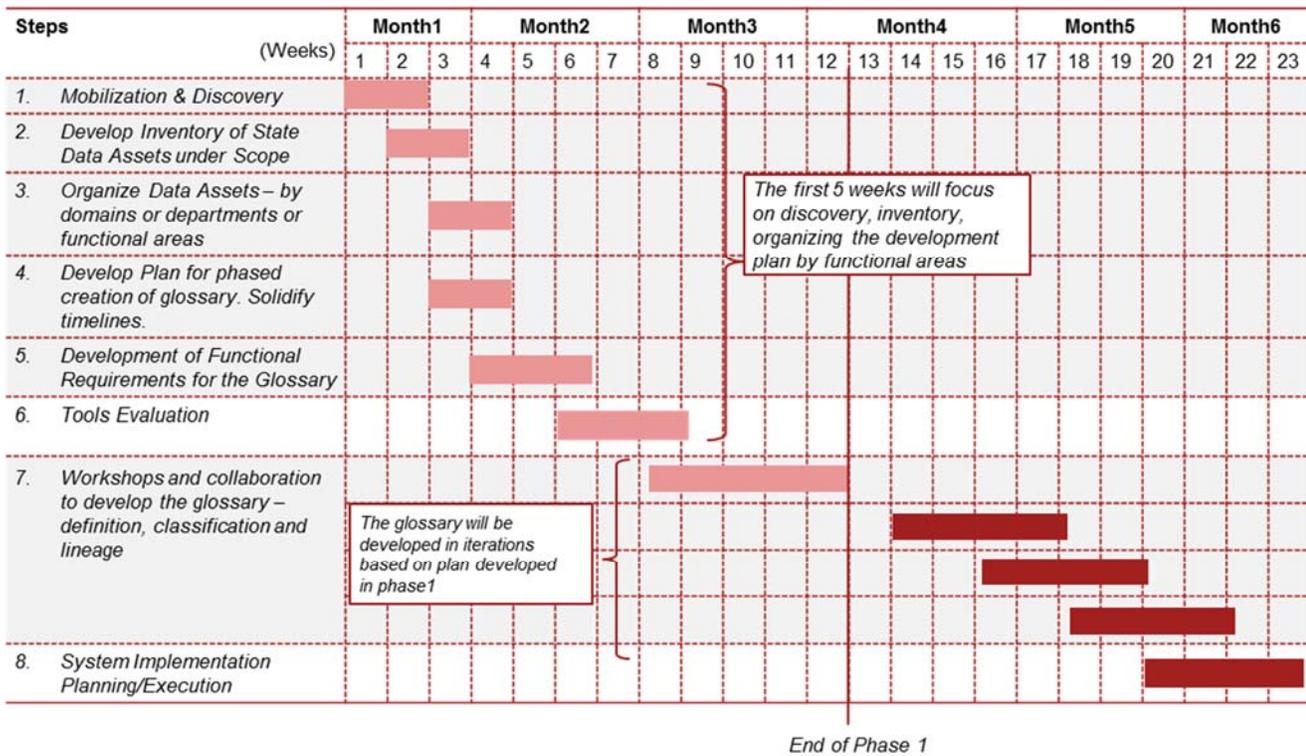


- **Capability to link with Data Sharing Solution (or potentially share the same technology platform)** – The Data Sharing Automation Solution and the Glossary Solution have a significant overlap, since both deal with the same data set enterprise master data and interdepartmental shared data assets. The solutions are envisioned to utilize the same platform or have interface points.
- **Easy Search from Reports** – As an advance feature the tool may business glossary tools offer a desktop widget that links the business glossary to the report or application.
- **Stewardship Capabilities & Workflow** – The tool should allow for approval workflows and other stewardship capabilities
- **Cost** – Should look to leverage existing enterprise tools and technology as much as possible
- **Standardized** – reporting and analytics

Timeline, Approach and Steps

The following high-level timeline provides an outline of the proposed sequence and duration of activities to accomplish the scope noted in this Work Stream:

***August**



█ Phase I
 █ Phase II

Figure 18



Key items to consider in the context of approach above:

- Figure 18 shows a consolidated timeline for Phase I as well as Phase II, since the integrated view aids in the understanding of how the work stream will be executed.
- In Phase I – Contractor will establish the foundational structure for the business glossary, while the definitions and terminology get developed and built into the system in iterations over Phase II. During Phase I however, Contractor propose to complete one iteration of stakeholder workshops for glossary development and documentation.
- Step 4 of Contractor’s approach will involve organizing the development of the business glossary (either by data domains – person, business, asset, location. or by departments, or by functional areas), and developing an iterative approach to development of glossary according to the organized areas which is reflected in Step 7.
- Note that the scope of Step 7 will be determined during planning at Step 4, and will be dependent on the discovery during inventory and scoping exercise.
- The timelines mentioned in Step 7 will be dependent on the timeline in the discovery.

For the work effort outlined, Contractor proposes the following activities and Deliverables in alignment in the following tracks.

Tracks	Activities and Deliverables
<i>Discover & mobilize</i>	<ul style="list-style-type: none"> • Work Stream kick-off, Team Mobilization, Logistics and Introduction • Consolidation and review of any existing work around data definitions or glossary • Development of baseline knowledge on the different groups, agencies and players • Schedule interviews and key meetings that will aid in the discovery
<i>Develop inventory of data assets in scope & organize data assets</i>	<ul style="list-style-type: none"> • Based on a baseline of existing artifacts develop an inventory of the master and reference data and shared data entities that are in scope for the glossary • Work across stakeholder groups to finalize the scope at an entity level • Organize the data assets by domain (person, business, location) or by functional areas, or application or departments (as suits the needs)
<i>Develop timelines for phased creation of glossary</i>	<ul style="list-style-type: none"> • Develop an iterative, phased plan to create the business glossary – organizing by functional areas, groups, agencies or domains • Solidify on the timelines for development of the glossary, and the subsequent technology implementation • Identify points of interaction and collaboration with other work streams such as Data Sharing Solution Automation and Master Data Work Streams
<i>Tools evaluation</i>	<ul style="list-style-type: none"> • Evaluation of existing tools, assets or solutions that the state owns against the solution requirements • Conduct evaluation of needs against leading business glossary tools in the industry • Also include in the evaluation criteria will be learnings from agencies like MDOT on the benefits and pitfalls of the technology in current use for business glossary
<i>Workshop and collaboration to develop the glossary – definition, classification and lineage (1 Iteration)</i>	<ul style="list-style-type: none"> • Conduct Work Shops and liaison with cross-agency stakeholder groups, and other key personnel in the enterprise team to establish the business definitions, lineage and classifications
<i>System implementation – Planning</i>	<ul style="list-style-type: none"> • Detailed planning, vendor selection and preparation for system Implementation <p><i>* Details of the System Implementation Phase are detailed in sections for Phase II.</i></p>

Figure 19

Resource Team - Anticipated staffing model indicated to support this Work Stream:



Role	Responsibilities	Staffing
<p><i>Project Manager/ Lead Strategist</i></p>	<ul style="list-style-type: none"> • Has the overall responsibility for the work performed by Contractor in the work stream • Responsible for timeliness, cost and quality of the work stream • Develops the Implementation Roadmap Per Department • Develops the Project Charter, Detail Project Plan • Drives standard methodology, tools and templates • Responsible for thought-leadership, strategic guidance, technical direction • Brings business and technical expertise from previous engagements in Business Glossary creation • Co-facilitate interviews, workshops and working sessions with stakeholders to organize and build definitions for the business glossary workshop • Assist in defining leading practices and standards for future state solution leveraging subject matter expertise from past engagements • Facilitates business workshops and manages connections with cross-functional teams to develop and approve the definitions, lineage and classifications. • Leads the effort on tools evaluation • Works on developing the system implementation plan 	<p>Contractor personnel (1) State personnel (.25)</p>
<p><i>Technical Analyst Business Analyst</i></p>	<ul style="list-style-type: none"> • Assists in the development of a baseline understanding during discovery phase • Works towards developing the inventory of data assets and outlining the scope for the initiative • Assists in the overall Detailed Design • Facilitates identification of Domains, Elements and Priorities to organize data governance by the individual departments • Works with peripheral work streams and stakeholder groups to document data definition, lineage and classification for all data elements in scope • Assists in the tools evaluations process • Assists in the development of the system implementation plan 	<p>Contractor personnel (2)</p>

Figure 20



As confirmed during the revisions process, the proposed Enterprise Business Glossary includes the assessment and the final project for all SOM departments. .

Phase 1 Work Stream D - Enterprise Master Data Management (MDM) for personal and business identity

Executive Directive 2013-1 articulates a vision in which state government allows a single sign-on for citizens and businesses to access all of their state account information. Realization of this vision requires Master Data Management (MDM) for individual and business identity.

The Michigan Department of Community Health (MDCH) has implemented two foundational applications that jointly provide single sign-on to state account information. The two applications are an identity credential authorization and management (MILogin) system and a master person index (MPI). The EIM program team and Steering Committee believe that MILogin and MPI provide the foundation for enterprise MDM.

Phase 1 Work Stream D - Deliverables

1. Enterprise requirements definition for an enterprise MDM solution for uniquely identifying citizens and businesses which provides a 360 degree view across State department personas such as student, driver, beneficiary, claimant, recipient, taxpayer, licensee, or service provider. Requirements must include consideration of critical systems such as SIGMA and MiDEAL.
2. Evaluation of tools, approaches, and solutions that the State already uses to manage individual and business identity for potential expansion to the enterprise level.
3. Recommendations for implementation of an enterprise solution for MDM for identity.

Phase 1 Work Stream D - Acceptance Criteria

- Materials must be professional, practical, realistic, informative, and effective
- Roadmaps must be clear and concise
- Deliverables must follow SUITE project management and systems engineering processes
- Deliverables must meet industry standards
- In addition, the high level acceptance criteria for Deliverables listed in Section 1.501 must be met.

The EIM Program Director and EIM Project Manager have joint responsibility for acceptance of all Deliverables.

Contractor must meet all requirements and provide Deliverables for Work Stream D as described above.

Contractor Approach

Phase 1 Work Stream D - Enterprise Master Data Management (MDM) for personal and business identity

Contractor approach to establishing an 'Enterprise (MDM) for personal and business identity' for the State includes the following provisions:

- **In Phase I Contractor will:**
 - Establish vision and ideal end-state requirements for Person and Business Master
 - Evaluate the existing identity management systems to assess how they can be scaled or leveraged towards the future state vision
 - Finalize the strategy and roadmap to develop an Enterprise Person & Business Master technology platform that can be leveraged for a state-wide roll-out
- In Phase II Contractor proposed to:
 - Partner with State and an implementation partner of choice to build out the technology solution, and establish a repeatable process that can be leveraged over subsequent phases to integrate several data sources and state agencies.



- o Work towards a goal of including a majority of the requirements identified in Phase I to accomplish the State's objective of establishing an Enterprise Master for Person and Business Identity.

This section describes the details of Contractor's Phase I approach:

Contractor must conduct requirements analysis workshops with the agencies and departments in scope for Phase I to understand their needs for personal and business identity data, coordinating attendance and logistics with the other work streams. In addition, for those agencies currently using MPI and MILogin, Contractor will conduct sessions to determine any functional or requirement gaps with these applications. Contractor will work with the State of Michigan to conduct a technical and functional fit review of the Michigan Department of Community Health (MDCH) foundational applications (MILogin, MPI) to understand how that system may best be leveraged as a foundation for the enterprise-wide solution.

The workshops will be inclusive of the departments in scope for this initiative.

- a. Department of Community Health (DCH)
- b. Department of Human Services (DHS) Food Assistance
- c. Unemployment Insurance Agency (UIA), a bureau within the Department of Talent and Economic Development
- d. Treasury
- e. Michigan Department of State (MDOS)
- f. Michigan Department of Education (MDE)
- g. Center for Education Performance Information (CEPI)
- h. Michigan Department of Transportation (MDOT)
- i. Michigan Department of Natural Resources (MDNR)
- j. Michigan State Police (MSP)

Timeline, approach and steps

Contractor will employ a shared approach and shared roles across the work streams D and E. The work streams will be executed sequentially, with the same team transitioning from one work stream to the other. This approach helps manage the time-demand on the State's key EIM resources that need to have deep engagement on both work streams. The sequenced approach will help maintain focus while these very crucial work streams get analyzed and planned out.

There are many synergies between work stream D: **Personal and Business Identity MDM** and work stream E: **Location MDM including addresses**. While the data elements and technology solutions may be different, the work related to data discovery, existing technology assessment, and capturing master data requirements are highly similar. For simplicity and clarity, we have used a single set of step descriptions, described in the section for work stream D.

Contractor has organized the work into two views – aligned to the timeline and sequence of steps, and by the state-identified Deliverables and the associated activities.

The following high-level timeline (Figure 21) provides an outline of the proposed sequence and duration of activities to accomplish the scope noted in Work Stream D.

Mid - June

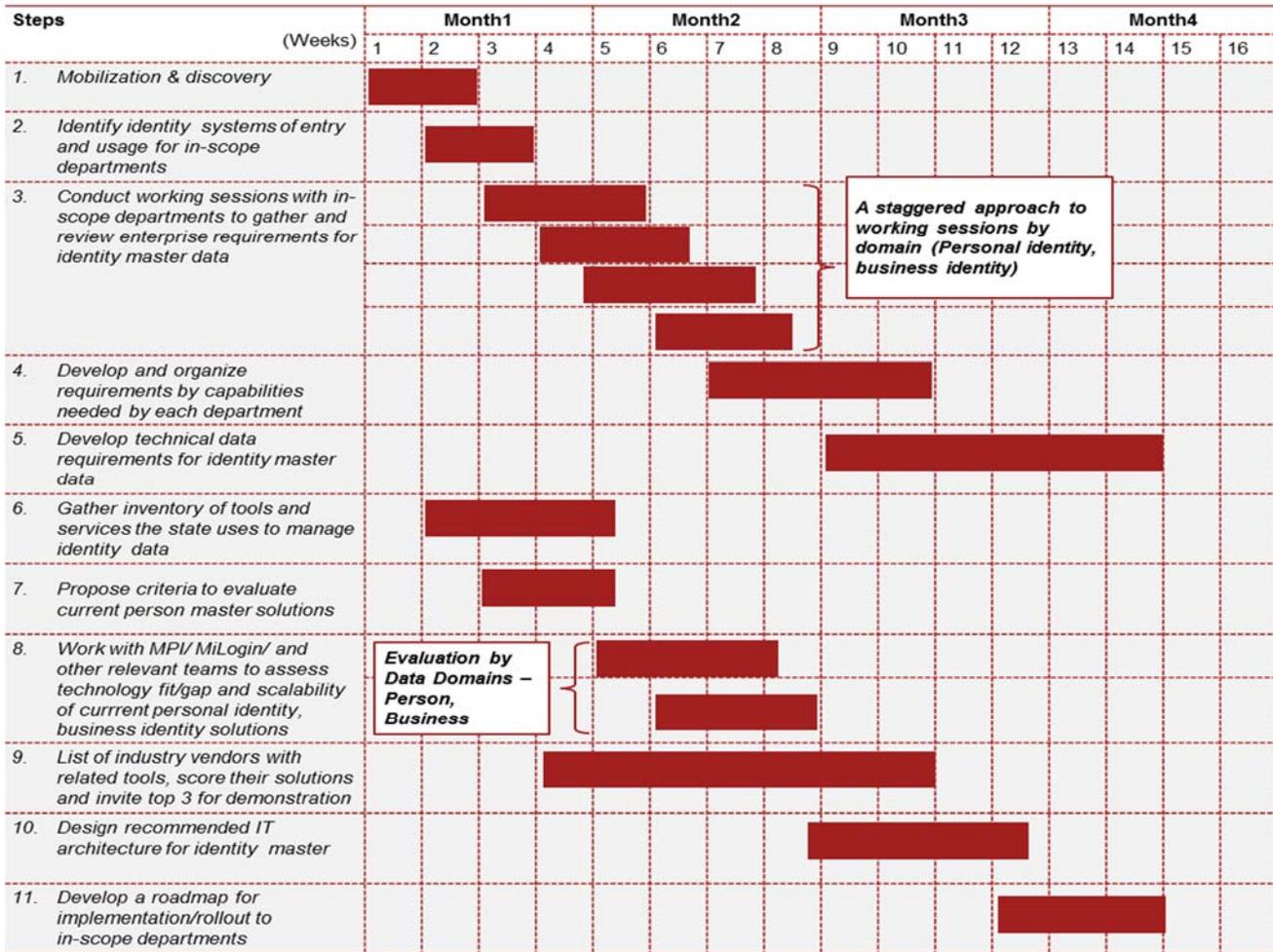


Figure 21
Description of Steps:

1. Mobilization & Discovery: Contractor will create a detailed project plan, develop a kickoff / overview deck, and identify key stakeholders from each in-scope department. Once stakeholders are identified, Contractor will schedule working sessions with them for the following weeks.

2. Identify Identity and Location systems of entry and usage for in-scope departments: Working with the key stakeholders, create an inventory of systems and associated data volumes that enter or use identity/location data for their respective departments.

3. Conduct working sessions with in-scope departments to gather and review enterprise requirements for identity and location master data: Contractor will conduct working sessions for each department to orient them on the goals and objectives of the program, present standard and currently known requirements, and then determine additional requirements, user scenarios, and constraints related to needs of each department. Where a requirement is satisfied by an existing system the system name will be included in one of the requirement sheet columns. Where available Contractor will use existing requirements lists or documents as the baseline for a department prior to the working session.

4. Develop and organize requirements by domain and the capabilities needed by each department: Contractor will de-duplicate and harmonize requirements, define a set of common / high level capabilities, group requirements by their associated capability and domain, and indicate which departments identified a specific requirement. This consolidated requirements list will be sent out for review by the stakeholders who participated in the requirements workshops.



- 5. Develop technical data requirements for identity and location master data:** Based on the specific functional requirements, a set of technical requirements will be developed that incorporates information from the systems inventory and functional requirements.
- 6. Gather inventory of tools and services the State uses to manage identity and location data:** Identify the subset of systems inventoried in step 2 that perform master data management functions, document the technology platform, hardware and operating system environment, and baseline capabilities. If the state is using third-party services for data enrichment, document which services are being used.
- 7. Propose criteria to evaluate current identity and location solutions:** Contractor will work with the state to identify a set of criteria that can be used to appropriately score the fit and functional of system options against the functional and technical requirements. For example, we may decide to use the relative importance of each capability to set a weighting, and then calculate a weighted score based on functional and technical fit.
- 8. Work with MPI/MILogin/MGF/MGFEE team to assess technology fit/gap and scalability of current personal identity, business identity, address and location solutions:** Using the consolidated requirements and capability matrix, identify which solutions currently deployed satisfy which requirements or provide capabilities needed. Contractor will also document the scalability model for each system.
- 9. List of industry vendors with related tools, score their solutions and invite top 3 for demonstration:** Contractor will assemble a list of industry standard solutions for identity and location management, likely by leveraging analyst reports, and score them against the capability level requirements. The highest scoring vendors will be given a script / set of scenarios and be invited to perform a short (2-3 hour) demonstration.
- 10. Design recommended IT Architecture for identity and location:** Working closely with the state, Contractor will develop a program recommendation for the best fit solution. Based on that recommendation, a proposed architecture diagram will be created along with a narrative of the elements of the architecture solution.
- 11. Develop a roadmap for implementation / rollout to in-scope departments:** Using the fit to requirements and other factors (such as readiness to participate) create a roadmap to deploy the solution to departments and their associated systems. The first departments on the roadmap will be deployed in Phase II, with an emphasis on picking departments whose requirements cover a significant subset of the overall state's needs.



Phase I – Work Stream D - Enterprise Master Data Management (MDM) for personal and business identity

For work stream D there are three Deliverables as follows:

Deliverables	Associated Activities
1. Enterprise requirements definition for an enterprise MDM solution for uniquely identifying citizens and businesses which provides a 360 degree view across State department personas such as student, driver, beneficiary, claimant, recipient, taxpayer, licensee, or service provider. Requirements must include consideration of critical systems such as SIGMA and MiDEAL.	<ul style="list-style-type: none"> • Conduct working sessions with the in-scope departments to gather and review enterprise requirements for personal and business identity master • Develop the requirements traceability matrix, and organize requirements based on the capabilities needed for each department with emphasis on critical systems such as SIGMA and MiDEAL • Identify critical person and business identity data elements • Work with the MPI and MILogin teams to perform a functional gap analysis against the current solution
2. Evaluation of tools, approaches, and solutions that the State already uses to manage individual and business identity for potential expansion to the enterprise level.	<ul style="list-style-type: none"> • Gather an inventory of current tools and systems the State uses to manage personal and business identity data • Propose criteria to evaluate the current master person index and single sign on solutions and work with state personnel to refine those criteria • Scope existing tools relative to the defined criteria • Develop a demonstration script • Prepare a list of industry vendors who provide related tools and services, then work with those vendors to score their solutions against the same criteria • Review the scoring and invite the top three vendors to give a scripted demonstration
3. Recommendations for implementation of an enterprise solution for MDM for identity.	<ul style="list-style-type: none"> • Develop technical data requirements (e.g., volumes, latency, performance) • Identify personal and business identity systems of entry and usage and requirements for integration • Identify impacts on upstream and downstream systems • Assess MPI/MILogin technology fit/gap and scalability • Design recommended IT architecture for personal and business MDM and single sign on in conjunction with state personnel • Develop a roadmap for implementation/rollout to departments

Figure 22

Phase I Work Stream D – Roles and Responsibilities

For the business identity work stream, the project roles and responsibilities are:

Role	Responsibilities	Staffing
<i>Project Manager</i>	<ul style="list-style-type: none"> • Responsible for timeliness, cost and quality of the work stream • Accountable for project planning, scoping and initiation • Manage PMO activities (Monitoring and Control) including Project Governance, Status Reporting, Issue & Risk Mitigation and Management, Resources, Cost Tracking • Define and sequence specific tasks to align with objectives • Coordinate business efforts across departments related to identity MDM scope • Provide time estimates and coordinate business resources 	Contractor personnel (1 full time)



Role	Responsibilities	Staffing
	<ul style="list-style-type: none"> • Prioritize business requirements • Review design documents • Develop Implementation Roadmap 	
<i>Tech Lead</i>	<ul style="list-style-type: none"> • Lead design of future state application and technical architectures • Assess MPI and MILogin, determine technology fit/gap related to all departments/sub-departments • Evaluate scalability of MPI and MILogin design • Lead identification of IT requirements to enable future state process design • Coordinate integration requirements with data sharing tool team 	State Enterprise Data Architect (1 full time) and Contractor personnel 1 full time split with location master) to co-lead
<i>Business/ Systems Analyst</i>	<ul style="list-style-type: none"> • Identify person and business identity source systems within the departments in scope • Identify critical person and business identity data elements • Support detail fit/gap analysis of existing systems and other appropriate tools • Quantify impacts on upstream and downstream systems • Determine necessary set up integration with the single sign on tool • Departmental Data Stewards provide expertise related to personal and business identity within their department • Define business requirements, data domains and data elements at the enterprise level • Identify critical person and business identity data elements • Examine MPI business rules and determine enterprise business rules to drive creation of personal identity index across all departments in scope 	State nominated personnel who are knowledgeable about personal and business identity system(10 part time) and Contractor personnel (2 full time)

Figure 23

Phase I Work Stream D – Assumptions

Assumptions made in creating the activities and estimates for this work stream:

1. All of the agencies have personal identity data and in many cases business data in their systems whether large or small. Presumably there are dozens of systems that will need to be assessed as candidates for prioritization and inclusion in this effort. State will need to take the lead in identification of the in-scope systems and contacts.
2. Personal information will need to be kept private where required by law and data sharing will need to be closely monitored.
3. Personal and Business identity data may share one Enterprise Data Steward and one Enterprise Data Architect. Should the state envision these two Identities to be managed separately, then an Enterprise Data Steward and an Enterprise Data Architect would be needed for each master data identity
4. The size of departments and the number of applications/systems each department manages varies greatly. For large departments with many related applications/systems, the resources provided may need to be near full time. Otherwise the State business and technical roles would be part time.

Phase 1 Work Stream E - Enterprise Master Data Management (MDM) for location, including addresses

Enterprise master data management for location, including addresses, is the foundation for data sharing across enterprises as most data that needs to be shared has some sort of location component associated with it. The DTMB Center for Shared Solutions (CSS) is in the process of gathering requirements from early adopter State departments that are willing to participate in a shared solution regarding addresses and/or locations. The State has identified a simple and a more comprehensive approach to mastering address and location data. The simple approach focuses on MDM for address data such as street, city, state, zip code.



The more comprehensive approach provides a precise latitude/longitude location for an address that can be visualized on a map for analyses of geographic boundaries and various districts. This work stream includes both the simple and comprehensive approaches for address and location.

Currently each department gathers addresses for their own programs and uses various software programs to validate address accuracy and format in terms of valid U.S. standard addressing procedures. Some departments consider address as an attribute of individual or business identify. Some departments use geospatial tools to leverage a location component for MDM for assets such as buildings, roads, bridges, and State parks. Departments use the Michigan Geographic Framework (MGF) and Michigan Geographic Framework Editing Environment (MGFEE) as the basis for their geospatial base mapping data. CSS manages this geospatial enterprise environment and collaborates with the agencies on its continued evolution. This project requires an evaluation of the existing CSS geospatial enterprise environment during information gathering phases in the development of recommendations for MDM of location and address.

Phase 1 Work Stream E - Deliverables

1. Enterprise requirements definition for an enterprise MDM solution for addresses and location, including both address cleansing and geospatial visualization. Requirements must include consideration of critical systems such as the State's geospatial enterprise environment, MFG data, and MGFEE tools.
2. Evaluation of tools, approaches, and solutions that the State already uses to manage location and address for potential expansion to the enterprise level.
3. Recommendations for implementation of an enterprise solution for MDM for location and address.

Phase 1 Work Stream E - Acceptance Criteria

- Materials must be professional, practical, realistic, informative, and effective
- Roadmaps must be clear and concise
- Deliverables must follow SUITE project management and systems engineering processes
- Deliverables must meet industry standards
- In addition, the high level acceptance criteria for Deliverables listed in Section 1.501 must be met.

The EIM Program Director and EIM Project Manager have joint responsibility for acceptance of all Deliverables.

Contractor must meet all requirements and provide Deliverables for Work Stream E as described above.

Contractor Approach

Phase 1 Work Stream E - Enterprise Master Data Management (MDM) for location, including addresses

The State of Michigan needs to have reliable and complete information specifying the location of businesses, homes, parcels, land areas, roads, city and county boundaries, school districts, sales tax jurisdictions, rights of way, bridges and many other real-world features. Not all of these locations can be identified by address only, as many types of features are not actually on streets – for example, streets themselves.

Contractor must work with the State of Michigan to gather address and location requirements, initially conducting a detailed review of the Michigan Geographic Framework (MGF) and Michigan Geographic Framework Editing Environment (MGFEE) including functionality, processes and data models. Contractor recognizes the State has two needs in this domain: clean address data, and the ability to map a location using coordinate data.

Contractor must conduct workshops with the agencies and departments in Phase I to understand their needs for location data, coordinating attendance and logistics with the other work streams. In addition, for those agencies using MGF and/or MGFEE, Contractor will conduct sessions to determine any functional or requirement gaps with these applications.

The workshops will be inclusive of the departments in scope for this initiative.

1. Department of Human Services (DHS) Food Assistance
2. Unemployment Insurance Agency (UIA), a bureau within the Department of Talent and Economic Development



3. Treasury
4. Michigan Department of State (MDOS)
5. Michigan Department of Education (MDE)
6. Center for Education Performance Information (CEPI)
7. Michigan Department of Transportation (MDOT)
8. Michigan Department of Natural Resources (MDNR)
9. Michigan State Police (MSP)

Timeline, Approach and Scope

Work stream E will use the same steps and timeline as work stream D, with the start date of work stream E beginning after the completion of work stream D

September

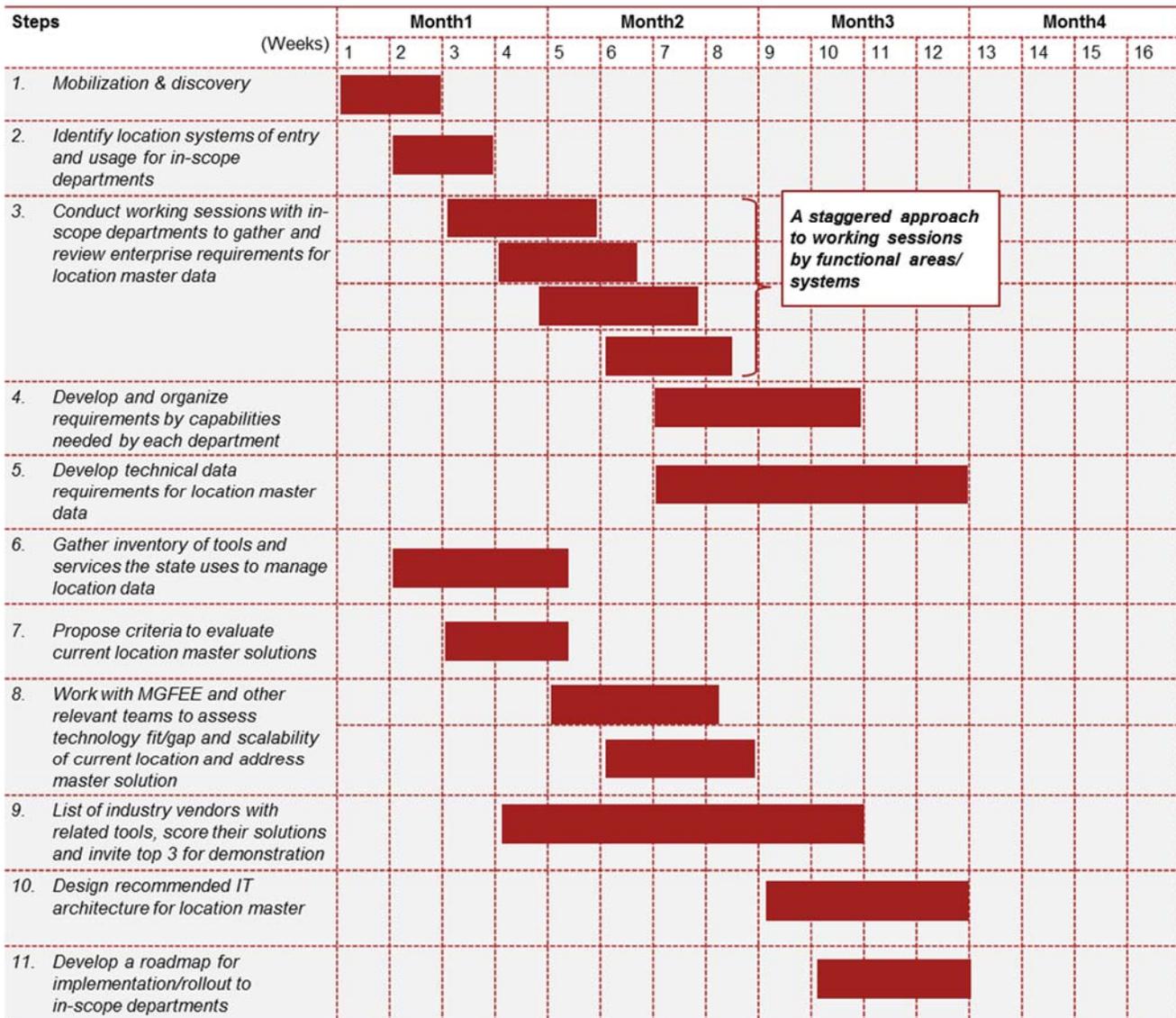




Figure 24

Phase I Work Stream E – Enterprise Master Data Management (MDM) for location, including addresses

For work stream E there are three Deliverables as follows:

Deliverable	Activities
1. Enterprise requirements definition for an enterprise MDM solution for addresses and location, including both address cleansing and geospatial visualization. Requirements must include consideration of critical systems such as the State’s geospatial enterprise environment, MFG data, and MGFEET tools.	<ul style="list-style-type: none"> • Conduct work sessions with the in-scope departments to gather and review enterprise requirements for location data • Develop the requirements traceability matrix, and organize requirements based on the capabilities needed for each department. • Work with the current MFG team to perform a functional gap analysis against the current solution
2. Evaluation of tools, approaches, and solutions that the State already uses to manage location and address for potential expansion to the enterprise level.	<ul style="list-style-type: none"> • Gather an inventory of current tools and services the State uses to manage location data • Propose criteria to evaluate the current location management solutions and work with state personnel to refine those criteria • Score existing tools relative to the defined criteria • Develop a demonstration script • Prepare a list of industry vendors who provide related tools and services (including Oracle and Intergraph), then work with those vendors to score their solutions against the same criteria • Review the scoring and invite the top three vendors to give a scripted demonstration
3. Recommendations for implementation of an enterprise solution for MDM for location and address.	<ul style="list-style-type: none"> • Develop technical data requirements (e.g., volumes, latency, performance) • Identify address and location systems of entry and usage and requirements for integration • Identify impacts on upstream and downstream systems • Assess MGF/MGFEET technology fit/gap and scalability • Design recommended IT architecture for address and location MDM in conjunction with state personnel • Develop a roadmap for implementation/rollout to departments

Figure 25

Phase I Work Stream E – Roles and Responsibilities

For the Enterprise Location MDM work stream, the project roles and responsibilities are as follows:

Role	Responsibilities	Staffing
<i>Project Manager</i>	<ul style="list-style-type: none"> • Responsible for timeliness, cost and quality of the work stream • Accountable for project planning, scoping and initiation • Manage PMO activities (Monitoring and Control) including Project Governance, Status Reporting, Issue & Risk Mitigation and Management, Resources, Cost Tracking • Define and sequence specific tasks to align with objectives • Coordinate business efforts across departments related to location MDM scope • provide time estimates and coordinate business resources • Prioritize business requirements • Review design documents • Develop Implementation Roadmap 	Contractor personnel (1 full time split with Identity master)



Role	Responsibilities	Staffing
<i>Business Analyst</i>	<ul style="list-style-type: none"> • Departmental Data Stewards provide expertise related to location including addresses within their department • Define business requirements, data domains and data elements at the enterprise level • Identify critical location data elements • Examine MGF/MGFEE business rules and determine enterprise business rules to drive creation of location master across all departments in scope 	State nominated personnel who are knowledgeable about location information usage from each department (part time), and Contractor personnel (2 full time)
<i>Tech Lead</i>	<ul style="list-style-type: none"> • Lead design of future state application and technical architectures • Assess MGF/MGFEE in detail, determine technology fit/gap related to all departments/sub-departments • Evaluate scalability of MGF/MGFEE design • Lead identification of IT requirements to enable future state process design • Coordinate integration requirements with data sharing tool team 	Enterprise Data Architect (1) and Contractor personnel (1) to co-lead
<i>Systems Analyst</i>	<ul style="list-style-type: none"> • Identify address and location source systems within the departments in scope • Identify critical address and location data elements • Support detail fit/gap analysis of existing systems and other appropriate tools • Quantify impacts on upstream and downstream systems • Determine necessary set up integration with the solution 	State nominated personnel who are knowledgeable about location and address systems (10 part time) and Contractor personnel (1 full time)

Figure 26

Phase I Work Stream E – Assumptions

Assumptions made in creating the activities and estimates for this work stream:

1. All of the agencies have address data and in many cases location data in their systems whether large or small. Presumably there are dozens of systems that will need to be assessed as candidates for prioritization and inclusion in this effort. State will need to take the lead in identification of the in-scope systems and contacts.
2. Personal information will need to be kept private where required by law and data sharing will need to be closely monitored.
3. Address and Location data will share one Enterprise Data Steward and one Enterprise Data Architect. Should the state envision these two domains to be managed separately, then an Enterprise Data Steward and an Enterprise Data Architect would be needed for each master data domain
4. The size of departments and the number of applications/systems each department manages varies greatly. For large departments with many related applications/systems, the resources provided may need to be near full time. Otherwise the State business and technical roles would be part time.

Phase 1 Work Stream F - Enterprise automated solution for Data Sharing Agreements (DSA)

Data sharing agreements are documents that identify data that will be shared by a source department and a receiving department as well as conditions of usage, frequency and methods of delivery. Development and use of a template DSA is a key foundational component and a major step forward for the EIM program. The template DSA is a critical starting point and is envisioned to improve over time. However, the current document and manual processes do not fully realize potential benefits of this key aspect of EIM implementation in the public sector. The goal of the automated DSA solution is to implement an automated, user-friendly, effective tool that aligns with EIM principles to securely facilitate a "share first" environment across all State departments.



Defining detailed business requirements is a necessary first step. At a high level, the State envisions:

- Central repository for all DSAs that State departments may query to ascertain if data of interest is available, already shared among other departments, and if the interested department may join the agreement
- Automated solution with drop-down boxes and workflow to expedite creation and final signing of a DSA
- Standard reports on volume, types of data shared, participating departments, time from initiation to completion of a DSA, and other performance metrics to be determined

In 2014 the EIM team used the IBM Infosphere Business Glossary to catalog data sharing agreement information between departments. Business Glossary was used to capture data elements and definitions, data owner/steward as well as other categories and relationships about the data. Examples of other categories created using the toolset included source department, receiving department, summary of data sharing agreements, data domain, agreement expiration date, and data classification.

The State intends to leverage existing technology infrastructure for the DSA solution. This project requires evaluation of existing tools and recommendations for expanding, if needed, the existing infrastructure to accommodate the DSA solution.

Phase 1 Work Stream F - Deliverables

1. Enterprise requirements definition for an enterprise automated DSA
2. Evaluation of tools, approaches, and solutions that the State already uses for potential expansion to the enterprise level
3. Recommendations for implementation of an automated enterprise DSA solution

Phase 1 Work Stream F - Acceptance Criteria

- Materials must be professional, practical, realistic, informative, and effective
- Roadmaps must be clear and concise
- Deliverables must follow SUITE project management and systems engineering processes
- Deliverables must meet industry standards
- In addition, the high level acceptance criteria for Deliverables listed in Section 1.501 must be met.

The EIM Program Director and EIM Project Manager have joint responsibility for acceptance of all Deliverables.

Contractor must meet all requirements and provide Deliverables for Work Stream F as described above.

Contractor Approach

Phase I Work Stream F - Enterprise automated solution for Data Sharing Agreements (DSA)

A DSA establishes the conditions under which one agency chooses to share a data item to a receiving Agency and provides for the protection of that data. It also identifies the responsibilities of each party and establishes terms governing the use, disclosure, and disposition of the data.

The data sharing automation solution is envisioned to overlap with the Business Glossary work stream – both solutions can potentially leverage the same platform. While the business glossary will house the data definitions, lineage and classification for shared data assets, the Data Sharing automation work stream can extend the same platform, to add mechanisms for privilege control, permissions and access rights to various agency personnel based on rules automation.



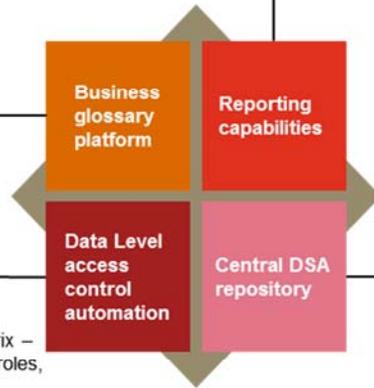
A holistic and a pragmatic approach for implementing the DSA solution will deliver sustainable business value. The salient features of the solution are listed in Figure 27 below:

Leverage business glossary platform

While the Business Glossary would have inventory of data definitions for shared and master data assets, the DSA solution will add layers of functionality to the glossary to enable granular access level definitions, that can be leveraged for data sharing purposes.

Capability to report

Standard reports on volume, types of data shared, participating departments, time from initiation to completion of a DSA, and other performance metrics to be determined



Central DSA repository

1. Central repository for all DSAs that State departments may query to ascertain if data of interest is available, already shared among other departments, and if the interested department may join the agreement
2. Automated solution with drop-down boxes and workflow to expedite creation and final signing of a DSA

Data element level access control automation

1. UI for creation and administration of a matrix – that allows access control by department, roles, and
2. Capability to control access privilege to desired level of granularity
3. Ability to **author and manage the privileges easily from the UI**
4. **Workflow services** to support approval workflows and stewardship hierarchies
5. Integration with other data sources to interface on data sharing privileges and classification

DSA lifecycle management

1. Capability to manage the DSA throughout its lifecycle (Definition, creation, access and management)
2. Automated solution with drop-down boxes and workflow to expedite creation and final signing of a DSA

Not an exhaustive list of capabilities,

Figure 27

Contractor approach will consider the above elements, amongst others that may be revealed during discovery and solution definition. Contractor will employ an iterative implementation approach that allows State to incrementally automate data sharing the organization based on the priorities and value to the business. During the 10 week requirements and solution definition phase, Contractor will identify quick wins to enable a faster path to implementation. For the work effort outlined, Contractor proposes the following approach for the “Discovery & Requirements”, “Solution Definition” and “Implementation Planning” phases as highlighted in the depiction of our framework below.



Timeline, approach and steps

The following high-level timeline (Figure 28) provides an outline of the proposed sequence and duration of activities to accomplish the scope noted in this Work Stream. Contractor will work with the State of Michigan during the first two weeks of the engagement to validate the proposed plan.

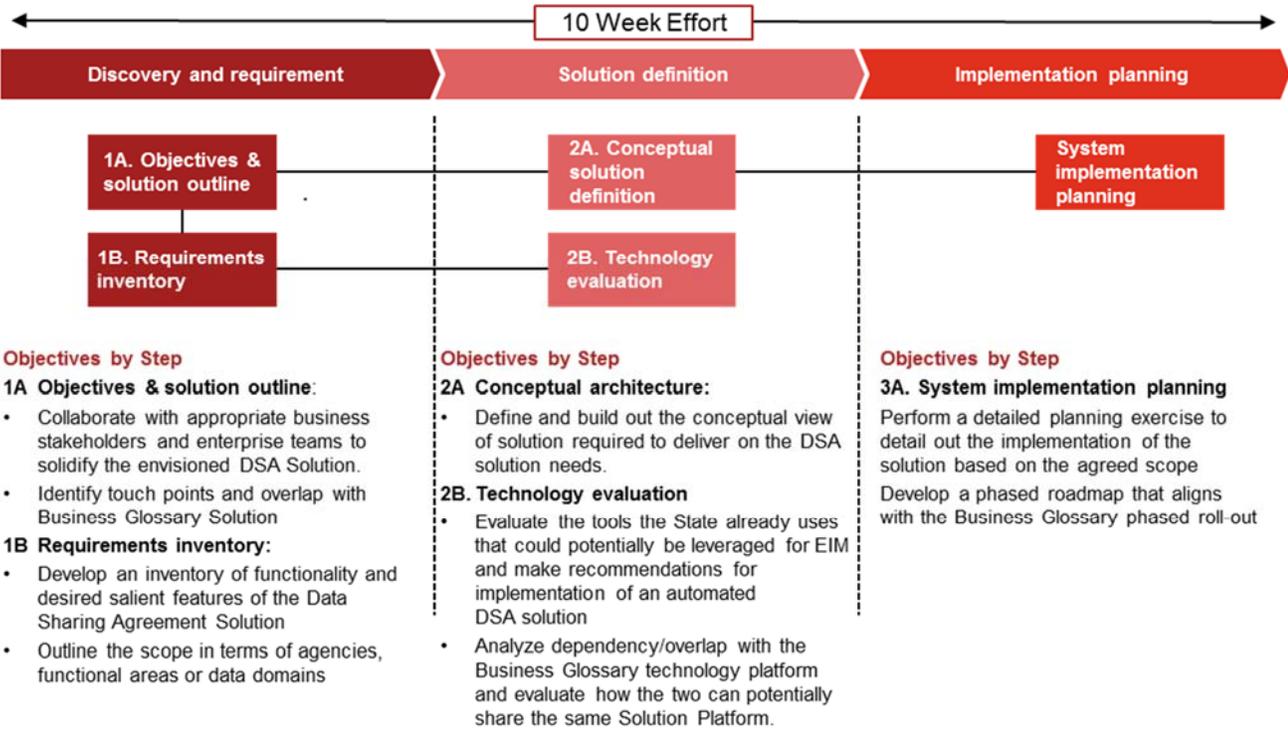


Figure 28

*1 –The iterative approach to system implementation has not been detailed here. It will be detailed out during the implementation planning phase

Contractor Resource Team - staffing model indicated in the table below will be used to support this Work Stream.

Role	Responsibilities	Staffing
Project Manager/ Lead Strategist	<ul style="list-style-type: none"> Has the overall responsibility for the work performed by Contractor in the work stream Responsible for timeliness, cost and quality of the work stream Develops the Implementation Roadmap Per Department Develops the Project Charter, Detail Project Plan Drives standard methodology, tools and templates Responsible for thought-leadership, strategic guidance, technical direction Facilitate interviews, workshops and working sessions with stakeholders to develop initial solution blueprint and detailed conceptual architecture Coordinates effort with the Business Glossary work stream to identify overlap and intersection points Assist in defining leading practices and standards for future state solution leveraging subject matter expertise from past engagements Leads the effort on tools evaluation Works on developing the system implementation plan 	Contractor personnel (1) State personnel (.25)



Role	Responsibilities	Staffing
<i>Technical Analyst Business Analyst</i>	<ul style="list-style-type: none"> Assists in the development of a baseline understanding during discovery phase Works towards developing the inventory of functional requirements and outlining the scope for the initiative Assists in the tools evaluations process Assists in the development of the system implementation plan 	Contractor personnel (2)

Figure 29

Phase 1 Work Stream G - Analytics Strategy

Executive Directive 2013-1 also states that the Michigan Information Management Governance Board shall direct the development of a Michigan Statewide Information and Analytics Plan, focused on long-term statewide information management and analytics goals. The plan is to include the establishment of a centralized information management and analytics service center and be fully integrated with state agency plans and with DTMB's Information and Communication Technology (ICT) Assessment Roadmap, available at <http://michigan.gov/dtmb>. The information and analytics plan is to be incorporated into the EIM strategy for successful cross-boundary collaboration with external partners of state departments and agencies.

Phase 1 Work Stream G - Deliverables

Develop strategic plan for business analytics in State, including:

- Baseline analysis of existing enterprise analytics maturity
- Key enterprise performance indicators for successful analytics strategy – merging cross-industry best practices and key State outcome measures
- Evaluation and recommendations regarding enterprise and departmental human resources required for successful execution of analytics strategy
- Recommendations regarding best practice for organizational structure and placement of information management and analytics unit
- Evaluation and recommendation regarding emerging analytics technology solutions - Contractor will briefly interface with the analytics personnel on ground to ensure direction alignment and incorporation of components critical to the other work streams. This deliverable - Evaluation and recommendation regarding emerging analytics technology solutions, will be deferred until funds are approved for the new budget year; and will be incorporated via Contract amendment.

Phase 1 Work Stream G - Acceptance Criteria

- Materials must be professional, practical, realistic, informative, and effective
- Roadmaps must be clear and concise
- Deliverables must follow SUITE project management and systems engineering processes
- Deliverables must meet industry standards
- In addition, the high level acceptance criteria for Deliverables listed in Section 1.501 must be met

The EIM Program Director and EIM Project Manager have joint responsibility for acceptance of all Deliverables.

Contractor must meet all requirements and provide Deliverables for Work Stream G as described above.

Contractor Approach

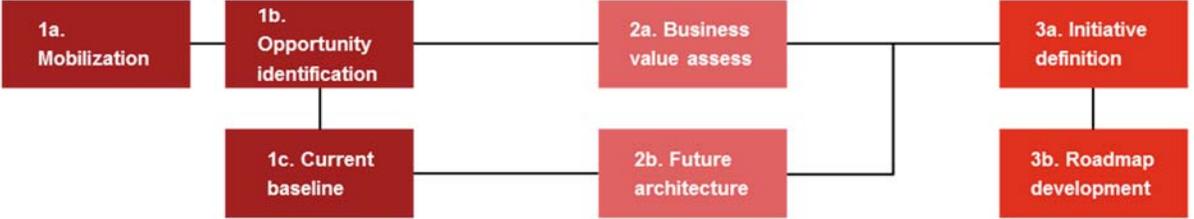
Phase 1 Work Stream G - Analytics Strategy

Illustration of Contractor's phased approach to the establishment of the baseline of current analytical capabilities, definition of a future-state that supports the State's long-term strategic goals, and creation of an actionable roadmap to deliver the future-state:



Objective: Determine potential value and business priorities of improved decision making through enhancement of analytical and information management capabilities.

Objective: Develop strategic roadmap to achieve future information driven capabilities.



Phase one objectives by Step

- 1a. Identify critical stakeholders, gather current documentation, conduct kickoff and alignment
- 1b. Define and group information/analytics needs and opportunities
- 1c. Assess capabilities to meet and deliver on the needs and opportunities using our analytics maturity model

Phase two objectives by Step

- 2a. Estimate business benefits and high level costs from delivering on needs and opportunities
- 2b. Define future architecture across dimensions required to deliver on needs and opportunities

Phase three objectives by Step

- 3a. Define initiatives to realize the business needs and opportunities
- 3b. Sequence execution to optimize value realization

Figure 30

During the opportunity identification and current baseline phase, Contractor will leverage their analytics maturity model to assess existing embedded analytics capabilities and to gauge where the State of Michigan is today and the path that is appropriate. The maturity model analyzes five different dimensions:

Dimension	Assesses
Leadership	How leadership champions the importance of analytics, and effectiveness of decision-making
Strategy	How well does the strategy align to and support the State's strategy
Team capabilities	How are resources organized and skills structured and maintained to deliver effective and insightful analytics
Data	What is the quality of the data and how effectively is the data integrated to support analytical needs
Technology	How well does the technology architecture support information and analytical needs

Figure 31

Contractor must conduct interviews and review existing documentation to assess the level of maturity across each of these dimensions and assign a current-state level of maturity (impaired, localized, aspiring, emergent, and competitor), and also determine the State of Michigan's target level of maturity. The gap between current and target level maturity will inform the capability gap and what types of projects need to be defined and executed to fill the gaps.



During the future-state definition phase, Contractor must conduct focused working sessions and individual interviews to develop the future-state analytics strategy for the State of Michigan. Existing analytical capabilities predominantly support fraud detection, but additional information needs use cases may exist that should be supported. Contractor will focus the definition across the same five dimensions used during the maturity assessment. The following diagram provides representative questions that will be collaboratively answer to make certain that robust and efficient future-state capabilities are designed.

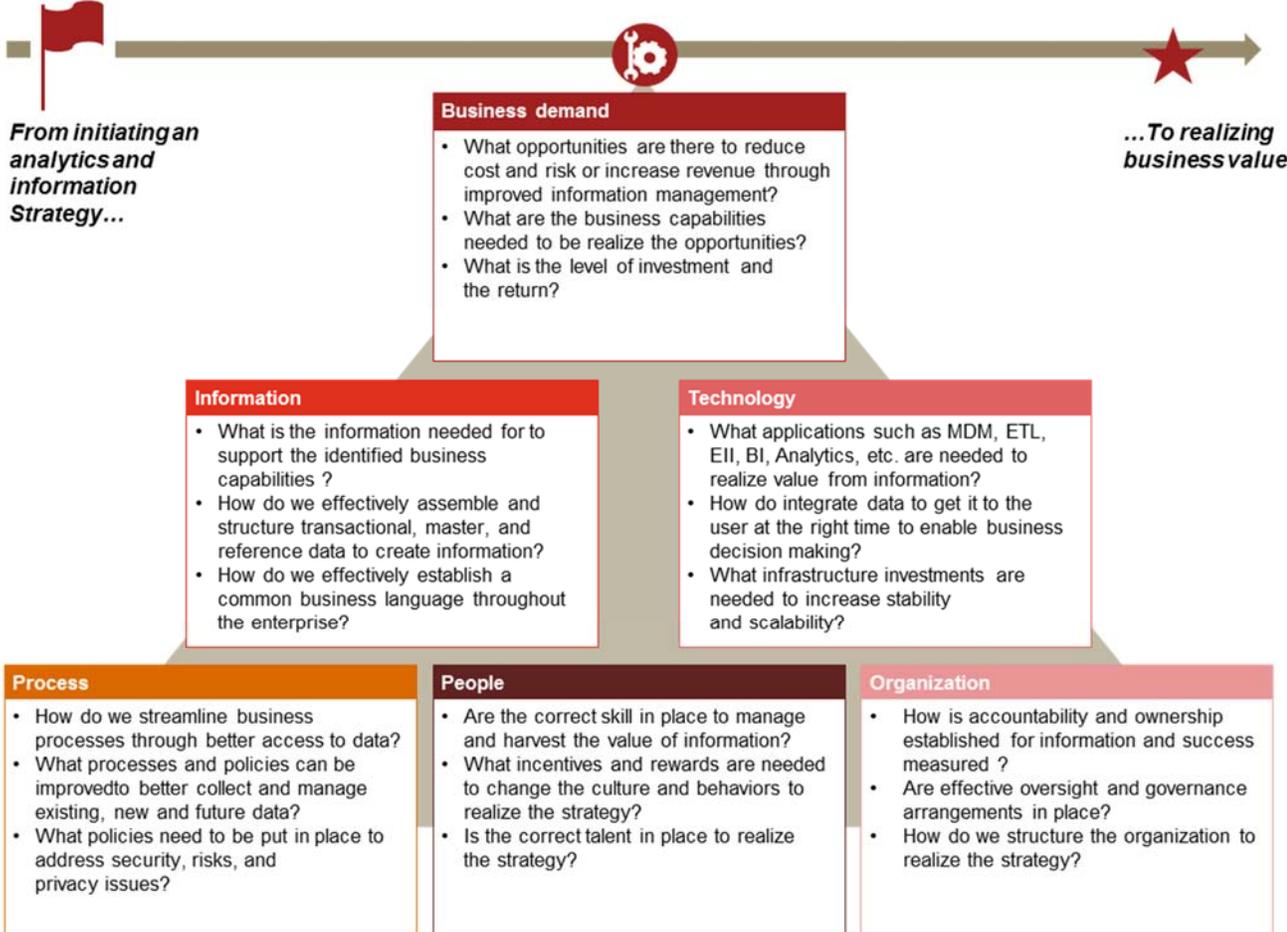


Figure 32
During the Strategic Roadmap phase, Contractor will identify proposed projects to fill the gaps between current-state and target-state and work with State of Michigan leadership to prioritize and sequence the proposed projects. Contractor will also determine the resource needs to support each project and resources needed to support on-going operations after the future-state capabilities have been enabled. The following high-level timeline (Figure 33) provides details on the proposed sequence and duration of activities to accomplish the scope noted in this Work Stream. Contractor will work with the State of Michigan during the first two weeks of the engagement to validate the proposed plan.

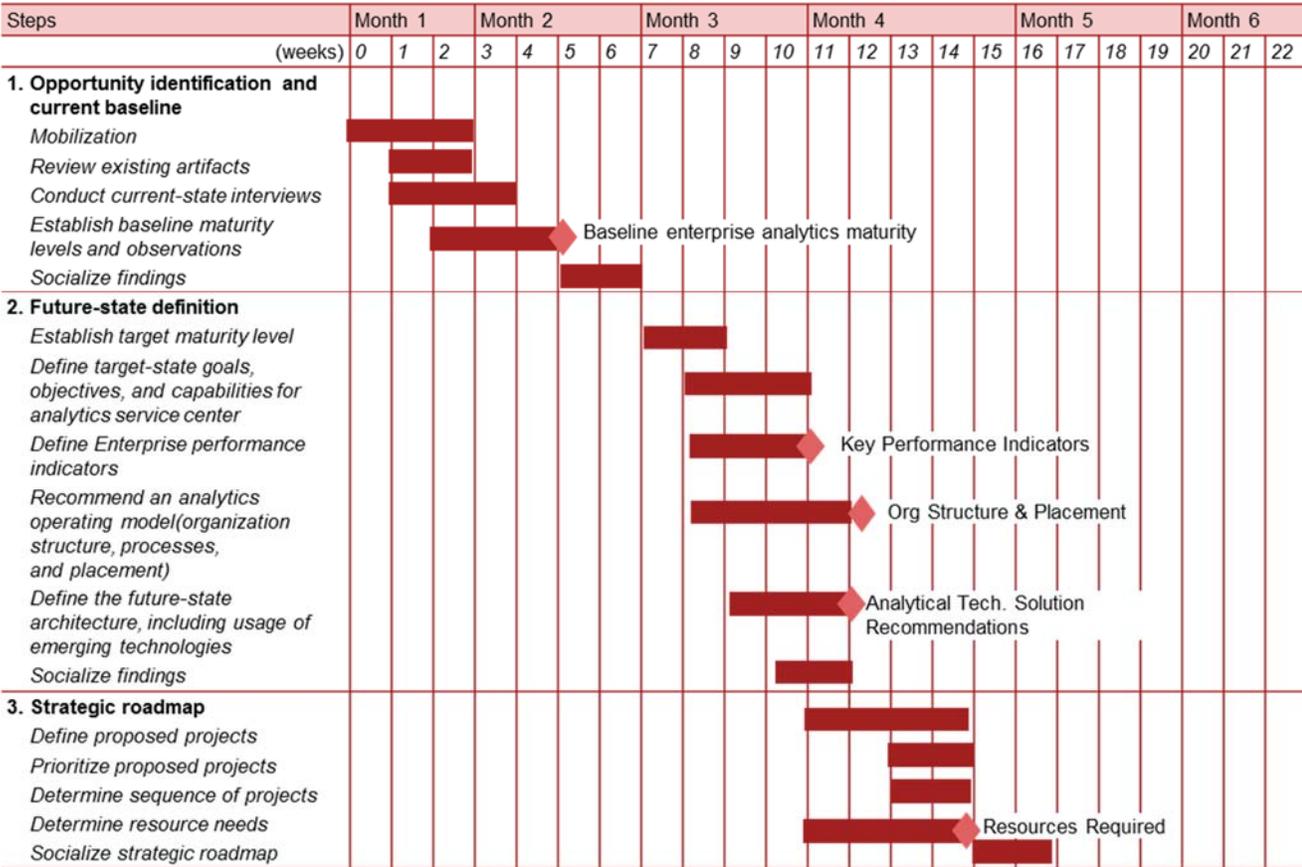


Figure 33

Given the broad reach of this strategy and desired timeline to complete Phase I efforts, the staffing model indicated in the Figure 34 below will support this Work Stream.

Role	Responsibilities	Staffing
<i>Project manager/ Analytics subject matter specialist</i>	<ul style="list-style-type: none"> Responsible for timeliness, cost and quality of the Work Stream outputs and deliverables Manage plan, scope, issues and risks, and status reporting Drive overall Work Stream activities, and inject industry knowledge to inform analysis and deliverables 	PwC personnel (1) State of Michigan (0.5)
<i>Analytics analysts</i>	<ul style="list-style-type: none"> Determine the future-state maturity levels Define end-to-end operating model for the target-state Analytics Service Center Define goals, objectives, and future-state capabilities of a analytics strategy Define performance metrics to support a successful analytics strategy Assess high-level organizational impact of the future state design Identify functional/organizational requirements to enable the future state process model Determine human resource needs (enterprise and departmental) to support the future-state analytics strategy Determine and define suggested projects to address the gap between current-state versus future-state maturity Define future-state analytics architecture Identify analytics capabilities, and evaluate and recommend analytics solutions to enable the future-state capabilities Determine and define suggested projects to address the gap between current-state versus future-state maturity 	PwC personnel (1) State of Michigan (Subject Matter Experts as needed)

Figure 34



Phase I & II Work Stream H - Reserved Bank of Hours: To the extent that the assessment and recommendations bring to light implementation activities which could be completed immediately without adversely affecting other work streams, a bank of hours has been set aside to be utilized at the fixed hourly rates for concurrent completion. In the event such an opportunity presents itself, a contract change notice will be issued to add the Statement of Work (SOW) to the contract utilizing the appropriate portion of set aside hours for this purpose. Management for these activities will be conducted in accordance with all other Deliverables included in this Contract, i.e. SEM and SUITE processes and methodologies, also mentioned in the acceptance criteria.

1.200 Roles and Responsibilities

1.201 Contractor Staff, Roles, and Responsibilities

A. Contractor Staff

The Contractor must commit that staff identified as key personnel will actually perform the assigned work.

Contractor must provide a list of all subcontractors, including firm name, address, contact person, and a complete description of the work to be contracted for approval by the State. Include descriptive information concerning subcontractor's organization and abilities.

The Contractor will identify a Single Point of Contact (SPOC). The duties of the SPOC shall include, but not be limited to:

- Supporting the management of the Contract,
- Facilitating dispute resolution, and
- Advising the State of performance under the terms and conditions of the Contract.

The State reserves the right to require a change in the current SPOC if the assigned SPOC is not, in the opinion of the State, adequately serving the needs of the State.

The Contractor will provide, and update when changed, an organizational chart indicating lines of authority for personnel involved in performance of this Contract and relationships of this staff to other programs or functions of the firm. This chart must also show lines of authority to the next senior level of management and indicate who within the firm will have prime responsibility and final authority for the work.

All Key Personnel may be subject to the State's interview and approval process. Any key staff substitution must have the prior approval of the State. The State has identified the following as key personnel for Phase I of this project:

- Project Manager
- Enterprise Data Architect
- Lead for implementation of organization processes

The Contractor will provide a project manager to interact with the project manager from the State to insure coordination of schedules, communications, and other activities. The Contractor project manager will coordinate all of the activities of the Contractor personnel assigned to the project and create all reports required by State. The Contractor's project manager responsibilities include, at a minimum:

- Manage all defined Contractor responsibilities in this Scope of Services.
- Manage Contractor's subcontractors, if any
- Develop the project plan and schedule, and update as needed
- Serve as the point person for all project issues
- Coordinate and oversee the day-to-day project activities of the project team
- Assess and report project feedback and status
- Escalate project issues, project risks, and other concerns
- Review all project Deliverables and provide feedback
- Proactively propose/suggest options and alternatives for consideration



- Utilize change control procedures
- Prepare project documents and materials
- Manage and report on the project's budget

The Contractor will provide sufficient qualified staffing to satisfy the Deliverables of this Statement of Work.

Contractor Commitment

A. Contractor Staff – Key Personnel

Proposed Resource Name:	Chris O'Brien
Proposed Classification:	Single Point of Contact
Key Personnel:	Yes <input type="checkbox"/> or No <input checked="" type="checkbox"/>
If resource is associated with a subcontractor provide name of company:	
Percentage of time resource will be allocated to project:	20%

Phase I Key Personnel

Proposed Resource Name:	Richard Rowe
Proposed Classification:	Project Manager
Key Personnel:	Yes <input checked="" type="checkbox"/> or No <input type="checkbox"/>
If resource is associated with a subcontractor provide name of company:	
Percentage of time resource will be allocated to project:	100

Proposed Resource Name:	Devapriya Sanyal
Proposed Classification:	Enterprise Data Architect
Key Personnel:	Yes <input checked="" type="checkbox"/> or No <input type="checkbox"/>
If resource is associated with a subcontractor provide name of company:	
Percentage of time resource will be allocated to project:	100

Proposed Resource Name:	Thomas B Minette
Proposed Classification:	Organizational Process Implementation Lead
Key Personnel:	Yes <input checked="" type="checkbox"/> or No <input type="checkbox"/>
If resource is associated with a subcontractor provide name of company:	
Percentage of time resource will be allocated to project:	100%

B. On Site Work Requirements

1. Location of Work

Most work is to be performed, completed, and managed at the Romney Building, 111 S. Capitol Ave., Lansing, MI. However, interviews and work sessions may also occur at various other state



office buildings in downtown Lansing. Depending on the nature of the work and determination by the State project manager, it is also possible that Contractor staff may work remotely and interact with State staff via web and phone conferences.

2. Hours of Operation:

- a. Normal State working hours are 8:00 a.m. to 5:00 p.m. EST, Monday through Friday, with work performed as necessary after those hours to meet project deadlines. No overtime will be authorized or paid.
- b. The State is not obligated to provide State management of assigned work outside of normal State working hours. The State reserves the right to modify the work hours in the best interest of the project.
- c. Contractor shall observe the same standard holidays as State employees. The State does not compensate for holiday pay.

3. Travel:

- a. No travel or expenses will be reimbursed, including but not limited to travel associated with meetings and trainings.
- b. Travel time will not be reimbursed.

4. Additional Security and Background Check Requirements:

Contractor must present certifications evidencing satisfactory Michigan State Police Background checks ICHAT and drug tests for all staff identified for assignment to this project.

Contractor must pay all costs associated with ensuring their staff meets security and background requirements.

1.202 State Staff, Roles, and Responsibilities

The State will provide the following resources for the Contractor’s use on this project:

- Work space
- Printer
- Access to copiers and fax machine

The State project team includes:

- Zak Tomich, EIM program director
- Virginia Hambric, EIM project manager
- Rob Surber, service delivery manager
- Paul Groll, enterprise architect
- Subject Matter Experts (SMEs) as needed

EIM program director

- Act as executive champion and day-to-day sponsor for the project
- Provide executive oversight of the project
- Provide access to department executives as needed
- Deliver various executive briefings as needed
- Serve as executive point of contact for issue escalation and resolution

EIM project manager

- Provide State facilities, as needed
- Coordinate the State resources necessary for the project
- Facilitate coordination between various external contractors
- Facilitate communication between different State departments/divisions
- Review project plan, status, and issues
- Provide acceptance and sign-off of Deliverables/milestones



- Review and sign-off of timesheets and invoices
- Resolve project issues in a timely manner
- Escalate outstanding/high priority issues
- Utilize change control procedures
- Conduct regular and ongoing review of the project to confirm that it meets original objectives and requirements
- Document and archive all important project decisions
- Arrange, schedule and facilitate State staff attendance at all project meetings.

Service delivery manager

- Provide oversight of SMEs and services related to EIM that are provided through the DTMB Center for Shared Solutions
- Liaison to relevant executive and technical resources
- Ensure that proposed EIM technology solutions are consistent with current DTMB service offerings

Enterprise architect

- Provide leadership and technical expertise for all matters related to EIM data architecture
- Provide oversight of technology enablers related to EIM
- Ensure that EIM technology solutions adhere to the DTMB technology roadmap
- Review and approve all Deliverables related to EIM technology

Subject Matter Experts (SMEs)

- Represent the business side of EIM
- Provide use cases
- Provide business requirements
- Review Deliverables such as requirements definitions, functional designs, test plans, and implementation plans
- Test prototype solutions
- Participate in various interviews, workshops, and special events
- Provide demonstrations of current systems

The State is responsible for all management functions and decisions relating to this engagement, including evaluating and accepting the adequacy of the scope of the Services in addressing its needs. The State is also responsible for the results achieved from using the Services or Deliverables, and it is the State's responsibility to establish and maintain its internal controls. The State will designate a competent member of its management to oversee the Services. Contractor expects that the State will provide timely, accurate and complete information and reasonable assistance, and Contractor will perform this engagement on that basis.

Contractor Approach

Project Planning

At the onset of the project, Contractor team will immediately commence project planning activities.

Key program planning activities include:

- **Development of a project plan:** Contractor will develop a detailed project plan that includes concrete activities, durations, and responsibilities that will be used to drive tasks throughout the project.
- **Status reporting process and template:** Contractor will also identify a status reporting process that is approved by DoITT and its project leadership. Contractor will leverage the project plan to measure our team's progress against the identified weekly tasks and Deliverables and will communicate this to the client in a weekly status report.
- **Project governance structure:** Contractor will design a project governance structure that includes weekly touch points with key project stakeholders and other regular meetings with the project steering committee or executive leadership. The frequent communications provided by this governance structure will enable a collaborative approach to conducting project tasks.



Figure 52: Example Project Planning Deliverables

1.300 Project Plan
 1.301 Project Plan Management

Preliminary Project Plan

Contractor will provide a Preliminary Project Plan with the proposal for evaluation purposes, including necessary time frames and Deliverables for the various stages of the project and the responsibilities and obligations of both the Contractor and the State.

1. In particular, the Preliminary Project Plan will include a MS Project plan or equivalent (check the SUITE/PMM standard):
 - a. A description of the Deliverables to be provided under this contract.
 - b. Target dates and critical paths for the Deliverables.
 - c. Identification of roles and responsibilities, including the organization responsible. Contractor is to provide a roles and responsibility matrix.
 - d. The labor, hardware, materials and supplies required to be provided by the State in meeting the target dates established in the Preliminary Project Plan.
 - e. Internal milestones
 - f. Task durations
2. The Preliminary Project Plan shall include the following deliverable/milestones for which payment shall be made.
 - a. Payment to the Contractor will be made upon the completion and acceptance of the deliverable or work stream, not to exceed contractual costs of the phase. A work stream is defined as complete when all of the Deliverables within the work stream have been completed.
 - b. Failure to provide Deliverables by the identified date may be subject to liquidated damages as identified in Article 2.

Orientation Meeting

Within 10 calendar days from execution of the Contract or as otherwise agreed by the parties, the Contractor must attend an orientation meeting to discuss the project. The meeting will be held in Lansing, Michigan at a date and time acceptable to the State and the Contractor.

Performance Review Meetings

The Contractor must attend monthly meetings, at a minimum, to review the Contractor’s performance under the Contract. The meetings will be held in Lansing, Michigan, or by teleconference, as agreed by the State and the Contractor.

Project Control

1. The Contractor will carry out this project under the direction and control of DTMB.
2. Within 5 working days of the execution of the Contract, the Contractor must submit to the State project manager for approval of the final project plan. This project plan must be in agreement with Article 1, Section 1.104 Work and Deliverables, and must include the following:
 - The Contractor’s project organizational structure.



- The Contractor’s staffing table with names and title of personnel assigned to the project. This must be in agreement with staffing of accepted proposal. Necessary substitutions due to change of employment status and other unforeseen circumstances may only be made with prior approval of the State.
 - The project work breakdown structure (WBS) showing sub-projects, activities and tasks, and resources required and allocated to each.
 - The time-phased plan in the form of a graphic display, showing each event, task, and decision point in the WBS.
3. The Contractor must manage the project in accordance with the State Unified Information Technology Environment (SUITE) methodology, which includes standards for project management, systems engineering, and associated forms and templates which is available at: <http://www.michigan.gov/suite>
- a. Contractor must use an automated tool for planning, monitoring, and tracking the Contract’s progress and the level of effort of any Contractor personnel spent performing services under the Contract. The tool shall have the capability to produce:
 - Staffing tables with names of personnel assigned to Contract tasks.
 - Project plans showing tasks, subtasks, Deliverables, and the resources required and allocated to each (including detailed plans for all Services to be performed within the next 90 calendar days, updated semi-monthly).
 - Updates must include actual time spent on each task and a revised estimate to complete.
 - Graphs showing critical events, dependencies and decision points during the course of the Contract.
 - b. Tool(s) used by Contractor for such purposes must produce information of a type and in a manner and format that will support reporting in compliance with the State standards.

1.302 Reports

Contractor must provide a weekly status report to the State EIM project manager that includes:

- Weekly project status
- Summary of activity during the report period
- Accomplishments during the report period
- Work planned for the coming week(s)
- Deliverable status
- Schedule status
- Action item status
- Issues
- Change requests

Final reporting formats must be submitted to the State’s project manager for approval within five business days after the execution of the Contract. Once both parties have agreed to the format of the report, it becomes the standard to follow during the term of the Contract.

1.400 Project Management

1.401 Issue Management

An issue is an identified event that if not addressed may affect schedule, scope, quality, or budget.

The Contractor must maintain an issue log for issues relating to the provision of services under this Contract. The issue log must be communicated to the State’s project manager on an agreed upon schedule, with email notifications and updates. The issue log must be updated and must contain the following minimum elements:

- Description of issue
- Issue identification date
- Responsibility for resolving issue.
- Priority for issue resolution (to be agreed upon by the State and the Contractor)
- Resources assigned responsibility for resolution



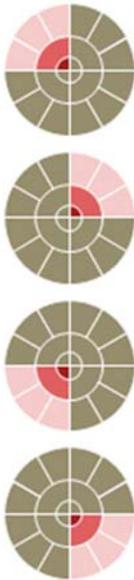
- Resolution date
- Resolution description

Contractor Approach
Project and Issue Management, Reports

Project Management Philosophy

Contractor has developed their own certification of project and program management through their Project Management Institute (PMI). Certified Project Management Professionals (PMP) are entrusted with providing program management and project management services representing hundreds of millions of dollars in projects across our client base, which includes other states, other government agencies, and companies in the commercial sector. Contractor’s thought leaders contribute to the development of the government edition of the PMI Project Management Body of Knowledge (PMBok®), sit on the credentialing committee of the Board of PMI Governors, and participate in PMI’s development of the Organizational Project Management Maturity Model (OPM3®) standard used to assess the maturity of an organization’s project management capability. Contractor’s program management services include program planning, mobilization, execution, implementation, and even recovery. Contractor’s PMO services are meant to complement ones offered by the State, and Contractor will work closely with DTMB assigned program or project manager to meet or exceed the standards established with the SUITE Methodology established by the State.

Figure 53 below is Contractor’s Program Management Framework which describes each of the functions that will be used when providing project oversight to the Program. The framework provides a comprehensive view of project oversight tasks – from managing the program’s stakeholders, to reviewing the program’s financials, to controlling the various resources, including vendors working on the program. When working with DTMB, Contractor’s teams will leverage the tools and methodologies within this framework to provide a consistency across the project plans and DDeliverables.



- Planning Management and Execution**
- Identify milestones required to meet the goals and objectives outlined for program / project
 - Aggregate milestones into phases where longer or more complex set of deliverables are required
 - Identify and link dependencies between milestones to understand critical path of activities and relationship between activities
 - Proactively identify and manage program/project risks, issue and change requests throughout the lifecycle
- Financial Management**
- Develop and assess the business case associated with program/project
 - Develop a program/project budget to include all direct and indirect costs
 - Forecast future program/project costs and perform variance analysis to determine additional financial implications and additional funding requirements
 - Analyze vendor proposals by costs and benefits
 - Manage the business case assumptions are validated and benefits are realized
- Asset Management**
- Obtain and manage appropriate sponsorship
 - Determine appropriate roles and responsibilities for the program/project
 - Acquire, Organize, and Deploy people, technology and finance to successfully execute the program
 - Identify all skill-set needs in order to successfully meet objectives
 - Evaluate and select third-party resource vendors
 - Provide consistent performance measures
 - Identify and introduce comprehensive training initiative to address skill gaps
 - Introduce incentives for meeting or beating milestones and deliver superior performance
- Communications Management**
- Ensure that all program/project stakeholders are identified and involved at the earliest possible point in the lifecycle
 - Create appropriate status and management reports to inform all program/project stakeholders of current progress and decision required
 - Develop communications plan to coordinate program/project messages across stakeholders and to ensure alignment on key messages
 - Communicate program/project issues, risks and changes in a manner to encourage timely response



Figure 53: Program Management Framework

Contractor will work with the appropriate staff from DTMB and engaged Departments to build and manage a collaboration site for the purpose of online communication and collaboration or utilize a State-preferred system or site. The PMO will actively manage the site by posting meeting schedules, issues, risks, and project documents. The site will also host discussion forums on project-related topics. Contractor has developed a lightweight program management solution that utilizes the SharePoint platform to aggregate and report on program data. The Contractor Project Management Tool (PMT) uses out-of-the-box SharePoint functionality to streamline the process associated with tracking and reporting on project and program data. Contractor is able to leverage these existing technologies to quickly mobilize and customize project management tools as needed. The PMT is easily tailored to meet PMO-specific data management and reporting needs. Combined with strong integration with standard Microsoft Office applications such as Microsoft Excel and Access, PMT enables flexible reporting while facilitating reuse and standardization of existing project templates. External data sources can also be integrated into the project management data contained in the PMT using Microsoft Access as a data transfer tool. In addition to facilitating streamlined data collection, the PMT automatically generates status reports at varying levels of the PMO with the ability to drill down to project level reports and individual project management data items.

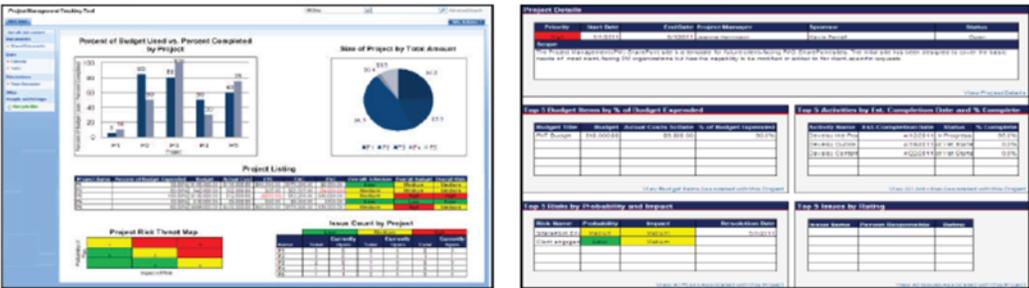


Figure 54: Sample Screen Shots of the PMT reports

Issues & Risk Management:

Many of the State’s projects are large and complex, including EIM, which makes issues and risk management a key component to Contractor’s approach. Early qualification of risks ensures that there are no surprises and serves as an early warning system to the stakeholders. Contractor will actively and diligently work in a collaborative manner with all parties to ensure that any manifested issues are mitigated with minimal impact. To ensure transparency and establish trust, Contractor will establish an accessible and visible repository for logging potential risks and issues. Complimentary to this process is the management of the change control process, which identifies credible and feasible changes, manages the integration of such changes into the project and program plans, and revises the budget, resource allocation and schedule.

An example of Contractor’s issues log is depicted in Figure 55 below:

Work Stream Name	Project Name	Issue Title	Issue Description	Status & Category	Issue Identifier	Issue Owner	Priority	Escalation Level	Date Raised	Resolution Due Date	Resolution Action Required	Progress Notes	Close Date	Reason for Closure	Additional Commentary	Days Until Due	Path
Economic Management	PIII Reporting Improvement Initiative - Leadership	Senior refresh speed	Leadership dashboard server refresh speed for high volume users is less than optimal at this time.	Open - Technical	J. Smith	C. Peltier	1	Project Manager	4/12/2013	5/6/2013	Refresh speed increased.	Meetings underway. Waiting on J. Barmann meeting		NA		24	sites:\641181cc3d\03d726b35\WS\EM\Lists\Issue
Economic Management	PIII Reporting Improvement Initiative - Leadership	Projections data	Projections data is available but still outstanding	Open - Functional	J. Smith	J. Johnson	3	Project Manager	4/12/2013	4/19/2013	Joanne Bramann			NA		7	sites:\641181cc3d\03d726b35\WS\EM\Lists\Issue
Economic Management	PIII Reporting Improvement Initiative - Leadership	HC Sabbaticals data	Data push is not available until team migrates to microstrategy. manual data pull required.	Open - Technical	J. Smith	J. Johnson	2	Project Manager	4/12/2013	6/30/2013				NA		79	sites:\641181cc3d\03d726b35\WS\EM\Lists\Issue
Economic Management	PIII Reporting Improvement Initiative - Leadership	Ongoing EMT Issues	Teams are continuing to face issues while using the EMT tool. This is caused by teams using previous versions rolled out or deleting tabs required for macros to work.	Open - Technical	J. Smith	C. Hein	3	Work Stream Leader	4/15/2013	5/31/2013	Enhanced EMT versions have been posted and patches have also been provided to teams using prior versions. We have also obtained files from teams to update them to avoid ongoing issues.			NA		46	sites:\641181cc3d\03d726b35\WS\EM\Lists\Issue
Economic Management	PIII Economics Management	HC Sabbaticals data	Data push is not available until team migrates to microstrategy. manual data pull required.	Open - Technical	J. Smith	C. Hein	2	Project Manager	4/12/2013	6/30/2013				NA		79	sites:\641181cc3d\03d726b35\WS\EM\Lists\Issue
Economic Management	PIII Economics Management	Ongoing EMT Issues	Teams are continuing to face issues while using the EMT tool. This is caused by teams using previous versions rolled out or deleting tabs required for macros to work.	Open - Technical	J. Smith	C. Hein	3	Work Stream Leader	4/15/2013	6/31/2013	Enhanced EMT versions have been posted and patches have also been provided to teams using prior versions. We have also obtained files from teams to update them to avoid ongoing issues.			NA		46	sites:\641181cc3d\03d726b35\WS\EM\Lists\Issue

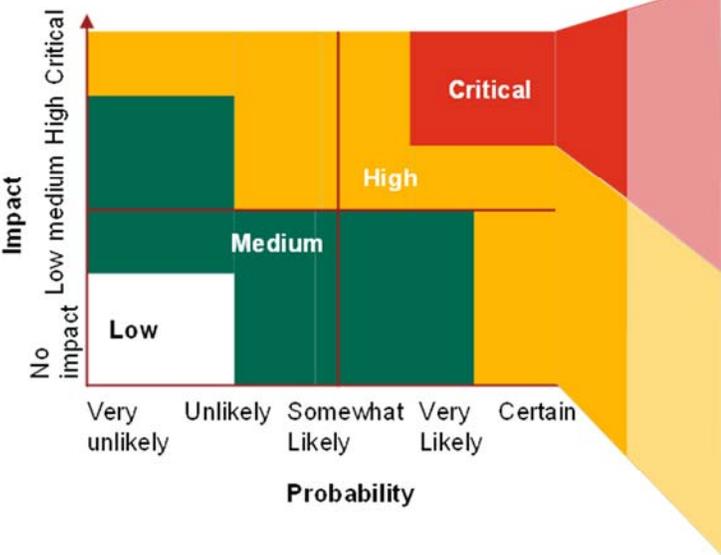
Figure 55: Issues Log

For a large initiative, Contractor generally depicts the issues in a tangible and digestible format to ensure that executive attention is channeled towards high impact concerns. An explanation, such as a presentation, is depicted in Figure 56 below:



Each issue is mapped based on impact and probability to understand which are the most critical problems that need immediate attention

Conceptual Issue Level Determination



- Critical project issues**
- Highest level of risk to the project
 - If unmitigated, issue can halt project
 - Closely managed helps drive "Go-No Go" decision
 - Contingency plans necessary if mitigation not likely
 - Make project/program leadership and business aware of go forward activities and impact to scope, schedule and budget
- High Priority Issues**
- Represents a major issue to the project
 - If unmitigated, issue can jeopardize project rollout and success
 - Must be managed and mitigated quickly
 - Increase effort to mitigate and minimize
 - Inform project/program leadership of those issues that have the highest potential of impacting the project/inform the business as deemed necessary

Defined process to determine issue level

- Process for determination of issue level and overview of medium and low risks discussed in the appendix



Figure 56: Issue Mapping/Decomposition

Contractor will collaborate with the agency to ensure that the time constraints for the issues categories are acceptable and actionable by all the stakeholders. This will ensure their support and buy-in once the project is underway. Collaboration amongst the project stakeholders is of paramount importance. Representative time frames that we have employed at some of our other clients are listed below for reference.

Critical

- Requires an immediate mitigation/resolution plan
- Action due within 2-3 business days
- Inform necessary leadership
- Determine contingency

High

- Requires mitigation/resolution plan
- Set due date for action within 5 business days

Medium

- Requires mitigation/resolution plan if they become more critical
- Take action within 10 – 15 business days

Low

- Monitor/Track to ensure that risk/issue level does not change
- Seek to close when feasible

An escalation process will be defined at the start of the project with DoITT and the Requesting Agency. The process will identify the reporting tiers, and the individuals required for the messaging. The escalation procedures should also be defined for the case in which an issue or risk arises. If agreement cannot be reached on the issue or risk, the matter should be discussed by the agency and if impact dictates, with involvement from the Steering Committee. When and if an agreement is not forthcoming, the leader of the Steering Committee should recommend possible resolutions.



1.402 Risk Management

A risk is an unknown circumstance or event that, if it occurs, may have a positive or negative impact on the project. The Contractor must establish a risk management plan and process, including the identification and recording of risk items, prioritization of risks, definition of mitigation strategies, monitoring of risk items, and periodic risk assessment reviews with the State.

Contractor must submit a risk management plan to the State for approval within 20 business days after the effective date of the Contract. The risk management plan will be developed during the initial planning phase of the project, and must be in accordance with the State’s PMM methodology. Once both parties have agreed to the format of the plan, it is the standard to follow for the duration of the Contract. The plan must be updated biweekly, or as otherwise agreed upon.

The Contractor must provide a method and tool to track risks. The Contractor must identify risks for each phase of the project. Mitigating or eliminating risks in connection with this project is Contractor’s responsibility.

Contractor Approach

Issues/Risk Management

Through the continuous conversation between the Contractor team and the State, the Contractor will always be incorporating feedback into the development process. By doing this, Contractor is better able to ensure that developed DDeliverables and work products meet client expectations, thereby eliminating re-work and containing costs. Risk reviews are employed throughout project execution based on the nature, complexity, and impact of the work products being developed.

Risk is also mitigated through Contractor’s structured Risk Management Process, described in the Figure 58 below. This process enables the Project Manager to proactively identify and manage risks and issues, thereby promoting successful delivery of the project within established timeframes and cost constraints.

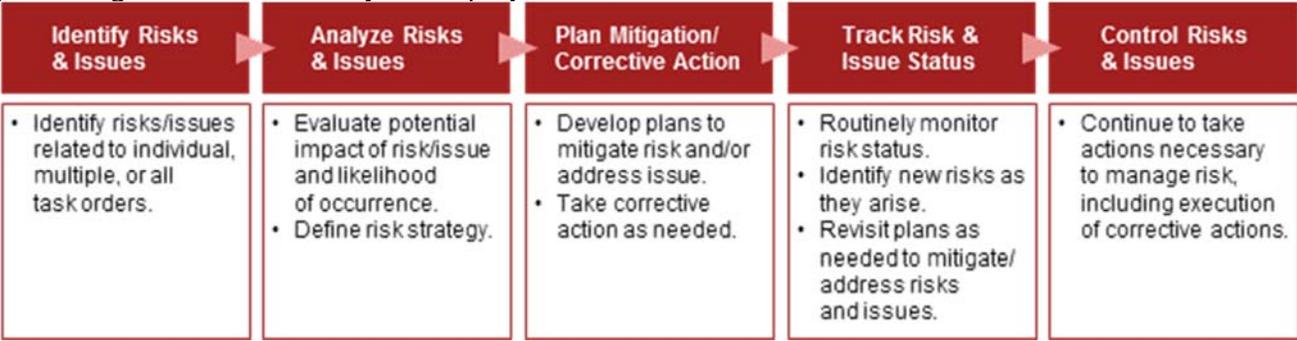


Figure 58: Risk Management Process

Contractor has two basic goals: to be a trusted advisor to leading organizations and to advance the practice of management. In Contractor’s view, an open and frank relationship is the first step toward having successful engagements, and this is the cornerstone of that relationship. At times, this 'frankness' can lead to uncomfortable situations. Difficult messages must be delivered (tactfully), but this is a key part of building the trust that makes the relationship work.

In terms of practices and strategies, key elements of Contractor’s approach are as follows:

- **Provide a clear escalation path:** Contractor’s engagement leads will be available at any time for discussions with the State, including performance mitigation discussions.
- **Act transparently:** Contractor will make effective communications across multiple dimensions a priority (e.g., within the project team, with the leadership group, with the broader stakeholder group), but this is not enough. Contractor will have a project team which integrates consultant and client personnel, preferably working in close physical proximity, so that both formal and informal interactions are open and frequent.
- **Build a fact base:** Contractor will work to build and validate a fact base to support decision making. This fact base likely will not provide total clarity for all difficult decisions, but it will isolate the gray areas and frame any criticism of current strategies, efforts, or results. This facilitates a quick, productive discussion and consensus building around key decisions.



- **Share bad news immediately:** While Contractor is always working to avoid surprises and to mitigate risks, Contractor believes in sharing any bad news immediately. This ensures that problems are addressed as quickly as possible and that all efforts are focused on forward progress over spin control.
- **Work incrementally:** When possible, Contractor will recommend that the State stage work appropriately, providing clear decision points for our teams where we can jointly decide to continue, change course, or stop an effort. This approach provides flexibility, both for the project itself and for the services provided by Contractor; it also ensures that the relationship gets a check-up periodically.
- **Take advantage of external perspectives:** Contractor will collect both quantitative and qualitative feedback on its approaches, activities, and recommendations, both from the State and from Contractor experts.
- **Take the long view:** Contractor’s interest is a long-term relationship with DTMB and other State of Michigan Departments. Contractor is willing to make compromises in the short term that will prove to DTMB and any other agencies that Contractor wants to work together in the long term. It also means that we will accept the agency’s wishes at face value when conflicts arise.

1.403 Contract Change Management

Change management is defined as the process to communicate, assess, monitor, and control all changes to system resources and processes. The State also employs change management in its administration of the Contract.

The Contractor must submit in writing proposed Contract changes to the State’s Contract Administrator. If approved by the Contract Administrator, the Contract Administrator will submit the change request to the DTMB-Procurement Buyer, who will then make recommendations to the appropriate DTMB-Procurement Director. If the DTMB-Procurement Director agrees with the proposed change, and all required approvals are obtained (including State Administrative Board), the DTMB-Procurement Buyer will amend the Contract via a Contract Change Notice.

Contractors who provide products or services prior to the issuance of a formal Contract Change Notice risk non-payment for the out-of-scope goods or services.

1.500 Acceptance

1.501 Criteria

The Acceptance Criteria for each Work Stream is identified after the requirements and deliverable section of each Work Stream. In conjunction with the specific criteria listed, the EIM project manager will rely on SUITE project management and systems engineering processes as acceptance criteria for all Deliverables. The DTMB project manager will also rely on industry standards and consult with the DTMB project team and agency representatives as criteria for selected Deliverables.

The State will accept a fully-documented detailed report in Microsoft PowerPoint or other format as appropriate that meets Deliverable requirements described above as well as a summary presentation in Microsoft PowerPoint and a narrative executive summary in Microsoft Word. In addition, the acceptance criteria for Deliverables listed in Section 1.501 must be met.

For major improvement recommendations that can be quantitatively analyzed, Contractor will provide financial analysis that includes savings and costs, as well as additional calculations such as benefits, return on investment, total cost of ownership, and payback period, as appropriate. For major improvement recommendations of a qualitative nature, Contractor will provide general estimates of savings and costs as feasible.

1.600 Compensation and Payment

1.601 Compensation and Payment

This is a firm, fixed price contract. Payment will be made based on approved Deliverables, as itemized in each work stream in section 1.104 Work and Deliverables. Within 5 business days of execution of the Contract, the Contractor will submit a proposed payment schedule based on the firm, fixed prices outlined in Exhibit A, including the price of each deliverable, group of Deliverables, or work stream for which the Contractor will submit invoices.

**Method of Payment**

The project will be paid through Electronic Funds Transfer (EFT) based on approved invoices submitted for work Deliverables approved and accepted by the State for Deliverables identified in a State Purchase Order issued against the contract. Contractor must be registered with the State's financial system to receive EFT payments. The Costs Table(s) attached must be used as the format for submitting pricing information.

The pricing Schedule is attached as Exhibit A.

Travel

The State will not pay for any travel expenses, including hotel, mileage, meals, parking, etc. Travel time will not be reimbursed.

Some work can be performed off site if this would cut travel expenses.

Statements of Work and Issuance of Purchase Orders

- Unless otherwise agreed by the parties, each Statement of Work will include:
 1. Background
 2. Project Objective
 3. Scope of Work
 4. Deliverables
 5. Acceptance Criteria
 6. Project Control and Reports
 7. Specific Department Standards
 8. Payment Schedule
 9. Travel and Expenses
 10. Project Contacts
 11. Agency Responsibilities and Assumptions
 12. Location of Where the Work is to be performed
 13. Expected Contractor Work Hours and Conditions

- The parties agree that the Services/Deliverables to be rendered by Contractor pursuant to this Contract (and any future amendments of it) will be defined and described in detail in Statements of Work or Purchase Orders (PO) executed under this Contract. Contractor shall not be obliged or authorized to commence any work to implement a Statement of Work until authorized via a PO issued against this Contract. Contractor shall perform in accordance with this Contract, including the Statements of Work/Purchase Orders executed under it.

Invoicing

Contractor will submit properly itemized invoices to

DTMB – Financial Services

Accounts Payable

P.O. Box 30026

Lansing, MI 48909

or

DTMB-Accounts-Payable@michigan.gov

Invoices must provide and itemize, as applicable:

- Contract number;
- Purchase Order number
- Contractor name, address, phone number, and Federal Tax Identification Number;
- Description of any commodities/hardware, including quantity ordered;
- Date(s) of delivery and/or date(s) of installation and set up;
- Price for each item, or Contractor's list price for each item and applicable discounts;



- Maintenance charges;
- Net invoice price for each item;
- Shipping costs;
- Other applicable charges;
- Total invoice price; and
- Payment terms, including any available prompt payment discount.

The State may pay maintenance and support charges on a monthly basis, in arrears. Payment of maintenance service/support of less than one (1) month's duration shall be prorated at 1/30th of the basic monthly maintenance charges for each calendar day.

Incorrect or incomplete invoices will be returned to Contractor for correction and reissue.



STATE OF MICHIGAN

Article 2 Standard Contract Terms

This STANDARD CONTRACT (“**Contract**”) is agreed to between the State of Michigan (the “**State**”) and PricewaterhouseCoopers LLP (“**Contractor**”), a Delaware limited liability partnership. This Contract is effective on **June 24, 2015 (“Effective Date”)**, and unless earlier terminated as set forth herein, **expires on June 24, 2018.**

At the State’s option and upon the mutual written agreement of the parties, this Contract may be renewed for up to **three (3) additional one (1) - year period(s).** Renewal automatically extends the Term of this Contract.

The parties agree as follows:

- 1. Duties of Contractor.** Contractor will perform such services as agreed and described in **Article 1 – Statement of Work** (the “Services”). Contractor will perform the Services in accordance with the Contract requirements and the Standards for Consulting Services established by the American Institute of Certified Public Accountants (AICPA). Contractor's role is advisory only. Contractor will not provide an audit or attest opinion or other form of assurance, and Contractor will not verify or audit any information provided to Contractor. Contractor will not provide legal or advocacy services of any kind. The scope of this Contract does not encompass, and neither Contractor, nor the other PwC Firms (hereinafter defined) or Contractor’s subcontractors will sell, resell or develop any software to or hardware for the State hereunder.

Contractor must also be clearly identifiable while on State property by wearing identification issued by the State, and clearly identify themselves whenever making contact with the State.

- 2. Notices.** All notices and other communications required or permitted under this Contract must be in writing and will be considered given and received: (a) when verified by written receipt if sent by courier; (b) when actually received if sent by mail without verification of receipt; or (c) when verified by automated receipt or electronic logs if sent by facsimile or email.

If to State:	If to Contractor:
Christine Mitchell 525 West Allegan, 1st Floor, NE Lansing, MI 48909-7526 Mitchellc4@michigan.gov 517-284-7020	Todd Hoffman, Partner PwC 500 Woodward Ave. Detroit MI, 48226 Todd.Hoffman@us.pwc.com (917) 664-6188

- 3. Contract Administrator.** The Contract Administrator for each party is the only person authorized to modify any terms and conditions of this Contract (each a “**Contract Administrator**”):

State:	Contractor:
Christine Mitchell 525 West Allegan, 1st Floor, NE Lansing, MI 48909-7526 Mitchellc4@michigan.gov 517-284-7020	Todd Hoffman, Partner PwC 500 Woodward Ave. Detroit MI, 48226 Todd.Hoffman@us.pwc.com (917) 664-6188



4. **Project Manager.** The Project Manager for each party will monitor and coordinate the day-to-day activities of the Contract:

State: Virginia Hambric, Project Manager Department of Technology, Management, and Budget 111 S. Capital Ave., 4th Floor Lansing, MI 48933 517.241.9617	Contractor: Richard Rowe [Street Address] [City, State, Zip] [Email] [Phone]
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5. **Reserved.**

6. **Insurance Requirements.** Contractor must maintain the insurances identified below and is responsible for all deductibles. All required insurance must: (a) protect the State from claims that may arise out of, or result from Contractor's or a subcontractor's performance; (b) be primary and non-contributing to any comparable liability insurance (including self-insurance) carried by the State solely with regards to Contractor's actions in the performance of this Agreement; and (c) At the time of Contract signing, Contractor's insurance providers for Commercial General Liability, auto, and workers' compensation coverage must have an A.M. Best rating of A. Throughout the Contract term, all of the Contractor's insurance providers required under Section 6 will have a minimum A- rating. All policies of insurance required in the Contract must be issued by companies that have been approved to do business in the State. See www.michigan.gov/deleg. Certificate of Insurance must be provided as a condition of award.

Insurance Type	Additional Requirements
Commercial General Liability Insurance	
<u>Minimal Limits:</u> \$1,000,000 Each Occurrence Limit \$1,000,000 Personal & Advertising Injury Limit \$2,000,000 General Aggregate Limit \$2,000,000 Products/Completed Operations <u>Deductible Maximum:</u> \$50,000 Each Occurrence	Contractor must have their policy endorsed to add "the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents" as additional insureds using blanket additional insured endorsement.
Business Automobile Liability Insurance	
<u>Minimal Limits:</u> \$1,000,000 Per Occurrence	Covering non-owned and hired vehicles
Workers' Compensation Insurance	
<u>Minimal Limits:</u> Coverage according to applicable laws governing work activities.	Waiver of subrogation, except where waiver is prohibited by law.
Employers Liability Insurance	
<u>Minimal Limits:</u> \$500,000 Each Accident \$500,000 Each Employee by Disease \$500,000 Aggregate Disease.	
Professional Liability (Errors and Omissions) Insurance	
<u>Minimal Limits:</u> \$3,000,000 Each Occurrence \$3,000,000 Annual Aggregate	Coverage shall include network security and privacy liability, including, notification cost, regulatory defense, website media content liability and penalties.



If any of the required policies provide **claim-made** coverage, the Contractor must: (a) provide coverage with a retroactive date before the effective date of the contract or the beginning of contract work; and (b) maintain coverage and provide evidence of coverage for at least two (2) years after completion of the contract of work; and (c) if coverage is canceled or not renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective date, Contractor must purchase extended reporting coverage for a minimum of three (3) years after completion of work.

Contractor must: (a) provide insurance certificates to the Contract Administrator, containing the agreement or purchase order number, at Contract formation and within 30 calendar days of the expiration date of the applicable policies; (b) require that subcontractors maintain the required insurances contained in this Section; (c) notify the Contract Administrator within 5 business days if any insurance is cancelled; and (d) waive all rights against the State for damages covered by insurance. Failure to maintain the required insurance does not limit this waiver.

This Section is not intended to and is not be construed in any manner as waiving, restricting or limiting or expanding the liability of either party for any obligations under this Contract (including any provisions hereof requiring Contractor to indemnify, defend and hold harmless the State).

7. **N/A.**

8. **N/A.**

9. **Independent Contractor.** Contractor is an independent contractor and assumes all rights, obligations and liabilities set forth in this Contract. Contractor, its employees, and agents will not be considered employees of the State. No partnership or joint venture relationship is created by virtue of this Contract. Contractor, and not the State, is responsible for the payment of wages, benefits and taxes of Contractor's employees and any subcontractors. Contractor is not a fiduciary or agent of the State, and shall not perform any obligation of the State, whether regulatory or contractual, nor shall Contractor negotiate on the State's behalf. Prior performance does not modify Contractor's status as an independent contractor.

10. **Subcontracting.** Contractor is the U.S. firm of the global network of separate and independent PricewaterhouseCoopers firms (exclusive of Contractor, the "Other PwC Firms"). During its performance of the Services, Contractor may draw on the resources of or subcontract with Other PwC Firms. Contractor may contract with third parties (which provide Contractor internal business, administrative, technical, outsourcing, regulatory compliance functions or other "back office" support in connection with the Services) and, with the State's prior written consent may contract with other third party subcontractors who will provide Services hereunder (each of the above, hereinafter referred to as a "PwC Subcontractor." The State agrees that Contractor may provide information Contractor receives in connection with this Contract to the PwC Subcontractors for such purposes. Contractor will be solely responsible for the provision of the Services (including those performed by the PwC Subcontractors) and for the protection of the information provided to the PwC Subcontractors. Contractor must: (a) be the sole point of contact to the State regarding all contractual matters, including payment and charges for all Services; and (b) make all payments to the PwC Subcontractors for Services hereunder in accordance with the terms of the applicable subcontracts. Contractor remains responsible for the completion of the Services, compliance with the terms of this Contract, and the acts and omissions of the subcontractor. The State, in its sole discretion, may require the replacement of any subcontractor.

11. **Staffing.** The State's Contract Administrator may require Contractor to remove or reassign personnel by providing a written notice to Contractor. Contractor shall promptly remove such individual from the performance of the Services and shall replace such individual.

A. Contractor Key Personnel

1. The Contractor must provide the Project Manager with the names of the Key Personnel.



2. Key Personnel must be dedicated as defined in the Statement of Work to the Project for the duration of Phase 1 in the applicable Statement of Work with respect to other individuals designated as Key Personnel for that Statement of Work.
3. The State shall have the right to recommend and approve in writing the initial assignment, as well as any proposed reassignment or replacement, of any Key Personnel. Before assigning an individual to any Key Personnel position, Contractor shall notify the State of the proposed assignment, shall introduce the individual to the appropriate State representatives, and shall provide the State with a resume and any other information about the individual reasonably requested by the State. The State reserves the right to interview the individual before granting written approval. In the event the State finds a proposed individual unacceptable, the State shall provide a written explanation including reasonable detail outlining the reasons for the rejection.
4. Contractor must not remove any Key Personnel from their assigned roles on Phase 1 of the Contract without the prior written consent of the State. The Contractor's removal of Key Personnel without the prior written consent of the State is an unauthorized removal ("Unauthorized Removal"). Unauthorized Removals does not include replacing Key Personnel for reasons beyond the reasonable control of Contractor, including illness, disability, leave of absence, personal emergency circumstances, resignation or for cause termination of the Key Personnel's employment. The Contractor with the State must review any Key Personnel replacements, and appropriate transition planning will be established. Any Unauthorized Removal may be considered by the State to be a material breach of the Contract, in respect of which the State may elect to exercise its termination and cancellation rights.

The Contractor must notify the Contract Compliance Inspector and the Contract Administrator at least 10 business days before redeploying non-Key Personnel, who are dedicated to primarily to the Project, to other projects. If the State does not object to the redeployment by its scheduled date, the Contractor may then redeploy the non-Key Personnel

B. Contractor Personnel Location

All staff assigned by Contractor to work on the Contract shall perform their duties either primarily at Contractor's offices and facilities or at State facilities. Without limiting the generality of the foregoing, Key Personnel shall, at a minimum, spend at least the amount of time on-site at State facilities as indicated in the applicable Statement of Work. Subject to availability, selected Contractor personnel may be assigned office space to be shared with State personnel.

12. **Background Checks.** Contractor must perform background checks on those of its employees and subcontractors and its employees prior to their assignment. The scope is at the discretion of the State and documentation must be provided as requested. Upon State's request, Contractor shall provide State with a copy of the Contractor Background Screening Program. Contractor is responsible for all costs associated with the requested background checks.
13. **Assignment.** Neither party may assign or transfer this Contract or any rights, obligations, claims or proceeds from claims arising hereunder, to any other party without the prior consent of the other party, and any assignment without such consent shall be void and invalid.
14. **Reserved.**
15. **Ordering.** Contractor is not authorized to begin performance until receipt of authorization through the issuance of a State Purchase Order referencing the Contract as identified in Article 1 - Statement of Work.
16. **Deliverable Acceptance Process. Acceptance criteria are listed for each Deliverable under each work stream in Article 1.** Unless a different time period is set forth in the Statement of Work, State shall notify Contractor, in writing within fifteen (15) working days following receipt of any Deliverable, for which Contractor has responsibility for delivery, if such Deliverable is not acceptable. The State's notice shall specify in reasonable detail the reasons such Deliverable has been deemed unacceptable. If the notice of non-acceptance is not sufficiently detailed to allow Contractor to determine why such Deliverable is unacceptable, Contractor may request in writing that State provide additional information. The passage of ten (10) working days from the date of such request without the provision of such additional information shall constitute final



acceptance of such Deliverable by State. Within fifteen (15) days after receipt of sufficient notice, Contractor will, at its option, either fix the problems identified in such Deliverable at no additional cost, or present State with a plan to fix such problems within a reasonable period of time under the circumstances. Acceptance by State shall not be unreasonably withheld. The passage of fifteen (15) working days without notice of non-acceptance following delivery to or use by the State of such Deliverable shall constitute final acceptance by the State. If acceptance with deficiencies or rejection of the Contract Activities impacts the content or delivery of other non-completed Contract Activities, the parties' respective Program Managers must determine an agreed to number of days for re-submission that minimizes the overall impact to the Contract. However, nothing herein affects, alters, or relieves Contractor of its obligations to correct deficiencies in accordance with the time response standards set forth in this Contract. If Contractor is unable or refuses to correct the deficiency within the time response standards set forth in this Contract, the State may cancel the order in whole or in part. The State, or a third party identified by the State, may perform the Contract Activities and recover the difference between the cost to cure and the Contract price plus an additional 10% administrative fee.

17. **N/A.**

18. **N/A.**

19. **Reserved.**

20. **Terms of Payment.** Invoices must conform to the requirements communicated from time-to-time by the State. All undisputed amounts are payable within 45 days of the State's receipt. Contractor may only charge for Contract Activities performed and accepted as specified in Article 1 - Statement of Work. Invoices must include an itemized statement of all charges. The State will pay the amounts described in Exhibit A, for firm, fixed priced Deliverables identified in the Statement of Work.

The State is exempt from State sales tax for direct purchases and may be exempt from federal excise tax, if Services purchased under this Agreement are for the State's exclusive use. Notwithstanding the foregoing, all prices are inclusive of taxes, and Contractor is responsible for all sales, use and excise taxes, and any other similar taxes, duties and charges of any kind imposed by any federal, state, or local governmental entity on any amounts payable by the State under this Contract.

The State has the right to withhold payment of any disputed amounts until the parties agree as to the validity of the disputed amount. The State will notify Contractor of any dispute within a reasonable time. Payment by the State will not constitute a waiver of any rights as to Contractor's continuing obligations, including claims for deficiencies or substandard Contract Activities. Contractor's acceptance of final payment by the State constitutes a waiver of all claims by Contractor against the State for payment under this Contract, other than those claims previously filed in writing on a timely basis and still disputed.

The State will only disburse payments under this Contract through Electronic Funds Transfer (EFT). Contractor must register with the State at <http://www.michigan.gov/cpexpress> to receive electronic fund transfer payments. If Contractor does not register, the State is not liable for failure to provide payment.

21. **Liquidated Damages.** Liquidated damages, if applicable, will be assessed in accordance with the terms listed here below:

The parties acknowledge that late or improper completion of the Contract Activities will cause loss and damage to the State, and that it would be impracticable and extremely difficult to fix the actual damage sustained by the State as a result. Therefore, Contractor and the State agree that if there is late or improper completion of the Contract Activities and the State does not elect to exercise its termination rights, the State is entitled to collect liquidated damages in the amount of \$5,000.00 per Deliverable and an additional \$100.00 per day for each day Contractor fails to remedy the late or improper completion of the Contract Activities.

Unauthorized Removal of Key Personnel

It is acknowledged that an Unauthorized Removal will interfere with the timely and proper completion of the Contract, to the loss and damage of the State, and that it would be impracticable and extremely difficult to fix



the actual damage sustained by the State as a result of any Unauthorized Removal. Therefore, Contractor and the State agree that in the case of any Unauthorized Removal in respect of which the State does not elect to exercise its rights under Section 23 below, the State may assess liquidated damages against Contractor as specified below.

For the Unauthorized Removal of any Key Personnel designated in the applicable Statement of Work, the liquidated damages amount is \$25,000.00 per individual if the Contractor identifies a replacement approved by the State and assigns the replacement to the Project to shadow the Key Personnel who is leaving for a period of at least 30 days before the Key Personnel's removal.

If Contractor fails to assign a replacement to shadow the removed Key Personnel for at least 30 days, in addition to the \$25,000.00 liquidated damages for an Unauthorized Removal, Contractor must pay the amount of \$833.33 per day for each day of the 30 day shadow period that the replacement Key Personnel does not shadow the removed Key Personnel, up to \$25,000.00 maximum per individual. The total liquidated damages that may be assessed per Unauthorized Removal and failure to provide 30 days of shadowing must not exceed \$50,000.00 per individual.

22. **Stop Work Order.** The State may suspend any or all activities under the Contract at any time. The State will provide Contractor a written stop work order detailing the suspension. Contractor must comply with the stop work order upon receipt. Within 90 calendar days, or any longer period agreed to by Contractor, the State will either: (a) issue a notice authorizing Contractor to resume work, or (b) terminate the Contract or purchase order. The State will not pay for Contract Activities, Contractor's lost profits, or any additional compensation during a stop work period.
23. **Termination for Cause.** The State may terminate this Contract for cause, in whole or in part, if Contractor, as determined by the State: (a) endangers the value, integrity, or security of any location, data, or personnel; (b) becomes insolvent, petitions for bankruptcy court proceedings, or has an involuntary bankruptcy proceeding filed against it by any creditor; (c) engages in any conduct that may expose the State to liability; (d) breaches any of its material duties or obligations; or (e) fails to cure a breach within the time stated in a notice of breach. Any reference to specific breaches being material breaches within this Contract will not be construed to mean that other breaches are not material.

If the State terminates this Contract under this Section, the State will issue a termination notice specifying whether Contractor must: (a) cease performance immediately, or (b) continue to perform for a specified period. If it is later determined that Contractor was not in breach of the Contract, the termination will be deemed to have been a Termination for Convenience, effective as of the same date, and the rights and obligations of the parties will be limited to those provided in Section 24, Termination for Convenience.

The State will only pay for amounts due to Contractor for Contract Activities accepted by the State on or before the date of termination, subject to the State's right to set off any amounts owed by the Contractor for the State's reasonable costs in terminating this Contract. The Contractor must pay all reasonable costs incurred by the State in terminating this Contract for cause, including administrative costs, attorneys' fees, court costs, transition costs, and any costs the State incurs to procure the Contract Activities from other sources.

24. **Termination for Convenience.** The State may immediately terminate this Contract in whole or in part without penalty and for any reason, including but not limited to, appropriation or budget shortfalls. The termination notice will specify whether Contractor must: (a) cease performance of the Contract Activities immediately, or (b) continue to perform the Contract Activities in accordance with Section 26, Transition Responsibilities. If the State terminates this Contract for convenience, the State will pay all reasonable costs, as determined by the State, for State approved Transition Responsibilities.
- 25.
26. **Transition Assistance Responsibilities.** Upon termination or expiration of this Contract for any reason, Contractor must, for a period of time specified by the State (not to exceed 90 calendar days), provide all



reasonable transition assistance requested by the State, to allow for the expired or terminated portion of the Contract Activities to continue without interruption or adverse effect, and to facilitate the orderly transfer of such Contract Activities to the State or its designees. Such transition assistance may include, but is not limited to: (a) continuing to perform the Contract Activities at the established Contract rates; (b) taking all reasonable and necessary measures to transition performance of the work, including all applicable Contract Activities, training, equipment, software, leases, reports and other documentation, to the State or the State's designee; (c) taking all necessary and appropriate steps, or such other action as the State may direct, to preserve, maintain, protect, or return to the State all materials, data, property, and confidential information provided directly or indirectly to Contractor by any entity, agent, vendor, or employee of the State; (d) transferring title in and delivering to the State, at the State's discretion, all completed or partially completed Deliverables prepared under this Contract as of the Contract termination date; and (e) preparing an accurate accounting from which the State and Contractor may reconcile all outstanding accounts (collectively, "**Transition Responsibilities**"). This Contract will automatically be extended through the end of the transition period.

27. **General Indemnification.** Contractor must defend, indemnify and hold the State, its departments, divisions, agencies, offices, commissions, officers, and employees harmless, without limitation, from and against any and all actions, claims, losses, liabilities, damages, costs, attorney fees, and expenses (including those required to establish the right to indemnification), arising out of or relating to: (a) any breach by Contractor (or any of Contractor's employees, agents, subcontractors, or by anyone else for whose acts any of them may be liable) of any of the promises, agreements, representations, warranties, or insurance requirements contained in this Contract; (b) any infringement, misappropriation, or other violation of any intellectual property right or other right of any third party; (c) any bodily injury, death, or damage to real or tangible personal property occurring wholly or in part due to action or inaction by Contractor (or any of Contractor's employees, agents, subcontractors, or by anyone else for whose acts any of them may be liable); and (d) any acts or omissions of Contractor (or any of Contractor's employees, agents, subcontractors, or by anyone else for whose acts any of them may be liable).

The State will notify Contractor in writing if indemnification is sought; however, failure to do so will not relieve Contractor, except to the extent that Contractor is materially prejudiced. Contractor must, to the satisfaction of the State, demonstrate its financial ability to carry out these obligations.

The State is entitled to: (i) regular updates on proceeding status; (ii) participate in the defense of the proceeding; (iii) employ its own counsel; and to (iv) retain control of the defense if the State deems necessary. Contractor will not, without the State's written consent (not to be unreasonably withheld), settle, compromise, or consent to the entry of any judgment in or otherwise seek to terminate any claim, action, or proceeding. To the extent that any State employee, official, or law may be involved or challenged, the State may, at its own expense, control the defense of that portion of the claim.

Any litigation activity on behalf of the State, or any of its subdivisions under this Section, must be coordinated with the Department of Attorney General. An attorney designated to represent the State may not do so until approved by the Michigan Attorney General and appointed as a Special Assistant Attorney General.

28. **Infringement Indemnification.** Contractor shall indemnify, defend and hold harmless State from and against any and all amounts payable under any judgment, verdict, court order or settlement for third party claims of infringement of any trade secrets, copyrights, trademarks or trade names alleged to have occurred and arising from the Deliverables. Should State's use of such Deliverables be determined to have infringed, or if, in Contractor's judgment, such use is likely to be infringing, Contractor may, at its option: (i) procure for State the right to continue using such Deliverables provided, or (ii) replace or modify the Deliverables to make their use non-infringing while yielding substantially equivalent results. This infringement indemnity does not cover claims arising from: (1) the combination of Deliverables with products or services not provided by Contractor; or the modification of Deliverables by any person other than Contractor.



29. **Limitation of Liability.** The State is not liable for consequential, incidental, indirect, or special damages, regardless of the nature of the action. The State's liability shall not exceed the approved budget ceiling of the Contract. Contractor shall have no liability arising from or relating to any third party hardware, software, information or materials selected or supplied by State.
30. **Reserved.**
31. **State Data. Ownership.** The State's data ("**State Data**," which will be treated by Contractor as Confidential Information) includes: (a) the State's data collected, used, processed, stored, or generated as the result of the Contract Activities; (b) personally identifiable information ("**PII**") collected, used, processed, stored, or generated as the result of the Contract Activities, including, without limitation, any information that identifies an individual, such as an individual's social security number or other government-issued identification number, date of birth, address, telephone number, biometric data, mother's maiden name, email address, credit card information, or an individual's name in combination with any other of the elements here listed; and, (c) personal health information ("**PHI**") collected, used, processed, stored, or generated as the result of the Contract Activities, which is defined under the Health Insurance Portability and Accountability Act (HIPAA) and its related rules and regulations. State Data is and will remain the sole and exclusive property of the State and all right, title, and interest in the same is reserved by the State. This Section survives the termination of this Contract.
- a. **Contractor Use of State Data.** Contractor is provided a limited license to State Data for the sole and exclusive purpose of providing the Contract Activities, including a license to collect, process, store, generate, and display State Data only to the extent necessary in the provision of the Contract Activities. Contractor must: (a) keep and maintain State Data in strict confidence, using such degree of care as is appropriate and consistent with its obligations as further described in this Contract and applicable law to avoid unauthorized access, use, disclosure, or loss; (b) use and disclose State Data solely and exclusively for the purpose of providing the Contract Activities, such use and disclosure being in accordance with this Contract, any applicable Statement of Work, and applicable law; and (c) not use, sell, rent, transfer, distribute, or otherwise disclose or make available State Data for Contractor's own purposes or for the benefit of anyone other than the State without the State's prior written consent. This Section survives the termination of this Contract.
 - b. **Extraction of State Data.** Contractor must, within five (5) business days of the State's request, provide the State, without charge and without any conditions or contingencies whatsoever (including but not limited to the payment of any fees due to Contractor), an extract of the State Data in the format specified by the State.
 - c. **Backup and Recovery of State Data.** Unless otherwise specified in Article 1 - Statement of Work, Contractor is responsible for maintaining a backup of State Data and for an orderly and timely recovery of such data. Unless otherwise described in Article 1 - Statement of Work, Contractor must maintain a contemporaneous backup of State Data that can be recovered within two (2) hours at any point in time.
 - d. **Loss of Data.** In the event of any act, error or omission, negligence, misconduct, or breach that compromises or is suspected to compromise the security, confidentiality, or integrity of State Data or the physical, technical, administrative, or organizational safeguards put in place by Contractor that relate to the protection of the security, confidentiality, or integrity of State Data, Contractor must, as applicable: (a) notify the State as soon as practicable but no later than twenty-four (24) hours of becoming aware of such occurrence; (b) cooperate with the State in investigating the occurrence, including making available all relevant records, logs, files, data reporting, and other materials required to comply with applicable law or as otherwise required by the State; (c) in the case of PII or PHI, at the State's sole election, (i) notify the affected individuals who comprise the PII or PHI as soon as practicable but no later than is required to comply with applicable law, or, in the absence of any legally required notification period, within 5 calendar days of the occurrence; or (ii) reimburse the State for any costs in notifying the affected individuals; (d) in the case of PII, provide third-party credit and identity monitoring services to each of the affected individuals who comprise the PII for the period required to comply with applicable law, or, in the absence of any legally required monitoring services,



for no less than twenty-four (24) months following the date of notification to such individuals; (e) perform or take any other actions required to comply with applicable law as a result of the occurrence; (f) without limiting Contractor's obligations of indemnification as further described in this Contract, indemnify, defend, and hold harmless the State for any and all claims, including reasonable attorneys' fees, costs, and expenses incidental thereto, which may be suffered by, accrued against, charged to, or recoverable from the State in connection with the occurrence; (g) be responsible for recreating lost State Data in the manner and on the schedule set by the State without charge to the State; and, (h) provide to the State a detailed plan within 10 calendar days of the occurrence describing the measures Contractor will undertake to prevent a future occurrence. Notification to affected individuals, as described above, must comply with applicable law, be written in plain language, and contain, at a minimum: name and contact information of Contractor's representative; a description of the nature of the loss; a list of the types of data involved; the known or approximate date of the loss; how such loss may affect the affected individual; what steps Contractor has taken to protect the affected individual; what steps the affected individual can take to protect himself or herself; contact information for major credit card reporting agencies; and, information regarding the credit and identity monitoring services to be provided by Contractor. This Section survives the termination of this Contract.

32. **Non-Disclosure of Confidential Information.** The parties acknowledge that each party may be exposed to or acquire communication or data of the other party that is confidential, privileged communication not intended to be disclosed to third parties. The provisions of this Section survive the termination of this Contract.

- a. Meaning of Confidential Information. For the purposes of this Contract, the term "**Confidential Information**" means all information and documentation of a party that: (a) has been marked "confidential" or with words of similar meaning, at the time of disclosure by such party; (b) if disclosed orally or not marked "confidential" or with words of similar meaning, was subsequently summarized in writing by the disclosing party and marked "confidential" or with words of similar meaning; and, (c) should reasonably be recognized as confidential information of the disclosing party. The term "Confidential Information" does not include any information or documentation that was: (a) subject to disclosure under the Michigan Freedom of Information Act (FOIA); (b) already in the possession of the receiving party without an obligation of confidentiality; (c) developed independently by the receiving party, as demonstrated by the receiving party, without violating the disclosing party's proprietary rights; (d) obtained from a source other than the disclosing party without an obligation of confidentiality; or, (e) publicly available when received, or thereafter became publicly available (other than through any unauthorized disclosure by, through, or on behalf of, the receiving party). For purposes of this Contract, in all cases and for all matters, State Data is deemed to be Confidential Information.
- b. Obligation of Confidentiality. The parties agree to hold all Confidential Information in strict confidence and not to copy, reproduce, sell, transfer, or otherwise dispose of, give or disclose such Confidential Information to third parties other than employees, agents, or subcontractors of a party who have a need to know in connection with this Contract or to use such Confidential Information for any purposes whatsoever other than the performance of this Contract. The parties agree to advise and require their respective employees, agents, and subcontractors of their obligations to keep all Confidential Information confidential. Disclosure to a subcontractor is permissible where: (a) use of a subcontractor is authorized under this Contract; (b) the disclosure is necessary or otherwise naturally occurs in connection with work that is within the subcontractor's responsibilities; and (c) Contractor obligates the subcontractor in a written contract to maintain the State's Confidential Information in confidence. At the State's request, any employee of Contractor or any subcontractor may be required to execute a separate agreement to be bound by the provisions of this Section.
- c. Cooperation to Prevent Disclosure of Confidential Information. Each party must use its best efforts to assist the other party in identifying and preventing any unauthorized use or disclosure of any Confidential Information. Without limiting the foregoing, each party must advise the other party immediately in the event either party learns or has reason to believe that any person who has had access to Confidential Information has violated or intends to violate the terms of this Contract and



each party will cooperate with the other party in seeking injunctive or other equitable relief against any such person.

- d. Remedies for Breach of Obligation of Confidentiality. Each party acknowledges that breach of its obligation of confidentiality may give rise to irreparable injury to the other party, which damage may be inadequately compensable in the form of monetary damages. Accordingly, a party may seek and obtain injunctive relief against the breach or threatened breach of the foregoing undertakings, in addition to any other legal remedies which may be available, to include, in the case of the State, at the sole election of the State, the immediate termination, without liability to the State, of this Contract or any Statement of Work corresponding to the breach or threatened breach.
- e. Surrender of Confidential Information upon Termination. Upon termination of this Contract or a Statement of Work, in whole or in part, each party must, within 5 calendar days from the date of termination, return to the other party any and all Confidential Information received from the other party, or created or received by a party on behalf of the other party, which are in such party's possession, custody, or control; provided, however, that Contractor must return State Data to the State following the timeframe and procedure described further in this Contract. Should Contractor or the State determine that the return of any non-State Data Confidential Information is not feasible, such party must destroy the non-State Data Confidential Information and must certify the same in writing within 5 calendar days from the date of termination to the other party.

33. **Data Privacy and Information Security.**

- a. Undertaking by Contractor. Without limiting Contractor's obligation of confidentiality as further described, Contractor is responsible for establishing and maintaining a data privacy and information security program, including physical, technical, administrative, and organizational safeguards, that is designed to: (a) ensure the security and confidentiality of the State Data; (b) protect against any anticipated threats or hazards to the security or integrity of the State Data; (c) protect against unauthorized disclosure, access to, or use of the State Data; (d) ensure the proper disposal of State Data; and (e) ensure that all employees, agents, and subcontractors of Contractor, if any, comply with all of the foregoing. In no case will the safeguards of Contractor's data privacy and information security program be less stringent than the safeguards used by the State, and Contractor must at all times comply with all applicable State IT policies and standards, which are available to Contractor upon request.
- b. Audit by Contractor. No less than annually, Contractor must conduct a comprehensive independent third-party audit of its data privacy and information security program and provide such audit findings to the State.
- c. Right of Audit by the State. Without limiting any other audit rights of the State, the State has the right to review Contractor's data privacy and information security program prior to the commencement of Contract Activities and from time to time during the term of this Contract. During the providing of the Contract Activities, on an ongoing basis from time to time and without notice, the State, at its own expense, is entitled to perform, or to have performed, an on-site audit of Contractor's data privacy and information security program. In lieu of an on-site audit, upon request by the State, Contractor agrees to complete, within 45 calendar days of receipt, an audit questionnaire provided by the State regarding Contractor's data privacy and information security program.
- d. Audit Findings. Contractor must implement any required safeguards as identified by the State or by any audit of Contractor's data privacy and information security program.
- e. State's Right to Termination for Deficiencies. The State reserves the right, at its sole election, to immediately terminate this Contract or a Statement of Work without limitation and without liability if the State determines that Contractor fails or has failed to meet its obligations under this Section.

34. **N/A.**

35. **CEPAS Electronic Receipt Processing Standard.** All electronic commerce applications that allow for electronic receipt of credit or debit card and electronic check transactions must be processed via the State's Centralized Electronic Payment Authorization System (CEPAS). To minimize the risk to the State, full



credit/debit card numbers, sensitive authentication data, and full bank account information must never be stored on state-owned IT resources.

36. **Records Maintenance, Inspection, Examination, and Audit.** The State may during normal business hours and upon reasonable prior written notice, audit Contractor's billing and payment records that are directly relevant to determining the accuracy of Contractor's invoices to the State (collectively, the "Records") in order to verify invoiced amounts under this Contract. Any such audits of the Records will be conducted at the sole expense of State. Contractor must retain, and provide to the State or its designee and the auditor general upon request, all financial and accounting records related to the Contract through the term of the Contract and for 4 years after the latter of termination, expiration, or final payment under this Contract or any extension ("**Audit Period**"). If an audit, litigation, or other action involving the records is initiated before the end of the Audit Period, Contractor must retain the Records until all issues are resolved.

Within 10 calendar days of providing notice, the State and its authorized representatives or designees have the right to enter and inspect Contractor's premises or any other places where Contract Activities are being performed, and examine, copy, and audit all records related to this Contract. Contractor must cooperate and provide reasonable assistance. If any financial errors are revealed, the amount in error must be reflected as a credit or debit on subsequent invoices until the amount is paid or refunded. Any remaining balance at the end of the Contract must be paid or refunded within 45 calendar days.

This Section applies to Contractor, any parent, affiliate, or subsidiary organization of Contractor, and any subcontractor that performs Contract Activities in connection with this Contract.

37. **Warranties and Representations.** Contractor represents and warrants that Contractor will perform the Services in accordance with the applicable AICPA standards. THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, OR WHETHER ARISING BY COURSE OF DEALING OR PERFORMANCE, CUSTOM, USAGE IN THE TRADE OR PROFESSION OR OTHERWISE, INCLUDING BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
38. **Conflicts and Ethics.** Contractor's partners, principals and employees shall adhere to Contractor's Global Code of Conduct (which shall be provided to the State upon request) and the professional code of ethics under the AICPA Code of Conduct. (A copy of the AICPA Code of Conduct must be attached as Appendix C).

Contractor's employees directly involved in the performance of Services under this Contract shall not perform services in other agreements or working relationships that are in Direct Conflict with the Services provided by such personnel under this Contract. "Direct Conflict" is defined as those situations wherein such personnel are unable to render impartial assistance, advice, or services to State. Contractor will adhere to the applicable provisions of the AICPA ethics code, applicable state law governing client confidentiality, and its own Code of Conduct.

Contractor will uphold high ethical standards and is prohibited from: (a) holding or acquiring an interest that would conflict with this Contract; (b) doing anything that creates an appearance of impropriety with respect to the award or performance of the Contract; (c) attempting to influence or appearing to influence any State employee by the direct or indirect offer of anything of value; or (d) paying or agreeing to pay any person, other than employees and consultants working for Contractor, any consideration contingent upon the award of the Contract. Contractor must immediately notify the State of any violation or potential violation of these standards. This Section applies to Contractor, any parent, affiliate, or subsidiary organization of Contractor, and any subcontractor that performs Contract Activities in connection with this Contract.

39. **Compliance with Laws.** Contractor must comply with all current and applicable United States federal, state and local laws, rules and regulations related to Contractor's performance of the Services.



40. **N/A**
41. **Nondiscrimination.** Under the Elliott-Larsen Civil Rights Act, 1976 PA 453, MCL 37.2101, *et seq.*, and the Persons with Disabilities Civil Rights Act, 1976 PA 220, MCL 37.1101, *et seq.*, Contractor and its subcontractors agree not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, marital status, or mental or physical disability. Breach of this covenant is a material breach of this Contract.
42. **Unfair Labor Practice.** Under MCL 423.324, the State may void any Contract with a Contractor or subcontractor who appears on the Unfair Labor Practice register compiled under MCL 423.322.
43. **Governing Law.** This Contract is governed, construed, and enforced in accordance with Michigan law, excluding choice-of-law principles, and all claims relating to or arising out of this Contract are governed by Michigan law, excluding choice-of-law principles. Claims by Contractor arising from this Contract must be resolved in Michigan Court of Claims. Contractor consents to venue in Ingham County, and waives any objections, such as lack of personal jurisdiction or *forum non conveniens*. Contractor must appoint agents in Michigan to receive service of process. The State and Contractor agree not to demand a trial by jury in any action, proceeding, or counterclaim.
44. **Non-Exclusivity.** Nothing contained in this Contract is intended nor will be construed as creating any requirements contract with Contractor. This Contract does not restrict the State or its agencies from acquiring similar, equal, or like Services from other sources. This is a non-exclusive agreement and, subject to its confidentiality obligations, Contractor and the Other PwC Firms are not prevented or restricted from providing services to other states so long as such work does not constitute a Direct Conflict with Contractor's Services for the State.
45. **Force Majeure.** Neither party will be in breach of this Contract because of any failure arising from any disaster or acts of god that are beyond their control and without their fault or negligence. Each party will use commercially reasonable efforts to resume performance. Contractor will not be relieved of a breach or delay caused by its subcontractors unless due to a force majeure event. If immediate performance is necessary to ensure public health and safety, the State may immediately contract with a third party.
46. **Dispute Resolution.** The parties will endeavor to resolve any Contract dispute in accordance with this provision. The dispute will be referred to the parties' respective Contract Administrators or Project Managers. Such referral must include a description of the issues and all supporting documentation. The parties must submit the dispute to a senior executive if unable to resolve the dispute within 15 business days. The parties will continue performing while a dispute is being resolved, unless the dispute precludes performance. A dispute involving payment does not preclude performance.
- Litigation to resolve the dispute will not be instituted until after the dispute has been elevated to the parties' senior executive and either concludes that resolution is unlikely, or fails to respond within 15 business days. The parties are not prohibited from instituting formal proceedings: (a) to avoid the expiration of statute of limitations period; (b) to preserve a superior position with respect to creditors; or (c) where a party makes a determination that a temporary restraining order or other injunctive relief is the only adequate remedy. This Section does not limit either party's right to terminate the Contract.
47. **Media Releases.** News releases (including promotional literature and commercial advertisements) pertaining to the Contract or project to which it relates must not be made without prior written State approval, and then only in accordance with the explicit written instructions of the State. Notwithstanding the foregoing, Contractor may use the State's name in experience citations and recruiting materials, provided any published materials are preapproved by the State's Communications representative in writing.
48. **Website Incorporation.** The State is not bound by any content on Contractor's website.



49. **Order of Precedence.** In the event of a conflict between the terms and conditions of the Contract, the exhibits, a purchase order, or an amendment, the order of precedence is: (a) the Contract amendment; (b) the Contract (c) Article 1 - Statement of Work; and (d) any other exhibits. Any pre-printed terms and conditions appearing on a purchase order quotation, acknowledgement, invoice, or similar document are deemed superseded by this Contract and shall not apply to or become part of this Contract regardless of any statement on the purchase order.
50. **Severability.** If any part of this Contract is held invalid or unenforceable, by any court of competent jurisdiction, that part will be deemed deleted from this Contract and the severed part will be replaced by agreed upon language that achieves the same or similar objectives. The remaining Contract will continue in full force and effect.
51. **Waiver.** Failure to enforce any provision of this Contract by either party hereto will not constitute a waiver.
52. **Survival.** The provisions of this Contract that impose continuing obligations, including payment, termination, transition, insurance coverage, indemnification, limitation of liability, ownership and use of Deliverables, survival clause, confidentiality and any other provisions of this Contract that should reasonably be intended to survive its expiration or termination, will survive the expiration or termination of this Contract.
53. **Entire Contract and Modification.** This Contract is the entire agreement and replaces all previous agreements between the parties for the Contract Activities. This Contract may not be amended except by signed agreement between the parties (a **“Contract Change Notice”**).
- A Change Requests. The State reserves the right to request from time to time any changes to the requirements and specifications of the Contract and the Contract Activities. At a minimum, to the extent applicable, Contractor shall provide a detailed outline of all work to be done, including tasks necessary to accomplish the Additional Services/Deliverables, timeframes, listing of key personnel assigned, estimated hours for each individual per task, and a complete and detailed cost justification.
- If the State requests or directs the Contractor to perform any Services/Deliverables that are outside the scope of the Contractor’s responsibilities under the Contract (“New Work”), the Contractor must notify the State promptly before commencing performance of the requested activities it believes are New Work. If the Contractor fails to notify the State before commencing performance of the requested activities, any such activities performed before the Contractor gives notice shall be conclusively considered to be in-scope Contract Activities and not New Work.
- If the State requests or directs the Contractor to perform any services or provide Deliverables that are consistent with and similar to the Contract Activities being provided by the Contractor under the Contract, but which the Contractor reasonably and in good faith believes are not included within the Contract Activities, then before performing such Services or providing such Deliverables, the Contractor shall notify the State in writing that it considers the Services or Deliverables to be an Additional Service/Deliverable for which the Contractor should receive additional compensation. If the Contractor does not so notify the State, the Contractor shall have no right to claim thereafter that it is entitled to additional compensation for performing that Service or providing that Deliverable. If the Contractor does so notify the State, then such a Service or Deliverable shall be governed by the Change Request procedure in this Section.
- In the event prices or service levels are not acceptable to the State, the Additional Services or New Work shall be subject to competitive bidding based upon the specifications.
- (1) Change Request at State Request
If the State requires Contractor to perform New Work, Additional Services or make changes to the Services that would affect the Contract completion schedule or the amount of compensation due Contractor (a “Change”), the State shall submit a written request for Contractor to furnish a proposal for carrying out the requested Change (a “Change Request”).
- (2) Contractor Recommendation for Change Requests:
Contractor may propose a Change to the State, on its own initiative, should Contractor believe the proposed Change would benefit the Contract.



- (3) Upon receipt of a Change Request or on its own initiative, Contractor shall examine the implications of the requested Change on the technical specifications, Contract schedule and price of the Deliverables and Services and shall submit to the State without undue delay a written proposal for carrying out the Change. Contractor's proposal shall include any associated changes in the technical specifications, Contract schedule and price and method of pricing of the Services. If the Change is to be performed on a time and materials basis, the Exhibit A Labor Rates shall apply to the provision of such Services. If Contractor provides a written proposal and should Contractor be of the opinion that a requested Change is not to be recommended, it shall communicate its opinion to the State but shall nevertheless carry out the Change as specified in the written proposal if the State directs it to do so.
- (4) By giving Contractor written notice within a reasonable time, the State shall be entitled to accept a Contractor proposal for Change, to reject it, or to reach another agreement with Contractor. If the parties agree on carrying out a Change, a written Contract Change Notice must be prepared and issued under this Contract, describing the Change and its effects on the Services and any affected components of this Contract (a "Contract Change Notice").
- (5) No proposed Change shall be performed until the proposed Change has been specified in a duly executed Contract Change Notice issued by the Department of Technology, Management and Budget, Procurement.
- (6) If the State requests or directs the Contractor to perform any activities that Contractor believes constitute a Change, the Contractor must notify the State that it believes the requested activities are a Change before beginning to work on the requested activities. If the Contractor fails to notify the State before beginning to work on the requested activities, then the Contractor waives any right to assert any claim for additional compensation or time for performing the requested activities. If the Contractor commences performing work outside the scope of this Contract and then ceases performing that work, the Contractor must, at the request of the State, retract any out-of-scope work that would adversely affect the Contract.

53. Reserved.

54. Intellectual Property Rights

- a. **State Ownership of Work Product.** Except as set forth in Section 54(c) below, the State is and will be the sole and exclusive owner of all right, title, and interest in and to all Deliverables ("Deliverables"), including all intellectual property rights. In furtherance of the foregoing:
 - i. Contractor will create all Deliverables as work made for hire as defined in Section 101 of the Copyright Act of 1976; and
 - ii. to the extent any Deliverables or intellectual property rights do not qualify as or otherwise fails to be works made for hire, Contractor hereby:
 1. assigns, transfers, and otherwise conveys to the State, irrevocably and in perpetuity, throughout the universe, all right, title, and interest in and to such Deliverables, including all intellectual property rights; and
 2. irrevocably waives any and all claims Contractor may now or hereafter have in any jurisdiction to so-called "moral rights" or rights of droit moral with respect to the Deliverables.
- b. **Further Actions.** Contractor will, and will cause Contractor personnel, to take all appropriate action and execute and deliver all documents necessary or reasonably requested by the State to effectuate any of the provisions or purposes of Section 54(a), or otherwise as may be necessary or useful for the State to prosecute, register, perfect, record, or enforce its rights in or to any Deliverables or any intellectual property right therein.
- c. **PwC Materials.** Notwithstanding Section 54(a) above, Contractor is and will remain the sole and exclusive owner of all right, title, and interest in its pre-existing materials and software, as well as any general skills, know-how, processes, or other intellectual property (including a non-client specific version of any Deliverables) which Contractor may have discovered or created prior to performing the Services ("PwC Materials"), subject to the license granted in Section 55 below.



- d. **State Materials.** The State will remain the sole and exclusive owners of all right, title, and interest in and to State Data, including all intellectual property rights therein. Contractor will have no right or license to, and will not, use any State data except solely during the term of this Contract for which they are provided to the extent necessary to perform the Services and provide the Deliverables to the State. All other rights in and to the State Data are expressly reserved by the State.

55. Licenses.

- a. **PwC Materials License.** Contractor hereby grants to the State such rights and licenses with respect to the PwC Materials that will allow the State to use and otherwise exploit perpetually throughout the universe for its business uses the Deliverables, without incurring any fees or costs to Contractor (other than the fees set forth under this Contract) or any other person in respect of the PwC Materials. In furtherance of the foregoing, such licenses and rights will:
- i. be nonexclusive, fully paid up and royalty-free, irrevocable, perpetual, non-sublicensable, non-transferable license to use any PwC Materials included in the Deliverables for the State's business purposes; and
 - ii. The State has the right to use, reproduce, perform, display, modify, improve, and create derivative works of the PwC Materials including all such modifications, improvements, and derivative works thereof, solely as part of or as necessary to use the Deliverables and benefit from the Services.
- b. **State Data.** The State hereby grants to Contractor the limited, royalty-free, nonexclusive right and license to State Data solely as necessary to incorporate such State Data into, or otherwise use such State Data in connection with creating, the Deliverables. The term of such license will commence upon the State's delivery of the State Data to Contractor, and will terminate upon the State's acceptance or rejection of the Deliverables to which the State Data relates. Subject to the foregoing license, the State reserves all rights in the State Data. All State Data are considered Confidential Information of the State.

- 56. CPA Notice.** Contractor is owned by professionals who hold CPA licenses as well as by professionals who are not licensed CPAs. Depending on the nature of the Services, non-CPA owners may be involved in providing Services under this Contract.



Glossary

Days	Means calendar days unless otherwise specified.
24x7x365	Means 24 hours a day, seven days a week, and 365 days a year (including the 366th day in a leap year).
Additional Service	Means any Services/Deliverables within the scope of the Contract, but not specifically provided under any Statement of Work, that once added will result in the need to provide the Contractor with additional consideration.
Audit Period	See Section 34
BI	Business Intelligence (BI) is a set of techniques and tools that leverage best practices for the transformation of raw data into meaningful and useful information for business analysis purposes. BI technologies provide historical, current and predictive views of business operations.
Blanket Purchase Order	An alternate term for Contract as used in the State's computer system.
Business Critical	Any function identified in any Statement of Work as Business Critical.
Business Day	Whether capitalized or not, shall mean any day other than a Saturday, Sunday or State-recognized legal holiday (as identified in the Collective Bargaining Agreement for State employees) from 8:00am EST through 5:00pm EST unless otherwise stated.
Deliverable	All written material that is expressly prepared for and delivered to the State under this Contract by the Contractor.
DTMB	Michigan Department of Technology, Management and Budget
EIM	Enterprise Information Management (EIM) is an integrated approach for governing and managing enterprise data as an asset in order to improve operational efficiency, promote transparency, and enable customer-centric service delivery.
Excusable Failure	See Section 43.
Hazardous material	Any material defined as hazardous under the latest version of federal Emergency Planning and Community Right-to-Know Act of 1986 (including revisions adopted during the term of the Contract).
Incident	Any interruption in Services.
ITB	A generic term used to describe an Invitation to Bid. The ITB serves as the document for transmitting the RFP to potential Bidders
Key Personnel	Any Personnel designated in Article 1 as Key Personnel.
MDM	Master Data Management (MDM) includes the processes, governance, policies, standards and tools that consistently define and manage the critical data of an enterprise to provide a single point of reference.
New Work	Any Services/Deliverables outside the scope of the Contract and not specifically provided under any Statement of Work, that once added will result in the need to provide the Contractor with additional consideration.
Post-Consumer Waste	Any product generated by a business or consumer which has served its intended end use, and which has been separated or diverted from solid waste for the purpose of recycling into a usable commodity or product, and which does not include post-industrial waste.
Post-Industrial Waste	Industrial by-products that would otherwise go to disposal and wastes generated after completion of a manufacturing process, but do not include internally generated scrap commonly returned to industrial or manufacturing processes.
RFP	Request for Proposal designed to solicit proposals for services
Services	The Services described in Section 1, and/or any Statements of Work incorporated via the Contract Change Notice process.
Source reduction	Any practice that reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment prior to recycling, energy recovery, treatment, or disposal.



State Location	Any physical location where the State performs work. State Location may include state-owned, leased, or rented space.
Subcontractor	A company Contractor delegates performance of a portion of the Services to, but does not include independent contractors engaged by Contractor solely in a staff augmentation role.
Unauthorized Removal	Contractor's removal of Key Personnel as set forth in Section 11 without the prior written consent of the State.
Work in Progress	A Deliverable that has been partially prepared, but has not been presented to the State for Approval.
Work Product	Refers to any data compilations, reports, and other media, materials, or other objects or works of authorship created or produced by the Contractor as a result of an in furtherance of performing the services required by this Contract.



Exhibit A – Pricing

STATE OF MICHIGAN
 Contract No. 071B5500110
Enterprise Information Management (EIM) Implementation Services

EXHIBIT A PRICING

1. Pricing schedule for the proposed Contract Activities are included in the table below.
2. Prices include all costs, including but not limited to, any one-time or set-up charges, fees, and potential costs that Contractor may charge the State (e.g., configuration, programming, consulting services, etc.).
3. An hourly unit rate table is provided for rates to be used to calculate payments for future time and materials work to be completed through this Contract through the reserved bank of hours, Work Stream H. **Table II below.**
4. The Contractor is encouraged to offer quick payment terms. The number of days must not include processing time for payment to be received by the Contractor's financial institution.
5. By submitting its proposal, the Contractor certified that the prices were arrived at independently, and without consultation, communication, or agreement with any other Contractor.

Table I

*Note that these activities occur in iterations for each state department

Phase I Work Streams and Deliverables	Estimated Hours	Fixed Cost Threshold	Anticipated Acceptance Date
A. Implementation of Organizational Processes within each State department (Enter total for Work Stream A in this row.)	4709	\$762,648-\$54,647= \$707,974.00	12/14/2015
1. Assessment per State department that includes current EIM maturity level and target level. This assessment will include a review of current EIM related business process initiatives and associated technologies.	1420	\$230,005	11/9/2015
2. Actionable roadmap for each department to implement EIM organizational processes necessary to reach target maturity level. Per department, the roadmap should include key activities, an explicit checklist of action items, and timeframes.	1345	\$217,899	11/16/2015



<p>3. Enterprise roadmap, including a consolidated project schedule that depicts a statewide perspective for implementing organizational processes across all departments, including key activities, key resources, and timeframes for reaching the target maturity level. Critical components of the enterprise roadmap are organizational change management, communication, education and marketing.</p>	<p>300</p>	<p>\$48,422</p>	<p>7/6/2015</p>
<p>4. Development and presentation of workshops training sessions, and materials including a dry run for the project team.</p>	<p>1644</p>	<p>\$266,322 - \$54,647.00 efficiency - \$211,675.00</p>	<p>12/14/2015</p>
<p>B. Enterprise Data Architecture (Enter total for Work Stream B in this row.)</p>	<p>1191</p>	<p>\$254,860 - deferred for budget approval</p>	<p>12/14/2015</p>
<p>1. Comprehensive narrative and detailed model for a software solution sufficient to achieve enterprise-class data sharing of structured data, including:</p> <ul style="list-style-type: none"> a. Logical diagram that elaborates the interfaces and workflow of the model b. Tools needed (category and type, not necessarily brands and products) c. Survey of the collection of tools and solutions we already have in our environments d. Detailed examination of the recommended tools and software needed to supplement the existing inventory of tools and software. e. Roster of the skills required to implement, operate, and maintain the above, with an explanation of each by role f. Estimate of State staffing requirements to achieve these goals, including roles, number of staff per role and level of effort. g. Estimate of Contractor staffing requirements to achieve these goals, including roles, number of staff per role and level of effort. h. Calendar of events and a comprehensive schedule (laid out relative to the time of contract award) for the completion of these items 	<p>459</p>	<p>\$98,023</p>	<p>11/2/2015</p>



2. The same (all of the above) for unstructured data, plus a narrative and detailed model for a software solution to: a. Find data b. Identify data c. Classify data d. Automatically harvest and catalog metadata about the discovered data.	366	\$78,419	12/14/2015
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2. Identification and explanation of methods to achieve Deliverables 1 and 2 above.	366	\$78,419	12/14/2015
C. Enterprise Business Glossary (Enter total for Work Stream C in this row.)	1344	\$235,321	11/2/2015
1. Enterprise requirements definition for an enterprise business vocabulary and data source lineage system, including services for authoring and sharing business metadata	474	\$83,054	9/21/2015
2. Evaluation of tools, approaches, and solutions that the State already uses to manage data definitions and metadata from the perspective of expansion to an enterprise solution	237	\$41,527	9/21/2015
3. Recommendations for implementation of an enterprise business glossary	633	\$110,740	11/2/2015
D. Enterprise Master Data Management (MDM) for personal and business identity (Enter total for Work Stream D in this row.)	2093	\$338,954	9/21/2015
1. Enterprise requirements definition for an enterprise MDM solution for uniquely identifying citizens and businesses which provides a 360 degree view across State department personas such as student, driver, beneficiary, claimant, recipient, taxpayer, licensee, or service provider. Requirements must include consideration of critical systems such as SIGMA and MiDEAL.	1196	\$193,688	9/14/2015
2. Evaluation of tools, approaches, and solutions that the State already uses to manage individual and business identity for potential expansion to the enterprise level.	399	\$64,563	8/17/2015
3. Recommendations for implementation of an enterprise solution for MDM for identity.	498	\$80,703	9/14/2015
E. Enterprise Master Data Management (MDM) for location, including addresses (Enter total for Work Stream E in this row.)	2093	\$338,954	11/30/2015
1. Enterprise requirements definition for an enterprise MDM solution for addresses and location, including both address cleansing and geospatial visualization. Requirements must include consideration of critical systems such as the State's enterprise resource management tool and the MiDEAL system.	1046	\$169,477	11/30/2015
2. Evaluation of tools, approaches, and solutions that the State already uses to manage location and address for potential expansion to the enterprise level.	698	\$112,985	11/16/2015
3. Recommendations for implementation of an enterprise solution for MDM for location and address.	349	\$56,492	11/30/2015
F. Enterprise automated solution for Data Sharing Agreements (DSA) (Enter total for Work Stream F in this row.)	1075	\$188,258	12/14/2015



1. Enterprise requirements definition for an enterprise automated DSA	470	\$82,363	11/30/2015
2. Evaluation of tools, approaches, and solutions that the State already uses for potential expansion to the enterprise level	269	\$47,065	12/7/2015
3. Recommendations for implementation of an automated enterprise DSA solution	336	\$58,830	12/14/2015
G. Analytics Strategy (Enter total for Work Stream G in this row.)	1512	\$281,624 - \$91,114= \$190,510.00	12/7/2015
1. Baseline analysis of existing enterprise analytics maturity	178	\$33,132	9/14/2015
2. Key enterprise performance indicators for successful analytics strategy – merging cross-industry best practices and key State outcome measures	178	\$33,132	9/14/2015
3. Evaluation and recommendations regarding enterprise and departmental human resources required for successful execution of analytics strategy	178	\$33,132	9/14/2015
4. Recommendations regarding best practice for organizational structure and placement of information management and analytics unit.	489	\$91,114	12/7/2015
5. Evaluation and recommendation regarding emerging analytics technology solutions.	489	\$91,114 - deferred	12/7/2015
GRAND TOTAL ALL WORK STREAMS	14017	\$2,000,000 With \$345,974.00 deferred	12/14/2015



Table II

Time and Materials (T&M) Labor Rate Tables

Roles and/or Materials for Future Enhancements, Configuration and/or Customization	Unit cost (\$)
Project managers	\$240
Business analysts	\$140
System analysts	\$195
Programmer/developers	\$175
System administrators	\$175
Database administrators	\$175
Q/A Manager	\$240
Security specialist	\$400
Testers	\$175
Technical writers	\$175
CM specialists	\$400
System Architects	\$240
Network engineer/administrator	\$175
Software Architects	\$240
Project assistants	\$175
Web developers	\$175
Application trainers	\$175
Others: (List) below:	



Exhibit B – Optional Phase II Preliminary Proposal with Upper Threshold Pricing

Exhibit B Phase II Preliminary Response

1.104 Work and Deliverables – Phase II

In the event the State makes the determination to move forward with Phase II of this project through the Contract awarded for Phase I, the response to the following Work and Deliverable sections shall serve as the preliminary proposal for Phase II tasks and Deliverables.

I. Services and Deliverables to Be Provided

The following Deliverables are not all inclusive. Contractors may propose other Deliverables.

The services and related Deliverables are grouped in seven work streams:

- A. Implementation of organizational processes within each of Michigan's principal State departments and specified agencies
- B. Enterprise data architecture
- C. Enterprise business glossary
- D. Enterprise master data management for individual and business identity
- E. Enterprise master data management for location, including addresses
- F. Enterprise automated solution for data sharing agreements
- G. Analytics strategy
- H. Reserved Bank of Hours

Phase II Work Stream A - Implementation of Organizational Processes

Using the departmental maturity assessments, departmental roadmaps, and enterprise roadmap established and accepted in Phase I, all Phase II activities will further institutionalize and standardize organization processes across all State departments. Phase II activities for this work stream are likely to include training in more advanced topics and/or coaching for specific roles. The Contractor will work with direction from the EIM Director and EIM Project Manager.

Phase II Work Stream A - Deliverables

1. Development and delivery of advanced workshops and/or trainings, including a dry run for the project team.
2. Development and delivery of a customized coaching plan for selected role(s) within specific department(s).

Phase II Work Stream A - Acceptance Criteria

- Materials must be professional, practical, realistic, informative, and effective
- Coaching plan must be clear and concise
- Deliverables must follow SUITE project management and systems engineering processes
- Deliverables must meet industry standards
- In addition, the high level acceptance criteria for Deliverables listed in Section 1.501 must be met.

Department Points of Contact and the EIM Project Manager have joint responsibility for acceptance of Deliverables 1 and 2.



Phase II Work Stream A Bidder response: Describe your proposed solution to meet this service in detail, including State roles and Contractor roles and anticipated levels of effort.

Phase II Caveat: PwC understands the State’s request to gain an understanding of what lies beyond Phase I. It is wise for the State, before investing in Phase I, to have a sense of the long-term journey that such an investment begins. That said, obviously, the work of Phase II is entirely dependent on the outcome of Phase I; the key objective of Phase I is to lay the groundwork, create a strategy and assess the viability and necessary implementation approach for a future rollout. For that reason, as the State acknowledges, it is difficult to determine with any certainty the specific activities that will be required in Phase II, the Agencies and Systems that will be in scope and the tools that may be deployed. To be responsive to the State’s request, we are providing a high-level overview of our initial thinking on Phase II activities. It bears stating, however, that the State and its selected vendor will gain insight into the needs of Phase II during Phase I, and we would imagine that this preliminary overview may be altered with the benefit of the Phase I learnings. Phase II will involve progression along the maturity scale from ‘Initial’ to ‘Defined & Standardized’ for most agencies, and to ‘Managed’ for some others.

Red indicating <i>Current State</i>	1 Knowledge of Critical Elements	5 Data Management Metrics and Measurements
Green indicating <i>Future State</i>	2 MDM Tool	6 Formal Stewardship or data custodianship
Red triangle indicating <i>Overall DG Current State</i>	3 Transactional level governance	7 Governance in Data Architecture
Green triangle indicating <i>Overall DG Target State</i>	4 MD Policies and Standards	

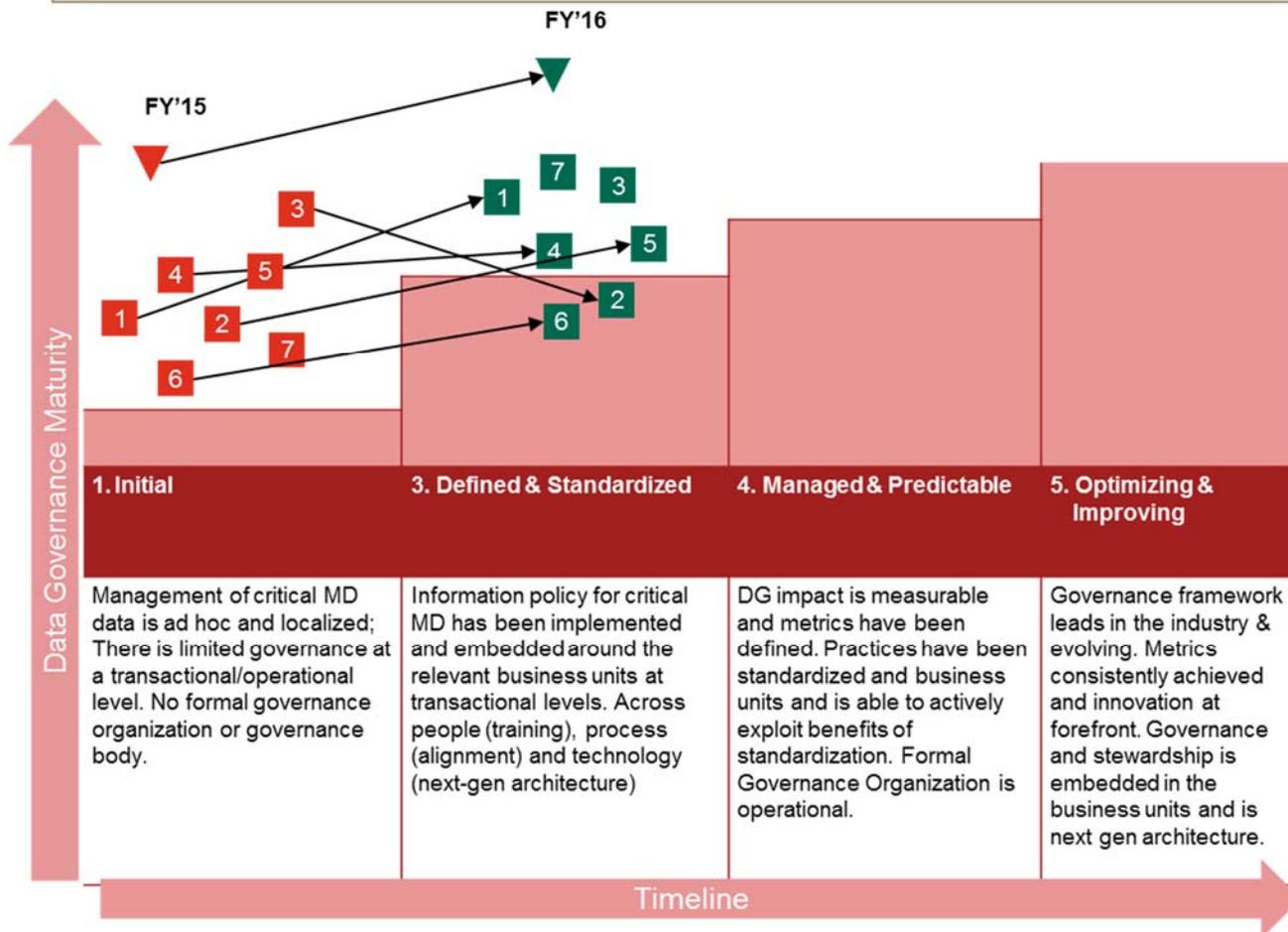


Figure 35

Phase II of Organizational Process Roll-out will involve further institutionalizing process and protocols that have been established in Phase I. While Phase I would address maturity assessment and agency-specific roadmaps Phase II could include amongst other things -



- Execution and alignment with the EIM framework of policies and processes to manage quality, consistency, usability, privacy, and availability of information across the information lifecycle
- Ensuring that data related ownership and accountability has been duly established across the agencies based on the organizational framework outlined in previous phases.
- Ensuring that recommended organizational structures are being implemented in a cohesive and consistent that aligns with enterprise guidelines.
- Ensuring processes, metrics, controls, and tools have been duly established for the program.
- Ensuring that agency personnel are appropriately coached and have the required tools and methodologies in place to conduct their regular data governance responsibilities
- Measurement for improvements in data governance maturity a department has accomplish over the course of Phase I
- Ensuring adoption of the principles and standards across all layers of the enterprise through effective communication and change management methodologies

The following high-level timeline provides details on the proposed sequence and duration of activities to accomplish the scope envisioned in this Work Stream. We will work with the State of Michigan during the first phase of the engagement to validate the proposed plan.

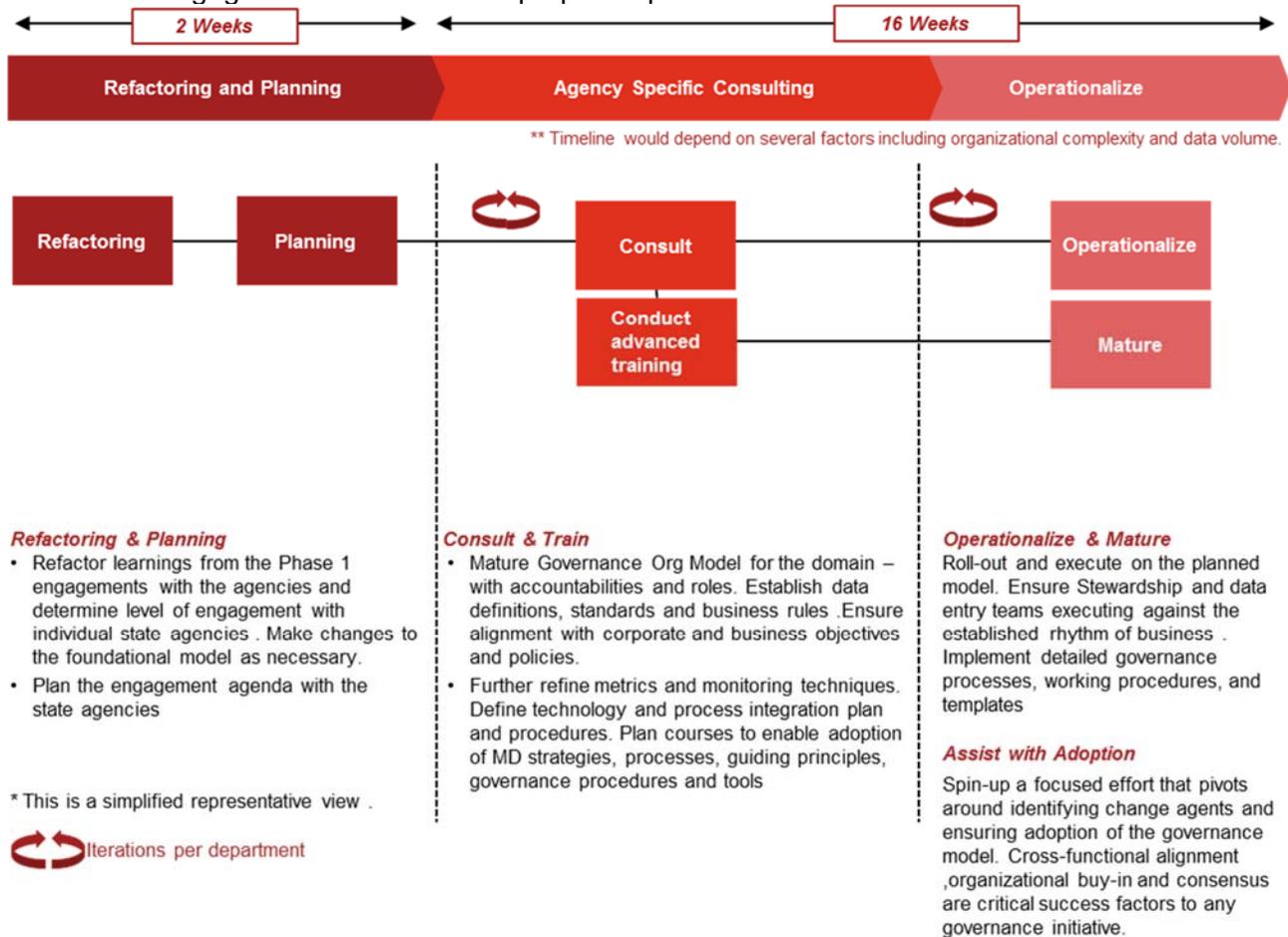


Figure 36

We envision the following staffing structure for the organizational processes work stream:

Role	Responsibilities	Staffing
<i>Project Manager/ Lead Strategist</i>	<ul style="list-style-type: none"> • Overall responsibility for the work performed by PwC in the governance work stream • Attends key meetings, address issues and work with client management and the PwC team to deliver the specified work • Supports day-to-day detail design activities and Deliverables 	PwC personnel (1) SOM personnel (.25)



Role	Responsibilities	Staffing
	<ul style="list-style-type: none"> • Acts responsible for project planning, staffing, work assignments, issue resolution, status meetings, and status reports • Has in-depth experience in data management and governance program design and implementation initiatives • Serves as a subject matter specialist and facilitator across all stakeholder interviews, workshops, and meetings, etc. • Bring expertise in designing and building data governance solutions • Assist in defining the future state data governance solution leveraging data governance subject matter expertise from past implementations • Develops the overall Data Governance Detailed Design • Helps identification of Domains, Elements and Priorities to organize data governance by the individual departments • Develops the Implementation Roadmap Per Department • Develops the Project Charter, Detail Project Plan • Delivers the Project Kick-Off Presentation and the Project Status Report 	
<p><i>Data Governance Specialist</i></p>	<ul style="list-style-type: none"> • Brings business and technical expertise from data governance engagements • Co-facilitate interviews, workshops and working sessions with stakeholders • Assist in defining leading practices and standards for future state Data Governance solution leveraging subject matter expertise from past engagements • Assist during each step of the engagement • Executes day-to-day detail design activities and Deliverables • Has experience in data management and governance program design and implementation initiatives • Participates and co-facilitator across all stakeholder interviews, workshops, and meetings, etc. • Bring expertise in designing and building data governance solutions • Defines the future state data governance solution leveraging data governance subject matter expertise from past implementations • Assists in the overall Data Governance Detailed Design • Facilitates identification of Domains, Elements and Priorities to organize data governance by the individual departments • Facilitates implementation of Data Governance by the individual departments according to plan 	<p>PwC personnel (2)</p>
<p><i>Trainer & Change Specialist</i></p>	<ul style="list-style-type: none"> • Bring training and change management expertise from prior engagements • Assist with the development of change management, communication and training plan • Assist in the design and development of training material for the agency workshops and training sessions • Drive the development and completion of all change management and training work products and Deliverables per the project plan and timeline 	<p>PwC personnel (1)</p>



Role	Responsibilities	Staffing
	<ul style="list-style-type: none"> Assists in identifying criteria for change agents in each department Develop training materials and facilitates change management meeting and training sessions Coordinates with SOM change management and communications contacts within each department and the Office of Good Government 	

Figure 37

Enterprise data architecture

The State does not envision Phase II activities in this work stream. However, the Contractor may propose Phase II activities.

Phase II Work Stream B - Enterprise data architecture

The State does not envision Phase II activities in this work stream. However, the Contractor may propose Phase II activities.

Phase II Work Stream B Bidder response:

In our view, the work of enterprise architecture is ongoing. As a result, while Phase II may not include the level of activity that we undertook in Phase I, we will integrate Enterprise Data Architecture concepts into our overall plans and staff team members who have experience in enterprise architecture to the effort. That said, as envisioned in our approach, these activities will not add further cost or duration to our approach. The PwC Team has extensive experience and qualifications in the data management and data architecture areas, which we will draw upon to support the specific needs of the SOM EIM Data architecture activities. Our full-fledged approach to managing data as an enterprise asset addresses all four data management lifecycle stages: data acquisition, data maintenance, data distribution and data archiving.

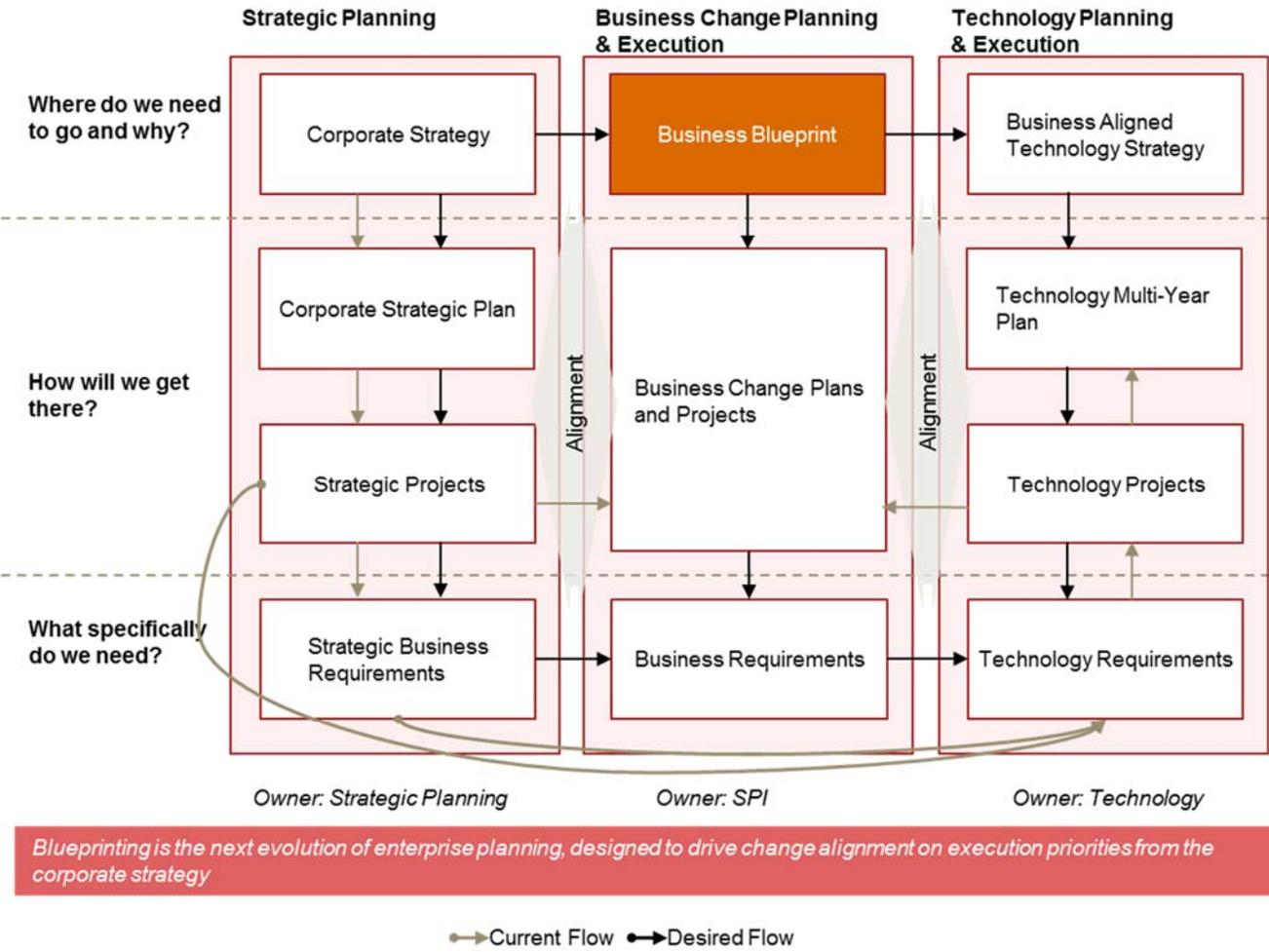


Figure 38
Phase II Work Stream C - Enterprise Business Glossary

Using the enterprise requirements and recommendations established and accepted in Phase I, the focus of Phase II is to build and implement an enterprise business glossary solution.

Phase II Work Stream C - Deliverables

1. Using State SUITE processes, design and configure the solution
2. Test the solution, culminating in User Acceptance Testing (UAT)
3. Train users
4. Implement the solution

Phase II Work Stream C - Acceptance Criteria

The EIM Program Director and EIM Project Manager have joint responsibility for acceptance of Deliverables.

All Deliverables must comply with State SUITE processes. Any deviation or tailoring of SUITE processes requires prior written approval of the EIM project manager. Note that SUITE Systems Engineering Methodology (SEM) processes include several plans that must be developed and accepted by the State prior to implementation.

Phase II Work Stream C Bidder response: Describe your proposed solution to meet this service in detail, including State roles and Contractor roles and anticipated levels of effort.

The Enterprise Business Glossary work stream will develop a platform for the creation and management of an enterprise business vocabulary and data source lineage system. The work stream will establish a statewide



data dictionary, which will include data element names, their business approved enterprise definitions, and classifications in terms of their degree of confidentiality and privacy. By enabling services for authoring and sharing of business metadata, it will reduce cycle time for system implementations and support statewide data governance functions by providing trusted information.

In Phase I, PwC will drive the work stream through discovery & development of an inventory of data assets. Additionally we will perform detailed scoping & planning to solidify the timeline and phases for business glossary roll-out per functional domain (Person, Business, Location, and Asset). In Phase I PwC will also evaluate tools and standardize semantics and definitions in collaboration with stakeholders. Since the solution can be developed on paper before it is implemented in a system, during Phase I, PwC will also conduct a pilot to document the definitions and classifications for one data domain.

In Phase II, PwC will iterate through several of the identified data areas to develop and implement the glossary, and work on handing over the solution to the State of Michigan team, once a protocol, process and cadence has been established to achieve consensus around data definitions, lineage and classification. PwC's role in Phase II will be that of facilitators, SMEs and business analysts to conduct workshops amongst different stakeholder groups and coordinate for conflict resolution in business terminology.



Phase II Work Stream D - Acceptance Criteria

The EIM Program Director and EIM Project Manager have joint responsibility for acceptance of Deliverables.

All Deliverables must comply with State SUITE processes. Any deviation or tailoring of SUITE processes requires prior written approval of the EIM project manager. Note that SUITE Systems Engineering Methodology (SEM) processes include several plans that must be developed and accepted by the State prior to implementation.

Phase II Work Stream D Bidder response: Describe your proposed solution to meet this service in detail, including State roles and Contractor roles and anticipated levels of effort.

Our approach to establishing an 'Enterprise (MDM) for personal and business identity' for the SOM pivots around the following core tenets:

- In Phase I we will –
 - Establish vision and ideal end-state requirements for Person and Business Master
 - Evaluate the existing credential and identity management systems to assess how they can be scaled or leveraged towards the future state vision
 - Finalize the strategy and roadmap to develop an Enterprise Person & Business Master technology platform that can be leveraged for a state-wide roll-out
- In Phase II we will –
 - Partner with SOM and an implementation partner of choice to build out the technology solution, and establish a repeatable process that can be leveraged over subsequent phases to integrate several data sources and state agencies.
 - Work towards a goal of including the majority of the requirements identified in Phase I to accomplish the State's objective of establishing an Enterprise Master for Person and Business Identity.

This section describes the details of our Phase II approach.

PwC recommends the state initially take an incremental approach to Personal and Business Identity MDM implementation. This proposal includes integration with a maximum of eight critical systems relevant to Identity Mastering. We will work with the Steering Committee to identify criteria to evaluate departmental business cases. Each of the departments in scope for Phase I Requirements would be eligible to submit a business case advocating their selection as the department to be implemented initially. The business case should directly address the criteria for evaluation. The Steering Committee will score the business cases and the department with the highest score will be included in Wave One. Additional waves can be scheduled as this wave progresses; however, this proposal only covers Wave One. The selection process should begin toward the end of Phase I to ensure everything is in place to initiate Phase II.

PwC understands that our Deliverables must comply with the State SUITE processes. We will coordinate with the State on specific Deliverables including additional Deliverables PwC determines should be included or any Deliverables not necessary based on the specifics of the initiative. The Project Management and Development modules of SUITE apply to this initiative.



Project Management:

Project Management Methodology (PMM) overview:



Development:

Systems Engineering Methodology (SEM) overview

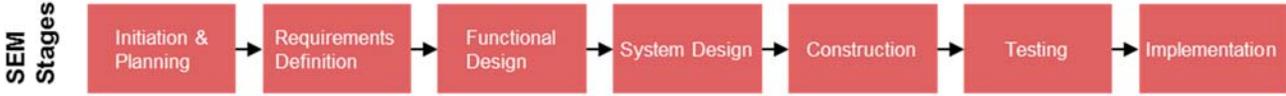


Figure 40



Timeline and Steps

There are many synergies between work stream D: Personal and Business Identity MDM and work stream E: Location MDM including addresses. While the data elements and technological solution may be different, the project approach to gathering system requirements, functional and system design, construction and testing is similar.

The following high-level timeline provides an outline of the proposed sequence and duration of activities to accomplish the scope noted in Phase II Work Stream D.

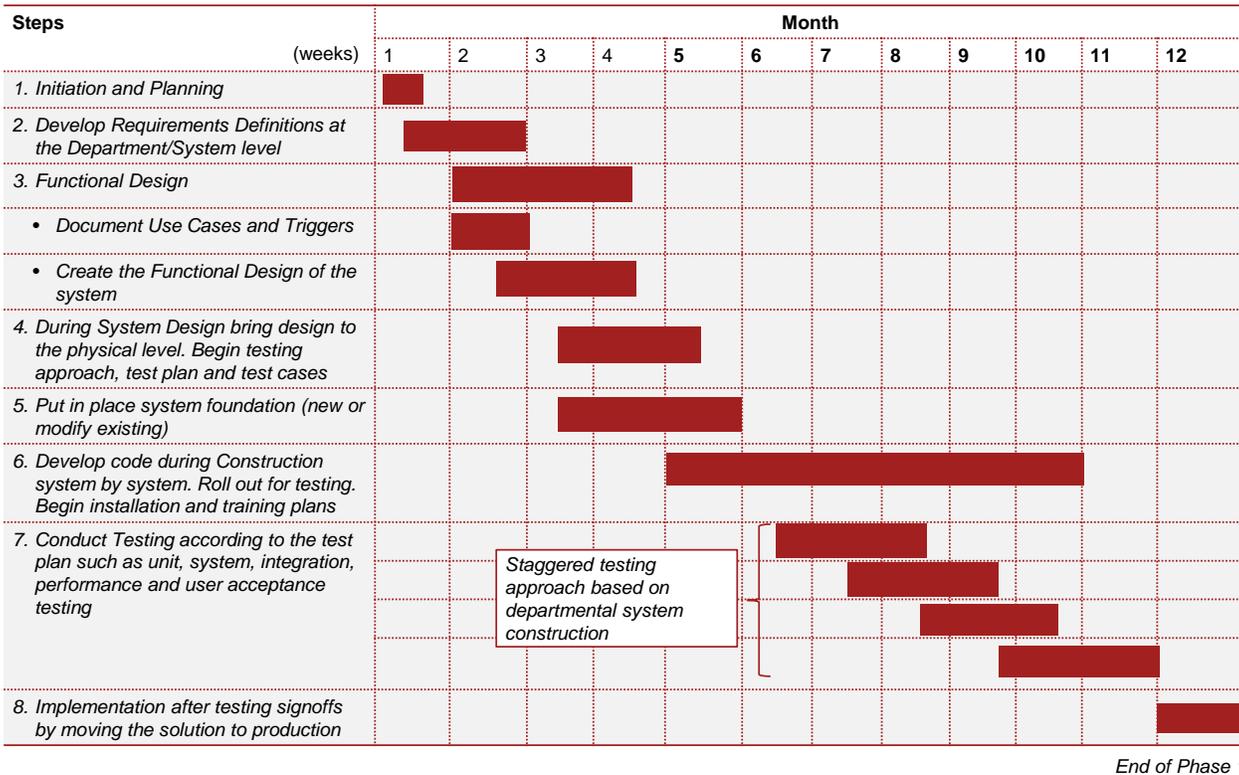


Figure 41

Tracks	Activities and Deliverables
<p>1. Requirements Definition – Department Specific</p>	<ul style="list-style-type: none"> Identify personal and business systems within selected department that will be in scope for Phase II Implementation (up to eight critical systems) Determine data entry points and data usage requirements Define data integration requirements Identify department stakeholders for personal and business identity By system, identify personal and business identity master data Compare system data to Phase I overall requirements and identify data gaps Determine business rules to incorporate system into solution Create baseline system requirements for design
<p>2. Functional Design</p>	<ul style="list-style-type: none"> Develop personal and business identity master data enterprise use cases with the Steering Committee Apply enterprise use cases to department specific systems and respond to variances Integrate with the organizational processes initiative regarding data management processes and other relevant processes Define end-to-end business real-time and batch processes including impact on upstream and downstream systems and processes



Tracks	Activities and Deliverables
	<ul style="list-style-type: none"> • Design processes for resolving data variances between departments • Coordinate with change management on changes to business processes, skill gaps and training • Put Change Agent program in place for identity master within selected department • Communicate and prepare to roll out new identity master processes
3. System Design	<ul style="list-style-type: none"> • Translate functional design specifications into a set of technical, computer-oriented system design specifications • Identify system specific data which makes a person or business unique include match results criteria • Produce system design blueprint for coding • Design the solution data structures and enterprise personal and business identity data models • Map enterprise person and business identity data elements to corresponding source system tables and fields • Develop technical data requirements (e.g., volumes, latency, performance) • Identify impacts on upstream and downstream systems
4. Construction	<ul style="list-style-type: none"> • Set up the dev, test and prod environments including environment installation of any required software or tools. Additional environments may be required based on the design • Develop the necessary code to meet the solution requirements including integration between systems • Perform unit testing by a developer to determine if the code satisfies the program specifications and is complete, logical, and error free. • Produce the system operating documentation
5. Testing	<ul style="list-style-type: none"> • Develop test strategy focused on meeting the needs of the use cases as well as system requirements • Create test plan detailing the type of testing that will be performed and at what stage of the project (at a minimum testing will include unit, system, integration and UAT testing) • Generate test scripts to test individual functions and requirements • Perform testing as outlined in the test plan • Track test results, log issues, prioritize them and remediate as needed
6. Implementation	<ul style="list-style-type: none"> • Design training program and a training plan • Conduct training at the appropriate time to enable the workforce to perform new tasks and processes • Produce a cut over plan including a back out plan and disaster recovery procedures • Deploy solution by system • Help Implement new metrics through process/technology

Figure 42

Phase II Work Stream D

Roles and Responsibilities

For the personal and business identity work stream, the project roles and responsibilities would be as follows

Role	Responsibilities	Staffing
<i>Project Manager</i>	<ul style="list-style-type: none"> • Responsible for timeliness, cost and quality of the work stream • Accountable for project planning, scoping and initiation 	PwC personnel (1 full time split with location master)



Role	Responsibilities	Staffing
	<ul style="list-style-type: none"> • Manage PMO activities (Monitoring and Control) including Project Governance, Status Reporting, Issue & Risk Mitigation and Management, Resources, Cost Tracking • Define and sequence specific tasks to align with objectives • Coordinate business efforts across departments related to identity MDM scope • Provide time estimates and coordinate business resources • Prioritize requirements • Review design documents 	
<i>Business Analyst</i>	<ul style="list-style-type: none"> • Departmental Data Stewards provide expertise related to personal and business identity within their department • Define department level requirements relative to enterprise business requirements • Determine business rules at the enterprise and department/system level to drive creation of personal identity index • Design business processes to create and maintain master data, link master data records from multiple systems, utilize the master data and retire master data 	SOM nominated personnel who are knowledgeable about person and business information usage from the selected department (part time), and PwC personnel (2 full time)
<i>Tech Lead</i>	<ul style="list-style-type: none"> • Oversee design of future state application and technical architectures • Prioritize development of solution • Coordinate integration with data sharing tool team • Manage all development efforts 	SOM Enterprise Data Architect (1 full time) and PwC personnel 1 full time split with location master) to co-lead
<i>Systems Analyst</i>	<ul style="list-style-type: none"> • Identify person and business identity source systems within the departments in scope • Quantify impacts on upstream and downstream systems • Create technical specifications for coding • Determine necessary integration with the single sign on tool 	SOM nominated personnel who are knowledgeable about systems in scope for integration into the solution (one per system, one resource can represent multiple systems if knowledgeable, part time), and PwC personnel (2 full time)
<i>Developers</i>	<ul style="list-style-type: none"> • Develop code required according to system requirements and technical specifications • Modify department systems as necessary to integrate with the solution and provide the benefits to the department • Construct data integration points • Conduct unit testing 	SOM nominated technical personnel who are knowledgeable about in scope systems (part time), PwC or implementation partners (3 full time)



Role	Responsibilities	Staffing
<i>Test Lead</i>	<ul style="list-style-type: none"> Oversee development of test strategy, test plan and test scripts Coordinate with State system testing staff and business SMEs who will execute UAT testing Prioritize issue resolution and remediation Coordinate issue resolution with related business owners as necessary 	SOM nominated business and technical personnel with strong testing experience (2 part time) for Business and Technical Test Leads along with PwC personnel (1 full time split with location master) to co-lead
<i>Testers</i>	<ul style="list-style-type: none"> Execute test scripts by scenario and by test type Document test results Support issue research and resolution 	PwC personnel who have experience testing (3 full time during the testing cycle),

Figure 43

Assumptions

Assumptions we made in creating the activities and estimates for this work stream:

1. Person and Business Identity share one Enterprise Data Steward and one Enterprise Data Architect. Should the state envision these two Identities to be managed separately, then an Enterprise Data Steward and an Enterprise Data Architect would be needed for each master data identity
2. One department, or one function operating cross-departmentally, is selected for Wave One with up to eight prioritized systems containing personal and/or business identity data. This lays the ground work for future implementation waves or phases
3. The timing and frequency of development waves is dependent on State resource availability, departments that are ready, priorities, budget and the amount of change the State can absorb at one time
4. Phase II Work Stream D and Work Stream E share the same PMO organization which oversees Project Initiation, Planning, Execution, Monitoring and Control and Closeout
5. The solution will be able leverage an existing State of Michigan technology platform. Upon evaluation, the tools owned by the State will be found to be at the same level or exceeding the functional specifications provided by another viable technology options assed in Phase I.

Phase II Work Stream E - Enterprise master data management for location, including addresses

Using the enterprise requirements and recommendations established and accepted in Phase I, the focus of Phase II is to build and implement a master data management solution for location, including addresses.

Phase II Work Stream E - Deliverables

1. Using State SUITE processes, design and configure the solution
2. Test the solution, culminating in User Acceptance Testing (UAT)
3. Train users
4. Implement the solution

Phase II Work Stream E - Acceptance Criteria

The EIM Program Director and EIM Project Manager have joint responsibility for acceptance of Deliverables.

All Deliverables must comply with State SUITE processes. Any deviation or tailoring of SUITE processes requires prior written approval of the EIM project manager. Note that SUITE Systems Engineering Methodology (SEM) processes include several plans that must be developed and accepted by the State prior to implementation.

Phase II Work Stream E Bidder response: Describe your proposed solution to meet this service in detail, including State roles and Contractor roles and anticipated levels of effort.



As stated above, the activities of Work Stream E will be similar to those of Work Stream D, although the technologies and data contemplated in each differ. Additionally, in recent years, the State has already laid some of the foundation for MDM in Location through its GIS initiative and the governance process it established. While, as in Work stream D, we would similarly advise an incremental approach to implementation of MDM for Location, in many respects this would be a continuation of the State’s current strategy.

As proposed in Work stream D, PwC recommends that, the State select one cross-departmental function, or one large department, in which to continue the rollout of MDM for location. This proposal includes integration with a maximum of eight critical systems relevant to Location Mastering. We will work with the Steering Committee to identify criteria to evaluate departmental business cases. With the Data Governance Committee as the platform, business case “applications” can be submitted by departments or consortia of departments describing the rationale for continuing the location MDM in that department or function. The business case should directly address the criteria for evaluation. The Steering Committee will scope the business cases and the application with the highest score will be included in Wave One. Additional waves can be scheduled as this wave progresses; however, this proposal only covers Wave One. The selection process should begin toward the end of Phase I to ensure everything is in place to initiate Phase II.

PwC understands that our Deliverables must comply with the State SUITE processes. We will coordinate with the State on specific Deliverables including additional Deliverables PwC determines should be included or any Deliverables not necessary based on the specifics of the initiative. The Project Management and Development modules of SUITE apply to this initiative:



Project Management:

Project Management Methodology (PMM) overview:



Development:

Systems Engineering Methodology (SEM) overview

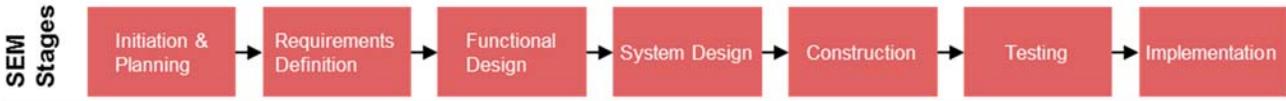




Figure 44
Timeline and Steps

There are many synergies between work stream D: Personal and Business Identity MDM and work stream E: Location MDM including addresses. The data elements and technological solution may be different; however the project approach to gathering system requirements, functional and system design, construction and testing is similar. The following high-level timeline (Figure 45) provides an outline of the proposed sequence and duration of activities to accomplish the scope noted in Phase II Work Stream D and Work Stream E.

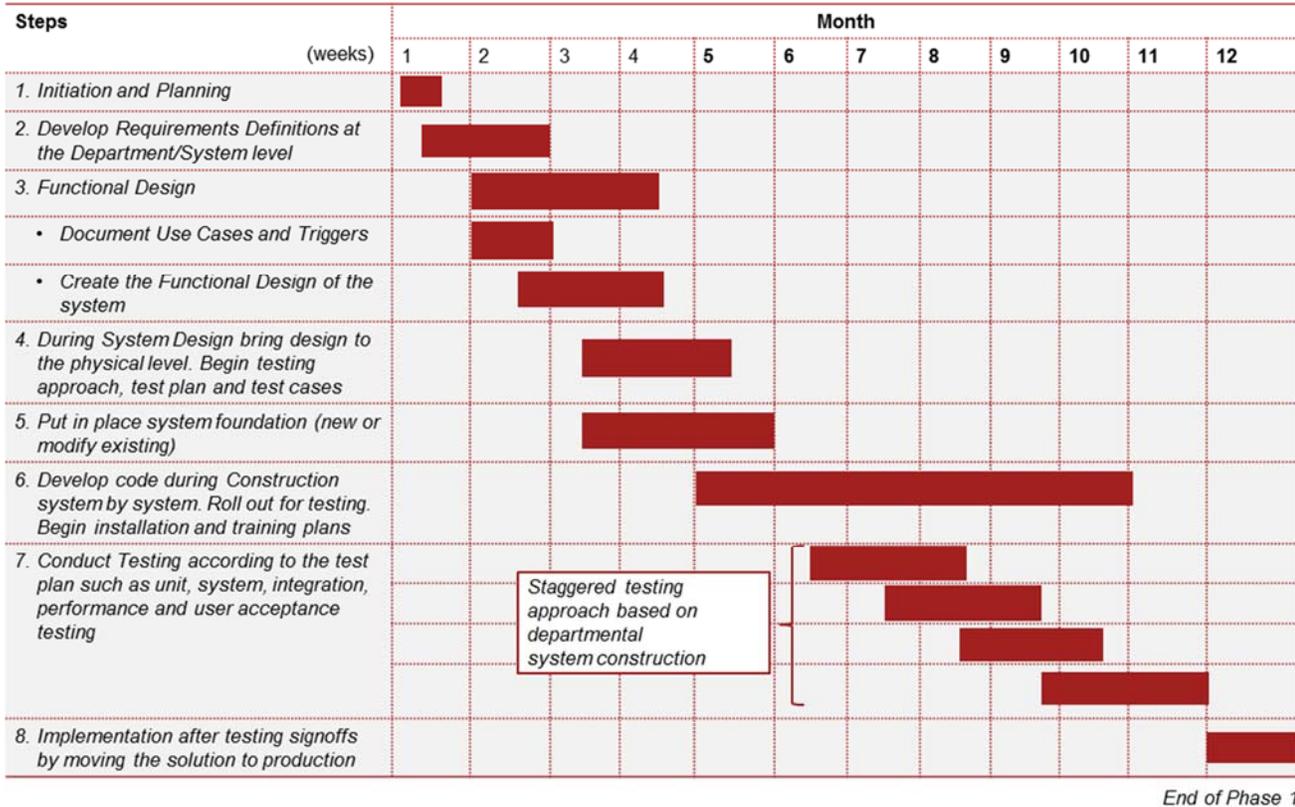


Figure 45
Phase II Work Stream E

Location master including address Tasks and Deliverables

For the location MDM including address work stream, there would be six tracks each with their own activities and Deliverables as follows:

Tracks	Activities and Deliverables
7. Requirements Definition – Department Specific	<ul style="list-style-type: none"> Identify location including address systems within selected department that will be in scope for Phase II Implementation (up to eight critical systems) Determine data entry points and data usage requirements Define data integration requirements Identify department stakeholders for location including address master data By system, identify location including address master data Compare system data to Phase I overall requirements and identify data gaps Determine business rules to incorporate system into solution Create baseline system requirements for design



Tracks	Activities and Deliverables
<p>8. <i>Functional Design</i></p>	<ul style="list-style-type: none"> • Develop location including address master data enterprise use cases with the Steering Committee • Apply enterprise use cases to department specific systems and respond to variances • Integrate with the organization governance initiative regarding data management processes and other relevant processes • Define end-to-end business real-time and batch processes including impact on upstream and downstream systems and processes • Design processes for resolving data variances between departments • Coordinate with change management on changes to business processes, skill gaps and training • Put Change Agent program in place for location master including address within selected department • Communicate and prepare to roll out new location master including address master processes
<p>9. <i>System Design</i></p>	<ul style="list-style-type: none"> • Translate functional design specifications into a set of technical, computer-oriented system design specifications • Produce system design blueprint for coding • Design the solution data structures and enterprise location including address data models • Map enterprise location including address data elements to corresponding source system tables and fields • Develop technical data requirements (e.g., volumes, latency, performance) • Identify impacts on upstream and downstream systems
<p>10. <i>Construction</i></p>	<ul style="list-style-type: none"> • Set up the dev, test and prod environments including environment installation of any required software or tools. Additional environments may be required based on the design • Develop the necessary code to meet the solution requirements including integration between systems • Conduct unit testing by a developer • Unit testing is performed to determine if the code satisfies the program specifications and is complete, logical, and error free. • Produce the system operating documentation
<p>11. <i>Testing</i></p>	<ul style="list-style-type: none"> • Develop test strategy focused on meeting the needs of the use cases as well as system requirements • Create test plan detailing the type of testing that will be performed and at what stage of the project (at a minimum testing will include unit, system, integration and UAT testing) • Generate test scripts to test individual functions and requirements • Perform testing as outlined in the test plan • Track test results, log issues, prioritize them and remediate as needed
<p>12. <i>Implementation</i></p>	<ul style="list-style-type: none"> • Design training program and a training plan • Conduct training at the appropriate time and enable the workforce to perform new tasks and processes • Produce a cut over plan including a back out plan and disaster recovery procedures • Help Implement new metrics through process/technology



Roles and Responsibilities

For the location MDM including address work stream, the project roles and responsibilities would be as follows:

Role	Responsibilities	Staffing
<i>Project Manager</i>	<ul style="list-style-type: none"> • Responsible for timeliness, cost and quality of the work stream • Accountable for project planning, scoping and initiation • Manage PMO activities (Monitoring and Control) including Project Governance, Status Reporting, Issue & Risk Mitigation and Management, Resources, Cost Tracking • Define and sequence specific tasks to align with objectives • Coordinate business efforts across departments related to location MDM including address scope • Provide time estimates and coordinate business resources • Prioritize requirements • Review design documents 	PwC personnel (1 full time split with location master)
<i>Business Analyst</i>	<ul style="list-style-type: none"> • Departmental Data Stewards provide expertise related to address, location and geospatial coding within their department • Define department level requirements relative to enterprise business requirements • Determine business rules at the enterprise and department/system level to drive creation of location including address index • Design business processes to create and maintain master data, link master data records from multiple systems, utilize the master data and retire master data • Design business processes to create and maintain master data, link master data records from multiple systems, utilize the master data and retire master data 	SOM nominated personnel who are knowledgeable about location including address information usage from selected department (part time), and PwC personnel (2 full time)
<i>Tech Lead</i>	<ul style="list-style-type: none"> • Oversee design of future state application and technical architectures • Prioritize development of solution • Coordinate integration with data sharing tool team • Manage all development efforts 	SOM Enterprise Data Architect (1 full time) and PwC personnel 1 full time split with location master) to co-lead
<i>Systems Analyst</i>	<ul style="list-style-type: none"> • Identify location MDM including address source systems within the departments in scope • Provide geospatial coding subject matter expertise • Quantify impacts on upstream and downstream systems • Create technical specifications for coding • Determine necessary set up integration with the single sign on tool 	SOM nominated personnel who are knowledgeable about systems in scope for integration into the solution (one per system, one resource can represent multiple systems if knowledgeable, part time), and PwC personnel (2 full time)



Role	Responsibilities	Staffing
<i>Developers</i>	<ul style="list-style-type: none"> Develop code required according to system requirements and technical specifications Construct data integration points Expertise in geospatial coding and mapping software Modify department systems as necessary to integrate with the solution and provide the benefits to the department Conduct unit testing 	SOM nominated technical personnel who are knowledgeable about in scope systems (part time), PwC or implementation partners (3 full time)
<i>Test Lead</i>	<ul style="list-style-type: none"> Oversee development of test strategy, test plan and test scripts Coordinate with State system testing staff and business SMEs who will execute UAT testing Prioritize issue resolution and remediation Coordinate issue resolution with related business owners as necessary 	SOM nominated personnel with strong testing skills for Test Lead and PwC personnel (1 full time split with location master) to co-lead
<i>Testers</i>	<ul style="list-style-type: none"> Execute test scripts by scenario and by test type Document test results Support issue research and resolution 	PwC personnel who have experience testing (3 full time during the testing cycle),

Figure 47

Assumptions

Assumptions we made in creating the activities and estimates for this work stream:

1. Location and Address share one Enterprise Data Steward and one Enterprise Data Architect. Should the state envision these two Identities to be managed separately, then an Enterprise Data Steward and an Enterprise Data Architect would be needed for location MDM and addresses separately
2. One function or department is selected for Wave One with up to eight prioritized systems containing location and address data. This lays the ground work for future implementation waves
3. The timing and frequency of development waves is dependent on State resource availability, departments that are ready, priorities, budget and the amount of change the State can absorb at one time
4. Phase II Work Stream D and Phase II Work Stream E kick off at the same time and continue on similar tracks depending on detail requirements and design
5. Phase II Work Stream D and Work Stream E share the same PMO organization which oversees Project Initiation, Planning, Execution, Monitoring and Control and Closeout
6. The solution will be able leverage an existing SOM technology platform. Upon evaluation, the tools owned by the State will be found to be at the same level or exceeding the functional specifications provided by other viable technology options assessed in Phase I.

Phase II Work Stream F - Enterprise automated solution for data sharing agreements

Using the enterprise requirements and recommendations established and accepted in Phase I, the focus of Phase II is to build and implement an automated DSA solution.

Phase II Work Stream F - Deliverables

1. Using State SUITE processes, design and configure the solution
2. Test the solution, culminating in User Acceptance Testing (UAT)
3. Train users
4. Implement the solution

Phase II Work Stream F - Acceptance Criteria

The EIM Program Director and EIM Project Manager have joint responsibility for acceptance of Deliverables.



All Deliverables must comply with State SUITE processes. Any deviation or tailoring of SUITE processes requires prior written approval of the EIM project manager. Note that SUITE Systems Engineering Methodology (SEM) processes include several plans that must be developed and accepted by the State prior to implementation.

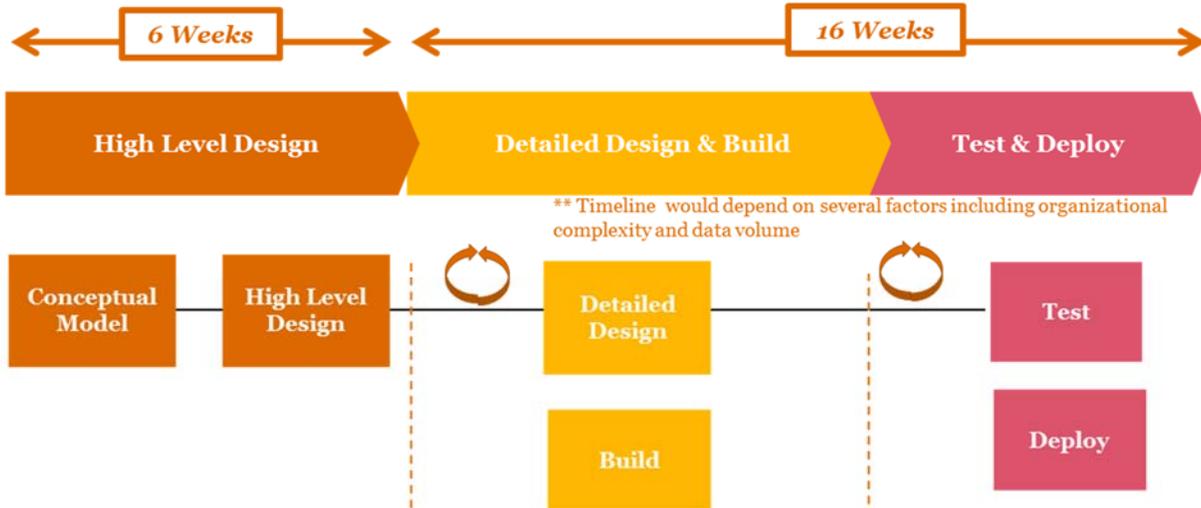
Phase II Work Stream F Bidder response: Describe your proposed solution to meet this service in detail, including State roles and Contractor roles and anticipated levels of effort.

Cross-agency data sharing and management being one of the core objectives of the State's EIM initiative, development and use of a template DSA is a key foundational component and a major step forward for the EIM program. The Phase I efforts to develop a common Data Sharing Agreement Template established a common data sharing methodology, but the process is still manual and allows only high level alignment, rather than enabling an efficient sharing and privilege definition at the data element level.

In Phase II – PwC will work to establish the assumption that a data sharing automation solution is envisioned to overlap with the Business Glossary work stream – both the solutions can potentially leverage the same platform. While the business glossary will house the data definitions, lineage and classification for shared data assets, the Data Sharing automation work stream can extend the same platform, to add mechanisms for privilege control, permissions and access rights to various agency personnel based on rules automation. PwC's approach envisions that the solution aligns with the following requirements:

1. UI for creation and administration of a matrix that allows access control by department and roles
2. Capability to control access privilege to desired level of granularity
3. Ability to author and manage the privileges easily from the UI
4. Workflow services to support approval workflows and stewardship hierarchies
5. Integration with other data sources to interface on data sharing privileges and classification
6. Capability to manage the DSA throughout its lifecycle (Definition, creation, access and management)
7. Automated solution with drop-down boxes and workflow to expedite creation and final signing of a DSA
8. Capability to offer standard reports on volume, types of data shared, participating departments, time from initiation to completion of a DSA, and other performance metrics to be determined
9. Capability to house a central repository for all DSAs that State departments may query to ascertain if data of interest is available, already shared among other departments, and if the interested department may join the agreement
10. Automated solution with drop-down boxes and workflow to expedite creation and final signing of a DSA
11. Capability to manage the DSA throughout its lifecycle (Definition, creation, access and management)
12. Automated solution with drop-down boxes and workflow to expedite creation and final signing of a DSA

The following tasks provide details on the proposed sequence activities to accomplish the scope envisioned in this work stream. We will work with the State of Michigan during the first phase of the engagement to validate the proposed plan. We envision that the following will be accomplished over a timeline of 6 months, with the right technology solution in place.



High Level Design

- In collaboration with the implementation partner or the product vendor develop a conceptual design that aligns with the solution specifications
- Work with various stakeholder groups to validate conceptual design
- Develop high level design model in alignment with the technology in question
- Develop a detailed implementation plan with respect to the technology in question

Detailed Design & Build

- Translate functional design specifications into technical system design
- Prepare detailed system configuration design in collaboration with implementation partner
- Produce system design blueprint for coding
- Set up the environments including environment installation of any required software or tools.
- Develop the necessary code to meet the solution requirements including integration between systems
- Perform unit testing by a developer to determine if the code satisfies the program specifications

Test & Deploy

- Develop test strategy focused on meeting the needs of the use cases as well as system requirements
- Generate test scripts to test individual functions and requirements
- Perform testing as outlined in the test plan
- Track test results, log issues, prioritize them and remediate as needed
- Produce a cut over plan for system go-live
- Plan solution deployment and assist in product deployment



Iterations per department

Figure 48



The following roles & responsibilities are envisioned for the execution of the work stream –

Role	Responsibilities	Staffing
<i>Project Manager</i>	<ul style="list-style-type: none"> Responsible for timeliness, cost and quality of the work stream Accountable for project planning, scoping and initiation Manage PMO activities (Monitoring and Control) including Project Governance, Status Reporting, Issue & Risk Mitigation and Management, Resources, Cost Tracking Define and sequence specific tasks to align with objectives Provide time estimates and coordinate business resources Prioritize requirements Review design documents 	PwC personnel (1 full time split with location master)
<i>Business Analyst /Systems Analysts</i>	<ul style="list-style-type: none"> Define department level requirements relative to enterprise business requirements Determine business rules at the enterprise and department/system Design business processes for the ongoing use of the DSA system Identify source systems that need to contribute to the data sharing solution Determine target feeds Quantify impacts on upstream and downstream systems Create technical specifications for coding 	TBD based on findings of Phase I
<i>Tech Lead</i>	<ul style="list-style-type: none"> Oversee design of future state application and technical architectures Prioritize development of solution Coordinate integration with data sharing tool team Manage all development efforts 	TBD based on findings of Phase I
<i>Developers</i>	<ul style="list-style-type: none"> Develop code required according to system requirements and technical specifications Construct data integration points Expertise in geospatial coding and mapping software Modify department systems as necessary to integrate with the solution and provide the benefits to the department Conduct unit testing 	TBD based on findings of Phase I
<i>Test Lead</i>	<ul style="list-style-type: none"> Oversee development of test strategy, test plan and test scripts Coordinate with State system testing staff and business SMEs who will execute UAT testing Prioritize issue resolution and remediation Coordinate issue resolution with related business owners as necessary 	TBD based on findings of Phase I
<i>Testers</i>	<ul style="list-style-type: none"> Execute test scripts by scenario and by test type Document test results Support issue research and resolution 	TBD based on findings of Phase I

Figure 49



Phase II Work Stream G - Analytics Strategy

The State envisions the need for expert Data Scientist(s) to assist in establishing a robust data analytics center. Potential activities include: acting as coaches for State staff to identify analytics that provide valuable insights to the State in meeting its goals and objectives, consulting with DTMB technical staff in how best to operationalize ongoing analytics, and interacting with department Chief Data Stewards to identify potential analytics. The Contractor may propose additional Phase II activities.

Phase II Work Stream G - Deliverables

1. Development and delivery of advanced workshops and/or trainings
2. Development and delivery of a customized coaching plan for selected role(s) within specific department(s).

Phase II Work Stream G - Acceptance Criteria

- Materials must be professional, practical, realistic, informative, and effective
- Coaching plan must be clear and concise
- Deliverables must follow SUITE project management and systems engineering processes
- Deliverables must meet industry standards
- In addition, the high level acceptance criteria for Deliverables listed in Section 1.501 must be met.

The EIM Program Director and EIM Project Manager have joint responsibility for acceptance of Deliverables.

Phase II Work Stream G Bidder response: Describe your proposed solution to meet this service in detail, including State roles and Contractor roles and anticipated levels of effort.

The scope and pace of Phase II will depend directly on the approved strategic roadmap from Phase I. Even before starting with advanced workshops/training sessions and technology, we suggest standing up the target-state operating model so that the necessary processes, tools, and resources are in place to support the delivery of analytical solutions to the rest of the state departments. In addition, the foundational future-state architecture to support delivery of advanced analytics to the State will need to be implemented before the Analytics Service Center can fully roll out its services to the State. The Analytics Service Center will need to clearly define the services it will provide to the State, and ensure that services targeted for initial roll-out are well defined and operational before marketing them to the rest of the State. From our experience, one of the key service offerings that the Analytics Service Center should focus on is standing up an analytics request intake process and a means to triage and prioritize these requests with clearly defined expectations on turnaround times. The core goal of the Analytics Service Center resides in its ability to provide high-impact and timely analytics to the right stakeholders. We suggest that the State of Michigan takes an incremental approach to achieve this goal, and initially works with select departments that appear to have an urgent analytical need to support business operations, a readiness to ingest the analytics into their decision-making processes and a willingness to work cross-departmentally through a structured governance process. This approach allows the Analytics Service Center to learn from initial interactions with these departments, and refine internal process, tools, and technical architecture to support full rollout across the State. A key component of a successful rollout will be careful socialization with key representatives from the various State departments (customers), to not only help them understand the services that the Analytics Service Center (Center) provides, but also to educate potential customers on how to engage the Center and help customers better understand the types of analytics that the Center can generate. The Center will need to identify data experts within the respective State departments who will request and leverage the analytics to garner key insights to drive operational and strategic decisions. These individuals will need a more rigorous education so that they are requesting analytics that make sense and are executable, and can effectively interpret the results. The following conceptual timeline is based on some key assumptions that will need to be confirmed at the end of Phase I.



Assumptions:

- 13. Phase II starts with building out the Analytics Service Center operating model and technical architecture
- 14. Phase II will engage between 2 to 3 departments to pressure test the Center’s processes, tools, and technical architecture
- 15. Phase II includes socialization with all State departments and identification of data experts in each department who will act an Analytics Steward
- 16. Phase II assumes that the State already has the necessary hardware and software to implement the architecture needed to supports an analytics service offering
- 17. Phase II assumes some level of technical architecture exists (i.e., has been implemented) to support delivery of analytics

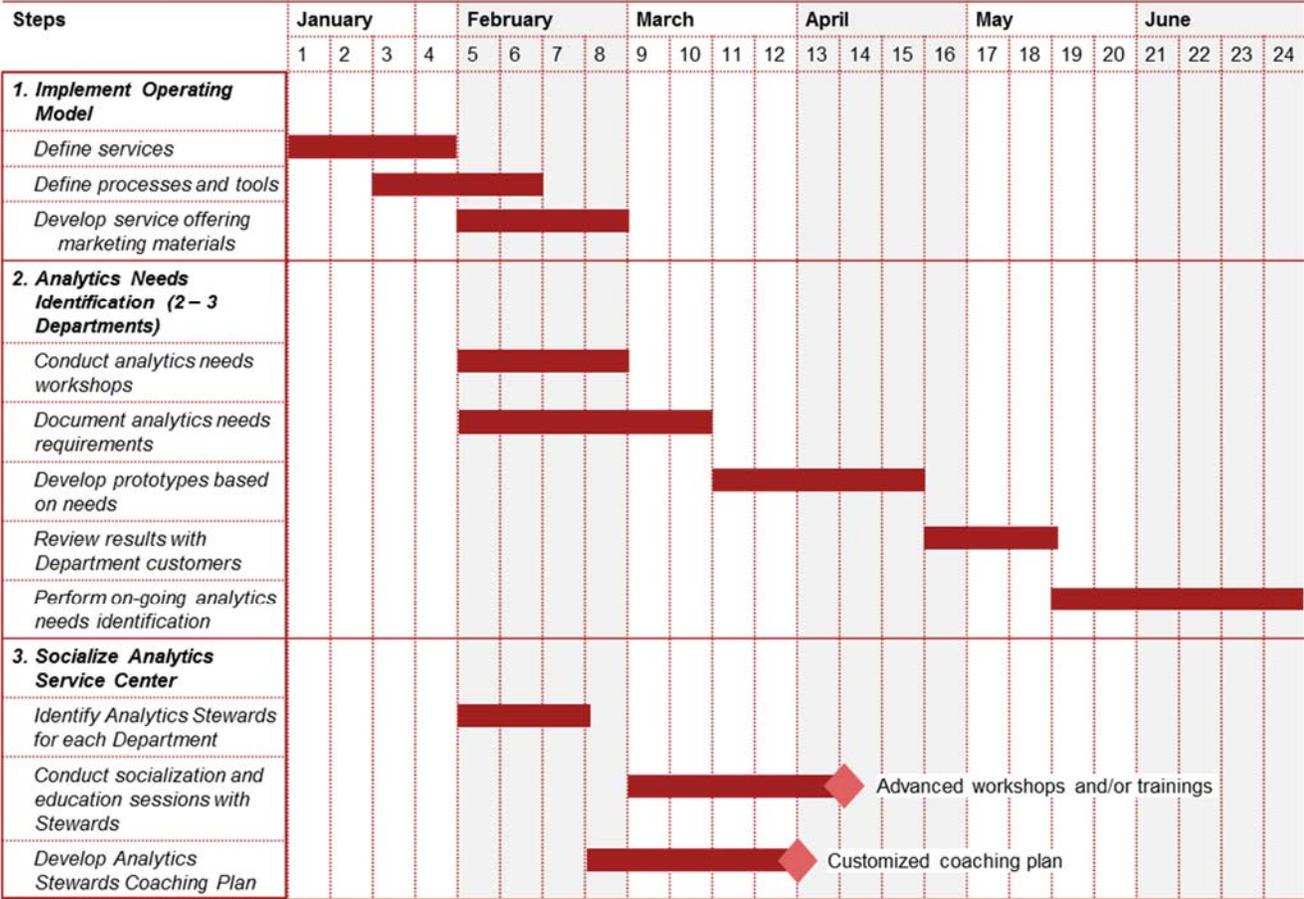


Figure 50



Given the assumptions noted in this section, we anticipate the staffing model indicated in the table below to support this Work Stream.

Role	Responsibilities	Staffing
<i>Project Manager/Analytics Subject Matter Specialist</i>	<ul style="list-style-type: none"> Responsible for timeliness, cost and quality of the Work Stream outputs and deliverables Manage plan, scope, issues and risks, and status reporting Drive overall Work Stream activities, and inject industry knowledge to inform analysis and deliverables 	PwC personnel (1) State of Michigan (0.5)
<i>Analytics Analysts</i>	<ul style="list-style-type: none"> Implement the future-state operating model: <ul style="list-style-type: none"> Define services and supporting processes and tools Define roles and responsibilities Develop communications/education materials to socialize the Analytics Service Center Help identify Analytics Stewards for each department Help coordinate the analytics needs identification for the 2 – 3 departments selected for initial rollout 	PwC personnel (2) State of Michigan Data Scientists (1)
<i>Tech Lead</i>	<ul style="list-style-type: none"> Confirm that the technical architecture will support the analytical needs of the State Implementation activities will depend on the assumptions noted in response for Section G Phase II 	TBD (Depends on the assumptions noted in Section G Phase II response)

Figure 51

All other Article 1 sections will apply for Phase II as well, under the Final Phase II Statement of Work and final project plan and cost model.

Phase I & II Work Stream H - Reserved Bank of Hours: To the extent that the assessment and recommendations bring to light implementation activities which could be completed immediately without adversely affecting other work streams, a bank of hours has been set aside to be utilized at the fixed hourly rates for concurrent completion. In the event such an opportunity presents itself, a contract change notice will be issued to add the Statement of Work (SOW) to the contract utilizing the appropriate portion of set aside hours for this purpose. Management for these activities will be conducted in accordance with all other Deliverables included in this Contract, i.e. SEM and SUITE processes and methodologies, also mentioned in the acceptance criteria.

Optional Phase II Work Stream Fixed Price Upper Threshold limits

Since the specifications for Phase II will not be completed until after Phase I, it is anticipated that any pricing estimated here will be top level thresholds, and that when the final Phase II proposal is submitted it will include pricing which is considerably lower with the removal of unknowns.

Phase II Work Streams and Deliverables	Estimated Hours	Fixed Cost Threshold	Anticipated Acceptance Date
A. Implementation of Organizational Processes within each State department (Enter total for Work Stream A in this row.)	3168	\$680,070	P2 Start + 18 weeks
1. Development and delivery of advanced workshops and/or trainings, including a dry run for the project team	1584	\$340,035	P2 Start + 18 weeks



2. Development and delivery of a customized coaching plan for selected role(s) within specific department(s).	1584	\$340,035	P2 Start + 18 weeks
B. Enterprise Data Architecture (Enter total for Work Stream B in this row.)	NA	NA	NA

1. No Deliverables are identified for Phase II for this Work Stream, Bidder to include total for any proposed Deliverables here.	NA	NA	NA
C. Enterprise Business Glossary (Enter total for Work Stream C in this row.)	1632	\$378,980	P2 Start + 12 weeks
1. Using State SUITE processes, design and configure the solution	408	\$94,745	P2 Start + 12 weeks
2. Test the solution, culminating in User Acceptance Testing (UAT)	408	\$94,745	P2 Start + 12 weeks
3. Train users	408	\$94,745	P2 Start + 12 weeks
4. Implement the solution	408	\$94,745	P2 Start + 12 weeks
D. Enterprise master data management for personal and business identity (Enter total for Work Stream D in this row.)	20928	\$4,261,512	P2 Start + 48 weeks
1. Using State SUITE processes, design and configure the solution	5232	\$1,065,378	P2 Start + 12 weeks
2. Test the solution, culminating in User Acceptance Testing (UAT)	5232	\$1,065,378	P2 Start + 24 weeks
3. Train users	5232	\$1,065,378	P2 Start + 36 weeks
4. Implement the solution	5232	\$1,065,378	P2 Start + 48 weeks
E. Enterprise master data management for location, including addresses (Enter total for Work Stream E in this row.)	20928	\$4,261,512	P2 Start + 48 weeks
1. Using State SUITE processes, design and configure the solution	5232	\$1,065,378	P2 Start + 12 weeks
2. Test the solution, culminating in User Acceptance Testing (UAT)	5232	\$1,065,378	P2 Start + 24 weeks
3. Train users	5232	\$1,065,378	P2 Start + 36 weeks
4. Implement the solution	5232	\$1,065,378	P2 Start + 48 weeks



F. Enterprise automated solution for data sharing agreements (Enter total for Work Stream F in this row.)	2368	\$476,652	P2 Start + 8 weeks
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1. Using State SUITE processes, design and configure the solution	592	\$119,163	P2 Start + 8 weeks
2. Test the solution, culminating in User Acceptance Testing (UAT)	592	\$119,163	P2 Start + 8 weeks
3. Train users	592	\$119,163	P2 Start + 8 weeks
4. Implement the solution	592	\$119,163	P2 Start + 8 weeks
G. Analytics Strategy (Enter total for Work Stream G in this row.)	3872	\$831,194	P2 Start + 22 weeks
1. Development and delivery of advanced workshops and/or trainings	1936	\$415,597	P2 Start + 22 weeks
2. Development and delivery of a customized coaching plan for selected role(s) within specific department(s).	1936	\$415,597	P2 Start + 22 weeks
GRAND TOTAL ALL WORK STREAMS	52896	\$10,889,920	P2 Start + 48 weeks



Appendix A

EIM Organizational Processes



EIM Organizational Processes : Enterprise Data Governance Framework

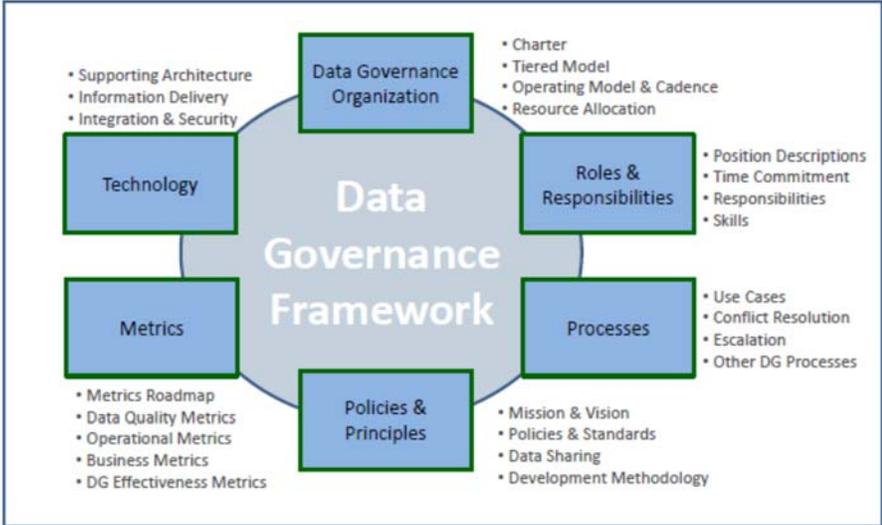
High Level Project Overview

1. Create Department Profiles
2. Create Legal Framework
3. Define Organizational Processes
4. Analyze Technology Infrastructure

DTMG

The framework components will be leveraged to design the organizational governance processes for EIM

4	Define organizational processes
4.1	Enterprise data governance framework
4.2	Key roles and responsibilities
4.3	Program guiding principles
4.4	Data sharing agreement template
4.5	Dept. governing board charter template
4.6	Data Steward position description
4.7	Data Manager position description
4.8	Communication plan
4.9	Change management plan
4.10	Program metrics





Introducing concepts, definitions and common terminology

1 Data Ownership

Who owns the data ?

The organizational group that has legal rights, ultimate authority and complete control over a set of data elements is the *owner* of the data set. Data ownership refers to both the possession of and responsibility for information. Ownership implies power as well as control. The control of information includes not just the ability to access, create, modify, package, derive benefit from, sell or remove data, but also the right to assign these access privileges to others.

What determines ownership ?

- Which group has the ultimate legal liability and accountability for a data related breach ?
- Which group has the ability to create, edit, modify, share and restrict access to the data ?
- Which group has the legal ability to assign, share or surrender all of these privileges to a third party.
- Which group can implement policies related to the creation, use and distribution of data ?

2 Data Stewardship

What is data stewardship ?

Data Stewardship is the formal accountability for business responsibilities ensuring effective control and use of data assets.

Corollaries-

- When extended to a person the definition is that of a 'business leader or recognized subject matter expert who manages the data assets in the best interest of the organization and on behalf of the department or functional area they represent'.
- Data Stewards are appointed to represent the data interests of all stakeholders, including but not limited to, the interests of their own departments.
- A data steward's responsibility stems from an understanding of the business domain and the interaction of business processes with data entities/elements.
- A data steward ensures that there are documented procedures and guidelines for data access and use.

3 Data Custodianship

What is the difference between Custodianship and Stewardship ?

Custodianship and stewardship are similar concepts - custodians are the technology counterparts of stewards who are responsible for data collection, consolidation, storage, maintenance quality control and implementation of business rules. Custodianship is the act of having data management and operational responsibility. Hence , when a policy alludes to departments being *custodians* of data , and state being the *owners* of the data , it would mean that the departments have the responsibility for management and accountability while the state has the ultimate legal authority. The words may be used interchangeably.



Introducing concepts, definitions and common terminology

What is Data Governance ?

4 Data Governance

Simply explained – Data Governance is ‘government for data’.

It is a framework to ensure that the data meets the expectations of all the business purposes, in the context of compliance, privacy, security, risks, sensitivity , business validity and optimum shared enterprise architecture.” It is the exercise of authority, control and shared decision making (planning, monitoring and enforcement) over the management of data assets.

How is Data Governance different from IT Governance or Program Governance ?

5 Governance in general

The term governance in general may apply to any program or organization .

‘Organizational governance’ broadly refers to the mechanisms , processes , oversight and relations by which organizations and groups are controlled and directed. IT governance is a subset discipline of corporate governance , focused on IT and its performance and risk management. Governance structures, committees and councils are also created for large programs like (in the case of SOM MiCam, MPI etc.). There is significant overlap in the charters and responsibilities of general IT project governance and Data Governance – however the two are not one and the same.

What is an ‘enterprise’ solution ? How is it different from departmental programs or solutions ?

6 Enterprise & Department

While the terms ‘enterprise software’, ‘enterprise solution’ and ‘enterprise governance’ are widely used in business, many organizations struggle with terminology and the dichotomy resulting from it. The primary and most important distinction between departmental or LoB solutions and enterprise solutions is in their scope of function.

- Departmental solutions are primarily developed around the functional needs of a particular department and aligns with the business of that group, while enterprise solutions have the onus to orchestrate, or harmonize needs from parts of the business which are not under the control of a single authority.
- While aligning with the operational needs of a departments business a department may have to meet those needs in a way that impedes their ability to meet the needs of other, adjacent organizations.
- An enterprise strategy links many departmental software solutions together in a way to execute the entire enterprise function.

Synergy is the creation of a whole that is greater than the simple sum of its parts

Increased focus on departmental business challenges or solutions, is necessary but not sufficient. Focus on individual areas alone, prevents a group from becoming or enabling something bigger.

As leaders and champions in re-inventing and advancing our organization’s capability for excellence, the question we must ask ourselves is -- how can the pieces be brought together so the result is greater than the sum of the individual.



EIM Organizational Processes: Data Governance Principles

A. Data must be governed so as to abide by all applicable laws, including statutes and regulations.

1. Applicable statutes and regulations for safeguarding and securing privacy of information must be met. Through creation and adoption of policies, the governance organization ensures adherence with those laws and regulations.
2. Discretionary policies must be reviewed to ensure consistency with established data governance principles to the extent to which the department/agency has the option of choosing policy content.
3. Some policy language can be derived straight from the language of a binding law; that aspect of the policy cannot be changed.
4. Depending on the relationship and data at issue, business associate agreements may be needed and the governance organization has the responsibility for making sure the agreements are in place and up to date.
5. Review of relevant laws, regulations, rules, and policies must occur on an ongoing basis.
6. State online services "terms of use" must be updated to ensure consistency with data objectives and the State's actual use of data.

Slide 4 of 9



EIM Organizational Processes: Data Governance Principles

B. Data is a State asset.

1. Subject to federal and State laws and regulations, ownership of data collected, stored, and used in the course of departmental business lies with the State of Michigan. Departments, agencies, and groups are stewards, custodians, or operational owners of their respective data areas. (Refer to the definitions for information on ownership and stewardship on slide 3 of 9.)
2. Data is a valuable asset. Sharing data increases value to the State beyond the use in one application or department or process area.
3. Data must be managed, secured, and accounted for as a strategic State asset (like material assets such as lands and buildings). Care must be taken to ensure that data is managed to be a reliable, accurate, consistent, and trusted asset.
4. To be shareable, data must be clearly defined and understood by the enterprise. A common definition and shared understanding of shareable data must be established and implemented across all State departments.
5. Data must provide the correct information and be made available when and where it is needed for effective decision making and quality customer service.
6. All levels of the data governance organization must act as champions to promote systemic awareness of the use of data as a valuable State asset.

Slide 5 of 9



EIM Organizational Processes: Data Governance Principles

C. Data must be managed by a data governance organization.

1. Data governance must have top-down sponsorship and be driven through executive leadership and support.
2. Effective data governance is an evolutionary process that is responsive to new and changing conditions in the data landscape. Iterative improvement is critical to make real impact through data governance.
3. The data governance organization and its nominated members must have real authority, including the ability to set strategic directions and priorities, settle data disputes, actively participate in next generation solution development, ensure adherence to data governance principles, and influence architectural decisions. (A list of responsibilities will be included in the future data governance charter.)
4. Next generation business solutions and processes must be aligned with data priorities of the enterprise. The data governance organization has the authority to mandate that alignment through procurement, system design, and implementations.
5. The data governance organization is responsible for defining the policies and standards and ensuring adoption throughout the enterprise. The data governance organization serves as an authority to identify, document, and escalate non-compliance with published policies and processes.
6. Strong communication and change management actions are critical success factors for effective data governance.

Slide 6 of 9



EIM Organizational Processes: Data Governance Principles

D. Data must have clearly defined accountability.

1. The data governance organization defines, implements, and maintains an accountability model for data custodianship, stewardship and operational ownership (Refer to the definitions for information on ownership and stewardship on slide 3 of 9.)
2. Each individual or group has accountability for the quality of the data they touch. (E.g., create, update, use, etc.)
3. Data is managed and accounted for at the appropriate level: department or enterprise as defined by the accountability model.
4. Data stewards and operational owners are accountable for data quality, definition, security, privacy, standardization, and appropriate use of data in their domains.
5. The accountability model includes a responsibility and role matrix which needs to be augmented on a regular basis to define boundaries and spans of control of departmental stewardship and enterprise stewardship.

Slide 7 of 9



EIM Organizational Processes: Data Governance Principles

E. Data quality must be ensured through continuous monitoring and improvement.

1. Data quality standards must be sufficiently defined to enable accurate identification, recording, and measurement.
2. Formal data definitions and standards must be developed and adhered to. Data stewards and data architects are accountable for developing and adhering to data definitions and standards for their collective and individual domains.
3. Quality standards focus on measuring business process and decision making improvements from complete, relevant, and unique data.
4. Enterprise master data must be tested against the standards consistently across the enterprise.
5. Distribution and enterprise-wide understanding of data standards must be available to all data creators, stewards, and users.
6. Effective data quality control and enforcement requires enterprise-wide data definitions, standards and models.

Slide 8 of 9

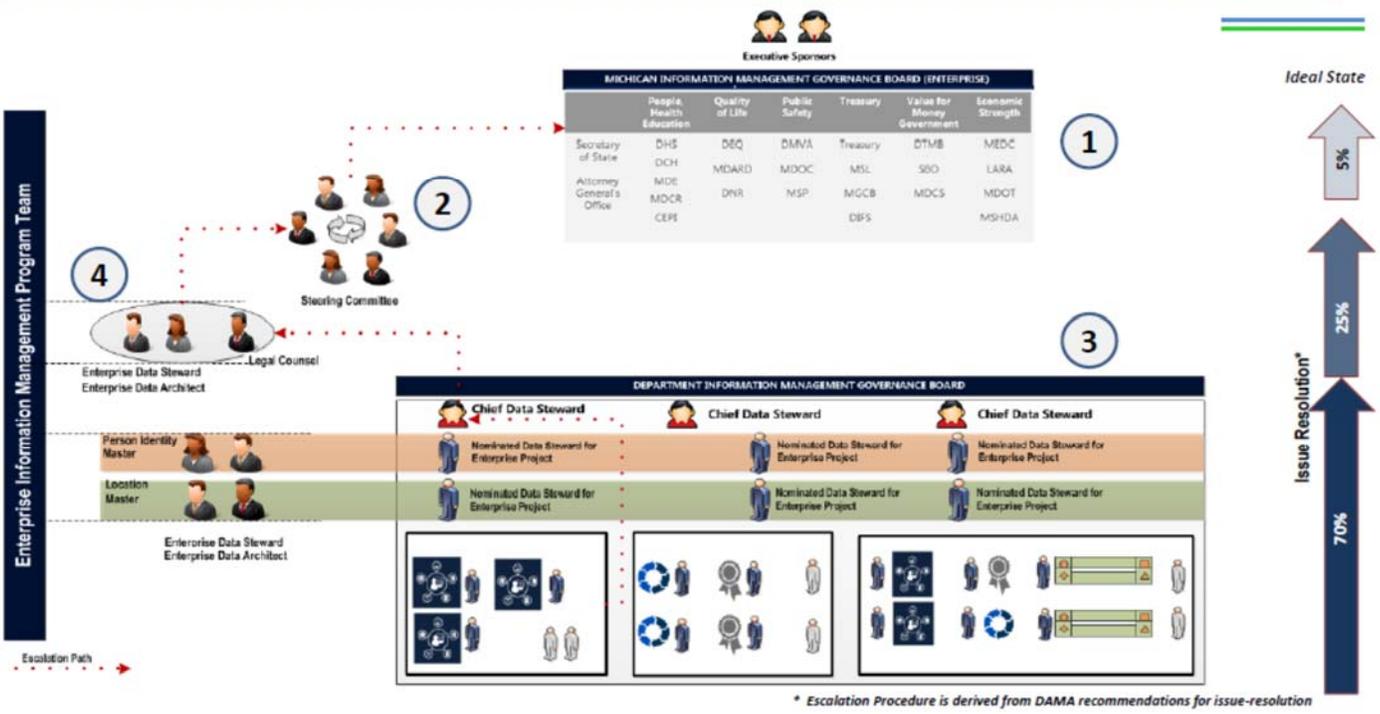


EIM Organizational Processes: Data Governance Principles

F. The data governance organization must define metrics and key performance indicators (KPIs) to measure efficiency and determine return on investment (ROI) and operational effectiveness.

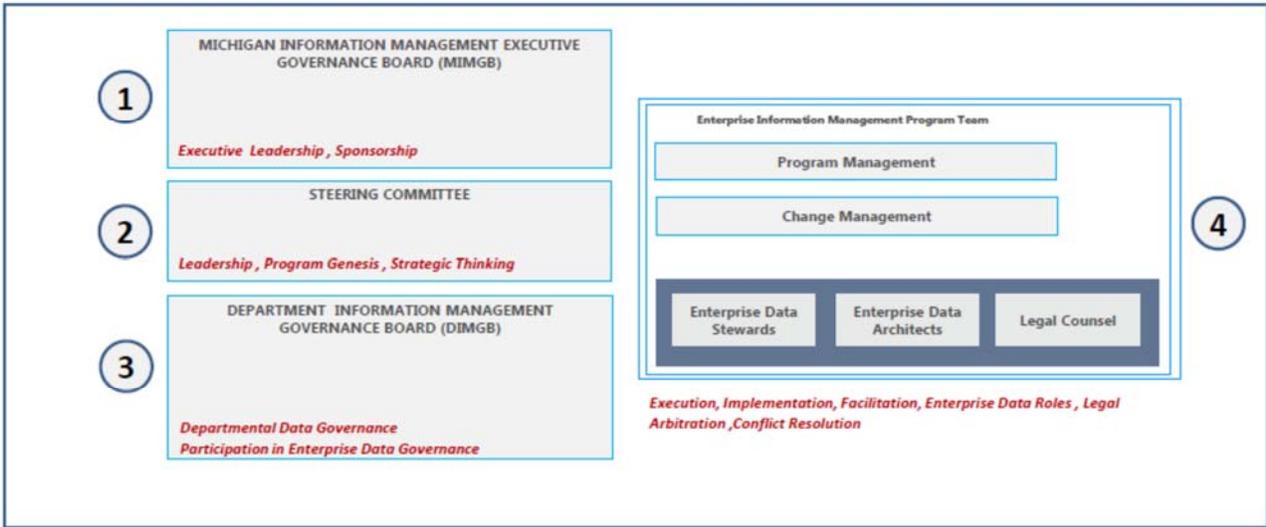
1. The data governance organization documents quantifiable targets and actionable measures to gauge and recognize the effectiveness of the program.
2. The data governance organization ensures that metrics are practical and in alignment with strategic objectives by stakeholder collaboration during the development, use, and reporting of metrics.
3. The data governance organization defines, develops, and reports on various data governance and data quality performance indicators.

State of Michigan Enterprise Information Management Organization Model
 Also referred to as the "data governance organization for SOM"





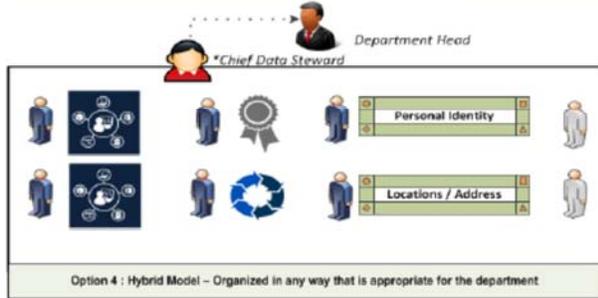
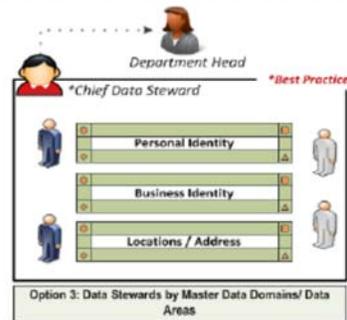
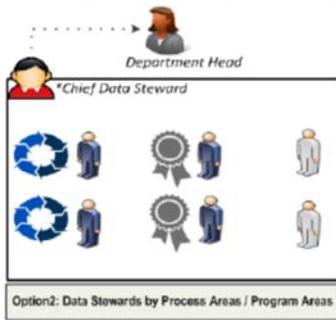
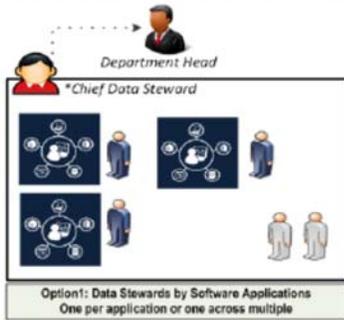
Components and key functions of the organization



The appendix contains the details of the charters and responsibilities of the different components. The subsequent slides contain salient points related to the organization model.



Deep-dive into Departmental Data Governance (component 3) : Possible models and minimal enterprise criteria



Departments and Agencies should have the flexibility to organize their data governance accountability model in any way that suits the business needs of their group. However, the following are three criteria that departments are expected to adhere to, in the interest of aligning with greater enterprise data governance goals for the State of Michigan.

- Every Department must have a Chief Data Steward who is the highest authority in data related decision making (While the nuances of the role may vary from situation to situation the role must have reasonable alignment with the enterprise recommended role description (appendix) to ensure org-wide alignment in definition and semantics)
- The Chief Data Steward should have a real / dotted line of accountability to the head of the department/ Chief deputy. This is to ensure that the role has appropriate authority to make decisions and safeguard the data interests of the group.
- The Chief Data Steward must have the ability to assign or a nominate, on as-needed basis, full-time/ part-time data stewards for participation in enterprise projects and enterprise roles (for eg: enterprise personal identity project, enterprise location master etc.)





Examples to demonstrate concept of application vs programs

Department	Software Application	Programs/Focus Areas
DHS	Bridges (Eligibility)	Food Assistance Cash Assistance Childcare Assistance Heating Assistance
DHS	MiCSES (Child Support)	Paternity Establishment Employer Related – wage determination, garnishment, withholding, reporting Enforcement
CEPI	Longitudinal Data System	Student Assessment Entities – building organization Federal Reporting
Secretary of State	BAM	Driver Vehicle
	QVF	Voter Boundaries



Summary of key constructs and salient points



Salient Points

- 1. Flexibility has been introduced in the department data governance organization model (DIMGB) to allow room for organic maturity in data governance for the departments.** The previous model pivoted around data domains – rather than process areas or software applications, while the currently proposed model is less prescriptive around how data governance is organized in a department and suggests flexibility and nimbleness.
- It is important to note however that the industry best-practice for data governance recommends organizing data stewards by data areas and data domains (the subject in consideration being 'data' governance and not process governance or IT governance) . **Hence, the recommended long-term maturity goal of the organization is to move to a data-domain centric governance model over time.**
- It is also important to note that it is a requirement of the enterprise that the **departments adhere to certain 'minimal enterprise alignment criteria' in their departmental governance structure** , to ensure uniformity , semantic consistence and enterprise-wide alignment.
- The model includes an 'EIM Program' team, which is a continuation of the current EIM project management team** and is a proposed support function within the SOM data governance organization. It has 4 core goals - a) Execution/Facilitation b) Program & Change management c) Enterprise Data Management and d) Legal counsel. This team will own the responsibility of day-to-day execution till the time the data governance organization is operational. The program team will continue in its role of providing enterprise data stewardship , enterprise data architecture and legal counsel for several of the Information Management projects, after the governance organization has been made operational.
- The EIM Program team is envisioned to have technical and legal authority to arbitrate data conflicts between the departments in matters that involves multiple departments** (data sharing, conflicting data definitions, data standards). It is proposed that 95% of conflicts be addressed between the DIMGB (department data governance) and the EIM Program Team and steering committee.
- The EIM Program team will initiate its operations with dedicated resources for program and change management**, and will staff the other roles (like Enterprise Data Steward, Enterprise Data Architect , Legal Counsel) on an as-needed basis as the program matures or more demand is generated as future implementation programs are undertaken (for example for Enterprise Personal Identity implementation for SOM.)



Summary of key constructs and salient points



Salient Points

7. **The current Steering Committee (with certain alterations) is envisioned to continue in its current capacity, its primary functions being 'leadership and strategic thinking' in matters of enterprise information management.** It is envisioned to serve as the functional leadership body for EIM, and acts as a first point of escalation for the EIM Program team. The steering committee may be reconstituted at the discretion of MIMGB.
8. **For operational purposes, the steering committee effectively represents the 24 member enterprise board (MIMGB).** The Steering Committee therefore needs to have, as its core motivation, the information management goals of the state as a whole, rather than the priorities of the departments they represent (if the goals are in conflict). Priorities of the department will be the responsibility of the chief data steward (DIMGB) and will have support from of the MIMGB.
9. **Standing up of the data governance organization is an evolutionary journey.** Data Governance as a subject, will take time to be comprehended and operationalized by the different groups. In the interim, there may be situations in which all of the suggested roles are not staffed, or that one person be required to serve multiple roles. The department chief data stewards will use their discretion and make interim staffing decisions in consultation with the EIM Program team and their respective department executives.
10. For example, the Chief Data Steward of a department may also serve as an alternate member of the steering committee, on occasion. In those situations where a person is required to play dual roles – **he/ she will be required to align with the philosophies of both roles based on the needs of the situation.** While on the steering committee, the chief data steward will be expected to put the needs of the enterprise before those of his priorities as a Chief Data Steward of a department – and vice-versa when he/she is addressing the needs of the department.
11. **The Steering Committee, EIM Program team and the Chief Data Stewards will convene regularly according to an agreed cadence.** The Steering Committee may require a separate cadence to convene without the representation of the Chief Data Stewards, at times.



Summary of key constructs and salient points



Salient Points

12. **The Michigan Information Management Governance Board (MIMGB) acts as the chief executive decision making board and meets three times a year to provide strategic direction**, weigh in on funding decisions, approve roadmaps and arbitrate on issues that the steering committee or EIM team have not been able to resolve.
13. The MIMGB will also be responsible for recognition of exceptional performance, sponsoring information management training events or annual conferences related to data management, analytics, data governance and other information management topics.
14. **The departments will be measured for improvements in data governance maturity they accomplish over the course of the next year**, according to an accepted maturity model. Metrics may include, amongst others – the "ratio of major process area / program functions vs number of data stewards" or "whether the department has appointed a chief data steward" or "how many data stewards were nominated by a department for an enterprise function (wherever applicable)", "or ratio of governed data elements / total number of critical data elements".
15. **Data Management Association (DAMA) and industry best practices recommend linking the success and effectiveness of data governance organization to individual performance metrics of the participating members of the organization**. This is a long-term proposition that will be evaluated by the MIMGB and the specifics of the model will be determined over the course of the next year. In the longer term, the MIMGB may have amongst its responsibilities evaluation of the individual and collective performance of the members of the steering committee and the EIM program team.



Charter Of the State of Michigan Data Governance Organization

Background & Purpose	Responsibilities
<p>Further to the Governor’s executive directive for establishing an Enterprise Information Management program to bolster advanced analytics and enable a citizen centric service model, we hereby outline the charter and responsibilities of the data governance organization. The data governance organization (inclusive of all its components as detailed in Section 1.3) is the governing body for the state EIM program (which has the responsibility of executing the 5 year EIM implementation roadmap following executive directive 2013-1). The data governance organization is envisioned to support, adopt and carry out all the necessary activities related to achieving the goals of the EIM program. It will have as its core philosophy, creation and promotion of ‘data-centric’ culture, towards the purpose of addressing and accomplishing the information management goals of the state.</p>	<p>Following are the key responsibilities of the data governance organization. Note that these responsibilities will be carried out by different parts and layers of the organization –</p>
	<p>Ensuring appropriate orchestration of people, processes and technology to manage the company’s critical master data assets by using roles, responsibilities, policies, and procedures to ensure that data is accurate, consistent, secure, and aligns with overall company objectives</p>
	<p>Defining strategic EIM investments and approving EIM program goals and the related funding required to execute on them</p>
	<p>Identifying, defining and detailing the EIM projects that need to be undertaken by the state towards enabling the strategic information goals (for example: Leveraging data across several state data repositories to accomplish a comprehensive 360 repository of citizen related data and unique identity of a citizen across their interaction points with the different agencies, enabling single-point of access and one-stop shop for the citizen’s state account information, enabling an enterprise metadata and data lineage glossary, establishing enterprise location master. Refer to section x.x for a list of known goals)</p>
	<p>Outlining a multi-year EIM roadmap for the projects by taking into consideration dependencies, cost and resource considerations.</p>
	<p>Initiating, governing, participating in procurement cycles and ensuring successful implementation of the aforementioned EIM projects.</p>
	<p>Ensuring and monitoring the alignment of the EIM program with overall SOM goals, objectives and other strategic initiatives</p>
	<p>Defining the foundational principles, policies and standards to ensure that data is managed, secured and accounted for as a strategic state asset. This involves ensuring appropriate process controls, structure, accountability and escalation protocol</p>
	<p>Ensuring adoption of the aforementioned principles and standards across all layers of the enterprise through effective communication and change management methodologies.</p>
	<p>Serving as an authority to identify, document, and escalate non-compliance with published standards and principles.</p>
<p>The Data Governance Organization will also regularly review the documented principles and policies and make amendments to the same as deemed necessary.</p>	
<p>Acts as a consulting services organization for providing guidance and advice with implementation of Data Governance activities for all data related programs.</p>	



Charter Of the State of Michigan Data Governance Organization

Background & Purpose

Further to the Governor’s executive directive for establishing an Enterprise Information Management program to bolster advanced analytics and enable a citizen centric service model , we hereby outline the charter and responsibilities of the data governance organization. The data governance organization (inclusive of all its components as detailed in Section 1.3) is the governing body for the state EIM program (which has the responsibility of executing the 5 year EIM implementation roadmap following executive directive 2013-1). The data governance organization is envisioned to support, adopt and carry out all the necessary activities related to achieving the goals of the EIM program . It will have as its core philosophy, creation and promotion of ‘data-centric’ culture , towards the purpose of addressing and accomplishing the information management goals of the state.

Responsibilities

- Continued ...
- Accountability & Authority**
 - Defining, implementing and maintaining an accountability model for operational ownership, custodianship and stewardship between the different layers of the organization. The accountability model will include a responsibility and role matrix that will be developed initially , and augmented on a regular basis to define boundaries and spans of control of departmental stewardship and enterprise stewardship
 - The Data Governance Organization and its nominated members must have real authority including the ability to set strategic directions and priorities, settle data disputes, actively participate in next generation solution development , and ensure adherence to Data Governance principles , influence architectural decisions
 - Data Quality is one of the most important responsibilities of the data governance organization. The data governance organization is responsible for ensuring that quality , semantic consistence and integrity of data is maintained by the business groups and users that transact with the data .
 - The Data Governance Organization also has the responsibility of employing change management mechanisms that will formulate the activities necessary to generate data governance acceptance across the enterprise and facilitate Data Governance operationalization.
 - The Data Governance organization is responsible to drive a meticulous change management strategy that enables agencies to roll-out organizational change
 - Change & Adoption**
 - Data Governance Organization is responsible for defining metrics and KPIs to measure efficiency and determine ROI and operational effectiveness. The Data Governance organization should measure quantifiable targets and actionable measures to gauge and recognize the effectiveness of the program.
 - The organization is responsible for owning, developing and reporting on various Data governance and Data Quality performance indicators
 - The organization ensures that metrics are practical and in alignment with strategic objectives by stakeholder collaboration during the development, use and reporting of metrics



Component 1 and 2 – Michigan Information Management Board (MIMGB) and Steering Committee Charter

State of Michigan Data Governance

Charter of the Michigan Information Governance Board (MIMGB)

The MIMGB is the chief governing body for the state EIM program , chaired by a representative from the Governor’s legal counsel. The MIMGB has membership representation from Directors or Chief Deputy Directors of all executive branch departments and agencies.

- Serves as a executive Data Governance body for the SOM EIM Program.
- Sets Strategic Direction
- Acts as ultimate authority on policies/principles and conflict resolution
- Approves long term goals for the EIM program
- Nominates / approves the members constituting the steering committee
- Approves the charter and the execution plan presented by the steering committee and EIM Program team.

Charter of the Steering Committee

The current Steering Committee (with certain alterations) is envisioned to continue in its current capacity, its primary functions being ‘thought-leadership’ and ‘intellectual strategic thinking’ in matters of enterprise information management. It is envisioned to function as the operational leadership body’ for EIM, second to the executive board (MIMGB)

- Is responsible for the genesis, evolution and maturity of program at the enterprise level while ensuring alignment with the departmental Data Governance efforts
- Works with the EIM Program team to define strategic business investments, create EIM program roadmap, business case and related funding models required to execute on the EIM initiatives
- Is responsible for prioritizing and approving EIM Programs
- Presents business case , roadmap , funding requests and priority escalation items to the MIMGB
- Ensures and monitors the alignment of the EIM DG program with the overall state of Michigan goals, objectives and other strategic initiatives
- Ensures strategic cross-functional alignment on a regular basis
- Works with the EIM Program Management representatives to ensure EIM governance program is empowered



Component 3 – Departmental Data Governance Charter, Roles & Responsibilities

Charter of the Departmental Data Governance Board (DIMGB)

The department data governance organization has the formal accountability of business responsibilities ensuring effective control and use of data assets within their department, while participating in and contributing to enterprise level data governance initiatives. Their primary responsibilities include but are not limited to -

1. Defining and undertaking projects and initiatives that improve or advance the information needs of the department's business. (For example, DCH –Master Person Index Program, CEPI – Metadata Glossary)
2. Establishing vision - clearly identifying short term and long term goals for their department's data needs.
3. Defining and undertaking initiatives that promote efficient and holistic data sharing strategies towards establishing a cohesive data environment.
4. Ensuring day-to-day governance of data assets – through quality monitoring, approval workflows, escalations, appropriate system validations
5. Participation in enterprise level governance objectives, and ensuring EIM goals are cascaded down to their departments.
6. Defining, implementing and maintaining an accountability model for operational ownership and custodianship of the data assets in the department.

Department Roles

Chief Data Steward

- Acts as chief decision maker and central contact point for all data issues within the department and reports progress to the governance board/ steering committee on a regular basis
- Acts as a decision maker and arbiter for data sharing requirements - balancing regulatory restrictions with data sharing imperatives of the state
- Acts as the central contact point between their department and the enterprise team and ensures the EIM objectives are cascaded down to their department as their goals
- Works with the data domain stewards to ensure EIM policies and mandates are applied adequately
- Evaluates all data projects in respective departments to ensure they are approved and funded adequately
- Is responsible for the data management maturity of the department
- Tracks the effectiveness of departmental data initiatives while monitoring the progress
- Ensures departmental alignment with enterprise priorities and projects

Data Stewards

- A data steward is a recognized subject matter expert who manages the data assets in the best interest of the organization and on behalf of the department or functional area they represent.
- Data Stewards have the formal accountability for data assets in the subject area / process / software application they are responsible for
- Enforce policies, procedures, behavioral guidelines through day-to-day governance and oversight
- Represent grass-root level operational context to the Chief Data Steward and the rest of the governance organization at the enterprise level
- Day-to-day responsibilities involve approve business naming standards, developing consistent data definitions, documenting data related business rules, monitoring the quality of the data, data-issue resolution, defining security requirements

State of Michigan Data Governance



Component 4 – Enterprise Information Management (EIM) Program Team Charter , Roles & Responsibilities

State of Michigan Data Governance	EIM Program team functions	Charter of the EIM Program Team	<p>The EIM Program Team is a proposed support function within the SOM data governance organization with 4 core goals – a) Execution /Facilitation b) Program & change management c) Technical expertise and d) Legal counsel.</p> <ol style="list-style-type: none"> The EIM Data Governance team is envisioned to work with the departmental data governance teams on a regular basis to promote a cross-agency enterprise group for shared master data assets The team ensures that the governance operations are carried out in an orderly fashion , goals are met , resources are well –utilized and programs are delivered on time and within budget Provides technical expertise in terms of enterprise data architecture / enterprise master data strategy and participates in cross-agency data projects (example: Enterprise Personal Identity Project) Includes Legal Counsel to enable arbitration in matters of shared data assets and projects that cross departmental boundaries.
		Program Management	<ul style="list-style-type: none"> •Program Management of initiatives on the EIM Roadmap (eg: Initial Data Governance Setup Programs and various Enterprise Data initiatives thereafter) •Ensuring that the data governance program / or other EIM projects are delivered on time and within budget leveraging the appropriate resources necessary to deliver on the agreed upon goals. •Utilizing agreed upon metrics to measuring progress and effectiveness of the data governance initiatives. Compiling and delivering periodic data governance performance reports. •Leverage the Steering Committee, as necessary, to get traction, and escalate issues to the enterprise data governance board. •Monitoring the progress of the local DM initiatives to ensure alignment with overall Data Governance goals across the organization.
		Change Management	<ul style="list-style-type: none"> •Responsible for driving adoption amongst several level and groups •Cultural & Capabilities Assessment, Identification of Change Management Needs •Identifying and leveraging enterprise Change Agents •Gamering support from Executive/Senior Management to establish appropriate tone from the top •Culture-based and/or mandatory enterprise-training to reinforce new Master DG processes and procedures through informal norms and behaviors •Socialize enterprise-relevant changes introduced in parallel with execution



Component 4 – Enterprise Information Management (EIM) Program Team Charter , Roles & Responsibilities

State of Michigan Data Governance	EIM Program team functions	Enterprise Data Steward for Shared Master Data	<ul style="list-style-type: none"> • Acts as the chief decision maker and central point of contact for the shared master data assets– across departments , and cross-functionally (personal identity master data , location master data etc.) • Acts as the chief business SME for enterprise master data implementation in their domain • Owns the responsibility of working across all departmental decisions related to the master data element to ensure the sanctity of enterprise master data is maintained • Works with their IT counterpart to ensure that the master data is viewed as a shared enterprise asset and all implementations includes the enterprise perspective in all decisions, system implementations etc. • Works with the departmental stewards to put controls , processes and monitoring in place to ensure the sanctity of the master data • Works with the department data stewards and legal counsel to arbitrate in matters related to shared master data.
		Enterprise Data Architect for Shared Master Data	<ul style="list-style-type: none"> • IT counterpart for the Enterprise Domain Data Owner • Responsible for the Enterprise Data Model for their domain (personal identity / assets etc.) • Chief Architect and technical decision maker for the shared master data assets – across departments , and cross-functionally. • Translates strategic objectives into information objectives and assessing technology needs. • Owns the responsibility of working across all departmental decisions related to the master data element to ensure the sanctity of enterprise master data is maintained • Ensures that the master data is viewed as a shared enterprise asset and all implementations includes the enterprise perspective in all decisions, system implementations etc. • Provides expertise in the development of business driven IT strategy in conjunction with Master Data Life Cycle development and implementation • Leads the development of the requirements, principles and models for the future-state vision in relation to the enterprise information architecture (EIA)
		Legal Counsel for EIM	<ul style="list-style-type: none"> • Legal decision make and arbiter in matters of shared enterprise master data assets. • Works in conjunction with the enterprise architect / stewards and the project management team to develop overarching guidelines and agreements for data sharing in enterprise projects • Works with the chief data stewards of the departments and the department attorneys. Aids the decision making and conflict resolution process for data sharing by balancing regulatory restrictions with data sharing imperatives of the state.



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Examples to demonstrate the charter of the DG organization against two project scenarios
Representative sample only , not exhaustive list of all project activities

	Data Governance Organization's Responsibility	For an EIM Project (Example Enterprise Location Master)	For a business transformation project , but not necessarily an EIM project – (Example ERP Implementation)
Initiation	Genesis and Ideation	Responsible	Informed
	Project Definition Business Case and Funding Approval	Responsible	Informed
	Project Charter , Team Set-Up , High Level Concept Modeling	Responsible	Informed
Architecture & Design	Conceptual Architecture	Responsible	Responsible
	Enterprise Data Architecture	Responsible	Responsible
	Requirements and design reviews	Responsible	Informed
	Product Procurement & Detailed Program Planning	Responsible	Consulted
	Data Migration Process and Design	Responsible	Responsible
	Business Process Modeling	Responsible	Informed
	Determining data management and approval workflows	Responsible	Responsible
Implementation	Implementation & Build Activities	Responsible	Informed
	Adherence to data regulations and policies	Responsible	Consulted
	Adherence to data governance principles	Responsible	Responsible
	Day to day project management	Responsible	- (Not Involved)
	Ensuring that technology support data governance principles	Responsible	Consulted
	Ensuring data quality is maintained in day-to-day operations	Responsible	Responsible
	Ensuring Technology enables the functional specifications	Responsible	-- (Not Involved)



Example Scenario : Day in life of Data Steward

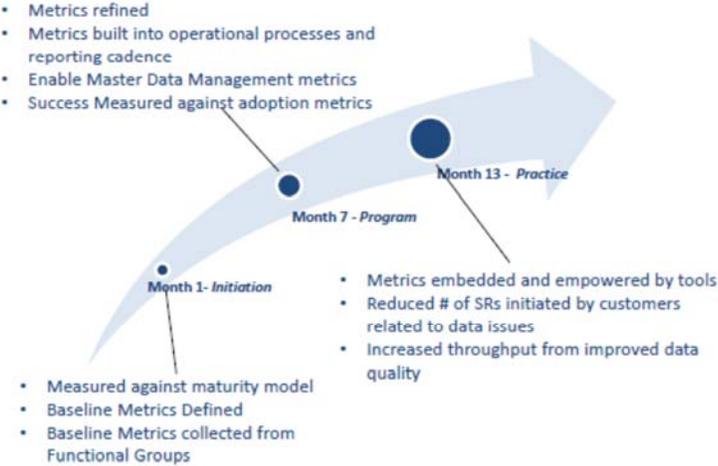
The Data Steward responsible for a subject area usually works with a select group of employees representing all aspects of the organization for that subject area.

Data Stewardship has, as its main objective, the management of the organization's data assets in order to improve their reusability, accessibility, and quality. It is the Data Stewards' responsibility to approve business naming standards, develop consistent data definitions, determine data aliases, develop standard calculations and derivations, document the business rules of the corporation, monitor the quality of the data in the data warehouse, define security requirements, and so forth.

Proactive Data Monitoring	Issue resolution	Participation in data architecture activities	Being accountable	Establishing standards	Documentation	Ensuring alignment with data policies, standards and procedures
<p>A Data Steward assigned to a subject area, maybe interacting with several systems that transact with or support the business operations for a group. One of the key functions of the data steward is to monitor the quality of newly created data. For this purpose systems implementation usually have data quality / integrity monitoring reports built in to support the business rules or data quality rules that align with the information management principles.</p>	<p>Data stewards usually act as the first-point of escalation as custodians of data. They are involved in resolving data quality issues, by reviewing error reports and taking corrective action on the data source.</p>	<p>Data stewards are responsible for establishing requirements and assessing the quality of the data in a database or a portion of a database used to make any official decision.</p>	<p>For integrity and quality of data that has been created or updated manually. Being Accountable and own the responsibility for ensuring that - the data can be relied on, and is correct. That the data is in a format that is readable and understandable.</p>	<p>Creation of data standards and business rules while following the formally established process. Data stewards are responsible for leading or supporting the data standards efforts</p>	<p>Ensuring that there is current documentation on the data such as when they were collected, where, how, by whom, and under what conditions</p>	<p>Data stewards often coordinate with the various cross-functional officials in their local or state organizations to establish data requirements, ensure data retention, quality, security requirements are being met.</p>



EIM Organizational Processes : Evolutionary approach to Metrics





EIM Organizational Processes : Metrics Examples

Metric Category	Example
Operational Effectiveness Metrics	<ul style="list-style-type: none">▪ The # of unique shared master data records by domain type▪ The # of data elements governed at the enterprise level▪ The # of projects/initiatives supported by the enterprise data governance organization▪ The # of new 'data issues' and # of open 'data issues'▪ The # of hours spent correcting or validating data issues
Data Quality Metrics	<ul style="list-style-type: none">▪ % of duplicate master records – by domain type▪ % of records with invalid data – by domain type▪ Number of records that need manual reconciliation or follow-up due to outdated or incorrect data
Business Metrics	<ul style="list-style-type: none">▪ Number of FOIA requests (trend)▪ Number of citizen access points through MIPage portal▪ Number of departments that have named a Chief Data Steward▪ Number of returned mail items due to incorrect addresses
KPIs to Measure Work Stream Effectiveness	<ul style="list-style-type: none">▪ Cost per quarter of EIM data governance initiatives▪ # of data issues resolved by month▪ # of data issues escalated by month and level of escalation



Appendix A – EIM Communication and Organizational Change Management Plans

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STATE OF MICHIGAN

Request for Proposal No. 007115B0004087
 Enterprise Information Management (EIM) Implementation Services

EXHIBIT A PRICING

1. The Contractor must provide a pricing schedule for the proposed Contract Activities using the table below, and by entering the total by deliverable milestone line item in the Items tab of the quote submitted electronically through Buy4Michigan in the unit price field for each line item. The pricing schedule should be submitted in a modifiable format (e.g., Microsoft Word or Excel); however, you may also submit an additional pricing schedule in a non-modifiable format (e.g., PDF). Failure to complete the pricing schedule as requested may result in disqualification of your proposal. Please expand the table below to provide an itemization of key subtasks for each work stream; entering the subtotal by work stream in both the table and the specific line item for the electronic bid submission through Buy4Michigan. *Table I below and in Buy4Michigan submitted quote.*
2. Price proposals must include all costs, including but not limited to, any one-time or set-up charges, fees, and potential costs that Contractor may charge the State (e.g., configuration, programming, consulting services, etc.).
3. An hourly unit rate table is provided for rates to be used to calculate payments up to not to exceed fixed thresholds for each work stream; and for future time and materials work to be completed through this Contract. *Table II below.*
4. The Contractor is encouraged to offer quick payment terms. The number of days must not include processing time for payment to be received by the Contractor's financial institution.
5. By submitting its proposal, the Contractor certifies that the prices were arrived at independently, and without consultation, communication, or agreement with any other Contractor.

Table I
 *Note that these activities occur in iterations for each state department

Phase I Work Streams and Deliverables	Estimated Hours	Fixed Cost Threshold	Anticipated Acceptance Date
A. Implementation of Organizational Processes within each State department (Enter total for Work Stream A in this row.)	4709	\$762,648	12/14/2015
1. Assessment per State department that includes current EIM maturity level and target level. This assessment will include a review of current EIM related business process initiatives and associated technologies.	1420	\$230,005	11/9/2015
2. Actionable roadmap for each department to implement EIM organizational processes necessary to reach target maturity level. Per department, the roadmap should include key activities, an explicit checklist of action items, and timeframes.	1345	\$217,899	11/16/2015



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<p>3. Enterprise roadmap, including a consolidated project schedule that depicts a statewide perspective for implementing organizational processes across all departments, including key activities, key resources, and timeframes for reaching the target maturity level. Critical components of the enterprise roadmap are organizational change management, communication, education and marketing.</p>	<p>300</p>	<p>\$48,422</p>	<p>7/6/2015</p>
<p>4. Development and presentation of workshops training sessions, and materials including a dry run for the project team.</p>	<p>1644</p>	<p>\$266,322</p>	<p>12/14/2015</p>
<p>B. Enterprise Data Architecture (Enter total for Work Stream B in this row.)</p>	<p>1191</p>	<p>\$254,860</p>	<p>12/14/2015</p>
<p>1. Comprehensive narrative and detailed model for a software solution sufficient to achieve enterprise-class data sharing of structured data, including:</p> <ul style="list-style-type: none"> a. Logical diagram that elaborates the interfaces and workflow of the model b. Tools needed (category and type, not necessarily brands and products) c. Survey of the collection of tools and solutions we already have in our environments d. Detailed examination of the recommended tools and software needed to supplement the existing inventory of tools and software. e. Roster of the skills required to implement, operate, and maintain the above, with an explanation of each by role f. Estimate of State staffing requirements to achieve these goals, including roles, number of staff per role and level of effort. g. Estimate of Contractor staffing requirements to achieve these goals, including roles, number of staff per role and level of effort. h. Calendar of events and a comprehensive schedule (laid out relative to the time of contract award) for the completion of these items 	<p>459</p>	<p>\$98,023</p>	<p>11/2/2015</p>
<p>2. The same (all of the above) for unstructured data, plus a narrative and detailed model for a software solution to:</p> <ul style="list-style-type: none"> a. Find data b. Identify data c. Classify data d. Automatically harvest and catalog metadata about the discovered data. 	<p>366</p>	<p>\$78,419</p>	<p>12/14/2015</p>



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2. Identification and explanation of methods to achieve deliverables 1 and 2 above.	366	\$78,419	12/14/2015
C. Enterprise Business Glossary (Enter total for Work Stream C in this row.)	1344	\$235,321	11/2/2015
1. Enterprise requirements definition for an enterprise business vocabulary and data source lineage system, including services for authoring and sharing business metadata	474	\$83,054	9/21/2015
2. Evaluation of tools, approaches, and solutions that the State already uses to manage data definitions and metadata from the perspective of expansion to an enterprise solution	237	\$41,527	9/21/2015
3. Recommendations for implementation of an enterprise business glossary	633	\$110,740	11/2/2015
D. Enterprise Master Data Management (MDM) for personal and business identity (Enter total for Work Stream D in this row.)	2093	\$338,954	9/21/2015
1. Enterprise requirements definition for an enterprise MDM solution for uniquely identifying citizens and businesses which provides a 360 degree view across State department personas such as student, driver, beneficiary, claimant, recipient, taxpayer, licensee, or service provider. Requirements must include consideration of critical systems such as SIGMA and MiDEAL.	1196	\$193,688	9/14/2015
2. Evaluation of tools, approaches, and solutions that the State already uses to manage individual and business identity for potential expansion to the enterprise level.	399	\$64,563	8/17/2015
3. Recommendations for implementation of an enterprise solution for MDM for identity.	498	\$80,703	9/14/2015
E. Enterprise Master Data Management (MDM) for location, including addresses (Enter total for Work Stream E in this row.)	2093	\$338,954	11/30/2015
1. Enterprise requirements definition for an enterprise MDM solution for addresses and location, including both address cleansing and geospatial visualization. Requirements must include consideration of critical systems such as the State's enterprise resource management tool and the MiDEAL system.	1046	\$169,477	11/30/2015
2. Evaluation of tools, approaches, and solutions that the State already uses to manage location and address for potential expansion to the enterprise level.	698	\$112,985	11/16/2015
3. Recommendations for implementation of an enterprise solution for MDM for location and address.	349	\$56,492	11/30/2015
F. Enterprise automated solution for Data Sharing Agreements (DSA) (Enter total for Work Stream F in this row.)	1075	\$188,258	12/14/2015



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1. Enterprise requirements definition for an enterprise automated DSA	470	\$82,363	11/30/2015
2. Evaluation of tools, approaches, and solutions that the State already uses for potential expansion to the enterprise level	269	\$47,065	12/7/2015
3. Recommendations for implementation of an automated enterprise DSA solution	336	\$58,830	12/14/2015
G. Analytics Strategy (Enter total for Work Stream G in this row.)	1512	\$281,624	12/7/2015
1. Baseline analysis of existing enterprise analytics maturity	178	\$33,132	9/14/2015
2. Key enterprise performance indicators for successful analytics strategy – merging cross-industry best practices and key State outcome measures	178	\$33,132	9/14/2015
3. Evaluation and recommendations regarding enterprise and departmental human resources required for successful execution of analytics strategy	178	\$33,132	9/14/2015
4. Recommendations regarding best practice for organizational structure and placement of information management and analytics unit.	489	\$91,114	12/7/2015
5. Evaluation and recommendation regarding emerging analytics technology solutions.	489	\$91,114	12/7/2015
GRAND TOTAL ALL WORK STREAMS	14017	\$2,400,621	12/14/2015

Table 2 – Please provide estimated pricing for Phase II here below. Since the specifications for Phase II will not be completed until after Phase I, it is anticipated that any pricing estimated here will be top level thresholds, and that when the final Phase II proposal is submitted it will include pricing which is considerably lower with the removal of unknowns.

Phase II Work Streams and Deliverables	Estimated Hours	Fixed Cost Threshold	Anticipated Acceptance Date
A. Implementation of Organizational Processes within each State department (Enter total for Work Stream A in this row.)	3188	\$880,070	P2 Start + 18 weeks
1. Development and delivery of advanced workshops and/or trainings, including a dry run for the project team	1584	\$340,035	P2 Start + 18 weeks
2. Development and delivery of a customized coaching plan for selected role(s) within specific department(s).	1584	\$340,035	P2 Start + 18 weeks
B. Enterprise Data Architecture (Enter total for Work Stream B in this row.)	NA	NA	NA



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1. No deliverables are identified for Phase II for this Work Stream, Bidder to include total for any proposed deliverables here.	NA	NA	NA
C. Enterprise Business Glossary (Enter total for Work Stream C in this row.)	1632	\$378,980	P2 Start + 12 weeks
1. Using State SUITE processes, design and configure the solution	408	\$94,745	P2 Start + 12 weeks
2. Test the solution, culminating in User Acceptance Testing (UAT)	408	\$94,745	P2 Start + 12 weeks
3. Train users	408	\$94,745	P2 Start + 12 weeks
4. Implement the solution	408	\$94,745	P2 Start + 12 weeks
D. Enterprise master data management for personal and business identity (Enter total for Work Stream D in this row.)	20928	\$4,261,512	P2 Start + 48 weeks
1. Using State SUITE processes, design and configure the solution	5232	\$1,065,378	P2 Start + 12 weeks
2. Test the solution, culminating in User Acceptance Testing (UAT)	5232	\$1,065,378	P2 Start + 24 weeks
3. Train users	5232	\$1,065,378	P2 Start + 36 weeks
4. Implement the solution	5232	\$1,065,378	P2 Start + 48 weeks
E. Enterprise master data management for location, including addresses (Enter total for Work Stream E in this row.)	20928	\$4,261,512	P2 Start + 48 weeks
1. Using State SUITE processes, design and configure the solution	5232	\$1,065,378	P2 Start + 12 weeks
2. Test the solution, culminating in User Acceptance Testing (UAT)	5232	\$1,065,378	P2 Start + 24 weeks
3. Train users	5232	\$1,065,378	P2 Start + 36 weeks
4. Implement the solution	5232	\$1,065,378	P2 Start + 48 weeks
F. Enterprise automated solution for data sharing agreements (Enter total for Work Stream F in this row.)	2368	\$476,652	P2 Start + 8 weeks



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1. Using State SUITE processes, design and configure the solution	592	\$119,163	P2 Start + 8 weeks
2. Test the solution, culminating in User Acceptance Testing (UAT)	592	\$119,163	P2 Start + 8 weeks
3. Train users	592	\$119,163	P2 Start + 8 weeks
4. Implement the solution	592	\$119,163	P2 Start + 8 weeks
G. Analytics Strategy (Enter total for Work Stream G in this row.)	3872	\$831,194	P2 Start + 22 weeks
1. Development and delivery of advanced workshops and/or trainings	1936	\$415,597	P2 Start + 22 weeks
2. Development and delivery of a customized coaching plan for selected role(s) within specific department(s).	1936	\$415,597	P2 Start + 22 weeks
GRAND TOTAL ALL WORK STREAMS	52896	\$10,889,920	P2 Start + 48 weeks



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Table III

Time and Materials (T&M) Labor Rate Tables

Note: The following categories are provided for vendor's convenience. If additional roles or materials are required, please provide relevant detail.

Roles and/or Materials for Future Enhancements, Configuration and/or Customization	Unit cost (\$)
Project managers	\$240
Business analysts	\$140
System analysts	\$195
Programmer/developers	\$175
System administrators	\$175
Database administrators	\$175
Q/A Manager	\$240
Security specialist	\$400
Testers	\$175
Technical writers	\$175
CM specialists	\$400
System Architects	\$240
Network engineer/administrator	\$175
Software Architects	\$240
Project assistants	\$175
Web developers	\$175
Application trainers	\$175
Others: (List) below:	



Appendix C - AICPA Code of Conduct