



STATE OF MICHIGAN
CENTRAL PROCUREMENT SERVICES
Department of Technology, Management, and Budget
320 S. WALNUT ST., LANSING, MICHIGAN 48933
P.O. BOX 30026 LANSING, MICHIGAN 48909

CONTRACT CHANGE NOTICE

Change Notice Number **40**

to

Contract Number **071B1300138**

CONTRACTOR	OPTUM GOVERNMENT SOLUTIONS, INC.	STATE	Program Manager	Various	MULTI
	822 Centennial Way, Suite 100				
	Lansing, MI 48917				
	Jeanne McNeil		Contract Administrator	Shannon Romein	DTMB
	517-993-0913			(517) 898-8102	
	jeanne.mcneil@optum.com			romeins@michigan.gov	
	CV0000961				

CONTRACT SUMMARY				
PRE-QUAL PROGRAM DTMB DATA WAREHOUSE BUSINESS INTE				
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS		EXPIRATION DATE BEFORE
December 21, 2010	December 20, 2015	5 - 2 Year		December 20, 2023
PAYMENT TERMS		DELIVERY TIMEFRAME		
ALTERNATE PAYMENT OPTIONS				EXTENDED PURCHASING
<input type="checkbox"/> P-Card		<input type="checkbox"/> PRC	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS				
DESCRIPTION OF CHANGE NOTICE				
OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
<input checked="" type="checkbox"/>	2 years	<input type="checkbox"/>		December 20, 2025
CURRENT VALUE	VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE		
\$171,943,670.00	\$0.00	\$171,943,670.00		
DESCRIPTION				
Effective 11/30/2023, the last two remaining option years of this Contract are hereby exercised. The revised Contract expiration is 12/20/2025.				
All other terms, conditions, specifications, and pricing remain the same per contractor, agency, and DTMB procurement approval.				

**Program Managers
for
Multi-Agency and Statewide Contracts**

AGENCY	NAME	PHONE	EMAIL
DTMB	Dave Fox	517-241-6483	FoxD@michigan.gov



STATE OF MICHIGAN
CENTRAL PROCUREMENT SERVICES
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 **39**
to
Contract Number **071B1300138**

CONTRACTOR	OPTUM GOVERNMENT SOLUTIONS, INC.	STATE	Program Manager	Various	MULTI
	822 Centennial Way, Suite 100				
	Lansing, MI 48917		Contract Administrator	Matt Weiss	DTMB
	Jeanne McNeil			(517) 256-9895	
	517-993-0913			weissm4@michigan.gov	
	jeanne.mcneil@optum.com				
	CV0000961				

CONTRACT SUMMARY				
PRE-QUAL PROGRAM DTMB DATA WAREHOUSE BUSINESS INTE				
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE	
December 21, 2010	December 20, 2015	5 - 2 Year	December 20, 2021	
PAYMENT TERMS		DELIVERY TIMEFRAME		
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING	
<input type="checkbox"/> P-Card		<input type="checkbox"/> PRC	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS				
DESCRIPTION OF CHANGE NOTICE				
OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
<input checked="" type="checkbox"/>	2-Years	<input type="checkbox"/>		December 20, 2023
CURRENT VALUE	VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE		
\$146,755,166.00	\$25,188,504.00	\$171,943,670.00		
DESCRIPTION				
Effective 12/8/2021, this Contract is hereby increased by \$25,188,504.00, which is a not to exceed amount. Two option years are exercised. The revised Contract expiration is 12/20/2023. Funding covers both option years. The following amendment is hereby incorporated into the Contract.				
All other terms, conditions, specifications, and pricing remain the same per contractor, agency, DTMB procurement and State Administrative Board approval on 12/7/2020.				

**Program Managers
for
Multi-Agency and Statewide Contracts**

AGENCY	NAME	PHONE	EMAIL
DTMB	Dave Fox	517-241-6483	FoxD@michigan.gov



**MICHIGAN DEPARTMENT OF TECHNOLOGY,
MANAGEMENT AND BUDGET
DATA WAREHOUSE (DW) AND BUSINESS INTELLIGENCE (BI) SERVICES WORK
REQUEST and STATEMENT OF WORK**

This Work Request and Statement of Work (collectively the “Work Request”) are being issued to Optum Government Solutions, Inc. (“Optum” or “Vendor” or “Contractor”) under Optum’s Contract (071B1300138) with the Michigan Department of Technology, Management and Budget, Procurement, as established under the Data Warehouse and Business Intelligence Program.

Project Title: Michigan Department of Health and Human Services Data Warehouse	Period of Coverage or Extension Period: 12/21/2021-12/20/2023
Requesting Agency: Michigan Department of Technology, Management, and Budget (DTMB)	
DTMB Program Manager: David Fox	Phone: 517-930-0972 Email: foxd@michigan.gov
Agency Program Manager: Cynthia Green-Edwards	Phone: 517-284-1035 Email: EdwardsC@michigan.gov
DTMB Contract Administrator: Matt Weiss	Phone: 517-256-9895 Email: weissm4@michigan.gov
Contractor Contract Administrator: Jeanne McNeil	Phone: 517-993-0913 Email: jeanne.mcneil@optum.com

BACKGROUND:

MDHHS has been using the data warehouse since 1994 to direct policy, detect fraud, identify potentially valuable new initiatives, reduce error rates, calculate rates and more.

MDHHS utilizes the data warehouse for multiple purposes including mission critical functions. It functions as the department's decision support system. MDHHS uses data from the warehouse for rate setting for hospitals and managed and long term care providers. It is used to manage the performance of its partners (managed care providers and others) as well as programs within MDHHS. The Department has an extensive analytics effort to ensure that funds are being spent most effectively, including detecting and prosecuting fraud, and assure that Medicaid beneficiaries are getting the best care possible. In support of departmental management, the data warehouse is used to analyze trends, report on all aspects of Medicaid Eligibility, Child Welfare, and Child Support, and provides critical support to the budgeting process. Beyond this, the data warehouse provides significant analytical support for epidemiology and other studies. In addition, MDHHS will be adding new data sources and increasing their collaboration with other agencies along with adding new analytical tools.

MDHHS has relied on State and Contractor staff to provide data warehouse support and business intelligence services. These services include: providing data warehouse Extract, Transform and Load (ETL) services, application development, web development, business intelligence model, reporting, query development, help desk support, training and data analysis.

Health Services Data Warehouse –

MDHHS will be expanding its use of the data warehouse as it continues to implement new functionality and expand ongoing work in its Medicaid Management Information System (MMIS), known as CHAMPS (Community Health Automated Medicaid Processing System). CHAMPS efforts underway include federally mandated projects such as the Promoting Interoperability Program, Electronic Visit Verification (EVV), and the Transformed Medicaid Statistical Information System (T-MSIS). The Department expects to utilize the data warehouse for Health Information Technology/Health Information Exchange initiatives, Medicaid statistical data analysis and managed care rate setting, and the Integrated Care Dual Eligibles Project. The Promoting Interoperability Program and Michigan Health Information Network are American Recovery and Reinvestment Act of 2009 (ARRA) initiatives to improve health care quality, cost, efficiency, and patient safety through electronic exchange of health information. An important requirement of these ARRA initiatives requires the use of clinical data to improve patient care outcomes, which will involve significant research efforts using de-identified data. It is anticipated that much of the data will be stored in the data warehouse. To store and use of this ARRA initiative data will require significantly increased data warehouse capabilities.

Human Services Data Warehouse –

MDHHS will be expanding its use of the data warehouse as it completes the acquisition and transition to a new Child Welfare application, currently known as MiSACWIS. Additionally, there will be an increased need to set up and implement self-service reporting in the major programs (Eligibility, Child Welfare, and Child Support). There will also be a transition effort in ETL services to move from "home-grown" scripting and data loads to using a COTS/GUI interface with more built in tracking and auditing capabilities.

The Staff Augmentation delivery process will be used for Health and Human Services positions, where the "Staff Augmentation" delivery process is defined as:

Roles:

- DTMB Program Manager as I/T owner
- MDHHS Agency Program Manager as business owner
- Contractor Contract Administrator as business intelligence services provider, i.e., providing business and I/T expertise

Delivery Process:

- The MDHHS Project Management Governance specifies each Health and Human Services project to the DTMB Program Manager.
- The DTMB Program Manager and MDHHS Agency Program Manager, with input from the Contractor Contract Administrator, work together to clarify project priorities via the State's PMO process.
- Contractor staffing resources work under the direction of their assigned manager who specifies Contractor staff roles, priorities, and specific project allocation levels.

- Contractor provides staffing resources with the DTMB defined skillset to work alongside DTMB resources under the direction of their assigned manager.

Standards:

- Manager assignments are determined by the DTMB Program Manager, with input from MDHHS Agency Program Manager and Contractor Contract Administrator.
- Contractor staff will be managed by DTMB and/or Contractor Managers including project assignment, workload, and technical direction/implementation as determined by the DTMB Program Manager.
- In some cases, Contractor staff will be located with the DTMB manager and team to which they are assigned. Contractor staff may also be located with the Contractor Manager. These assignments are determined by the DTMB Program Manager.
- Projects on which Contractor staff are working will be managed by State project managers supplied by DTMB/EPMO.

Contractor movements from Contractor managed to State managed will be documented through a Change Notice to the Contract by submitting a Change Request to Contractor that shall describe the specifics associated with that move. Such Change Request shall include, without limitation (a) the resources and scope of work that would be subject to such move, (b) the timing of the desired move and (c) any other changes to this Work Request. Contractor shall not withhold or delay providing a response to such Change Request but instead shall provide a Change Request Proposal to the State within ten (10) business days following receipt of the Change Request. Cost will be subject to the rates as defined in this Change Notice. Once the details of the Change Request Proposal or any modifications thereto have been agreed upon, DTMB and Contractor shall enter into a replacement Work Request.

Description of Services:

Michigan Department of Technology, Management and Budget (DTMB) has issued this Work Request to obtain the following positions to support, maintain and execute enhancement projects of various sizes for the MDHHS Data Warehouse:

For this extension, a new SIGMA DOIT1 request will be initiated to issue a DOIT1 for \$12,594,252 for the twelve month period commencing 12/21/2021 to 12/20/2022 ("Year 1"), and again for the twelve month period commencing 12/21/2022 to 12/20/2023 ("Year 2"). Each DOIT1 will provide for separate invoicing for the following amounts:

1. The "Subtotals for Health Services" amount from Appendix A Table 1, Part 1 (i.e., \$10,792,780); and
2. The "Subtotals for Human Services" amount from Appendix A Table 1, Part 2 (i.e., \$1,801,472).
3. (Note - The State may choose to add any unused balance from Year 1 to the corresponding DOIT1 totals for Year 2.)

Both parties agree that this Work Request forms an integral part of a Change Notice to the Contract that provides for a 24-month extension of the Term of the Contract through 12/20/2023.

For Health Services Data Warehouse (52 resources = 35 full-time and 17 part-time):

- Four (4) Data Warehouse Project Manager
- Two (2) Data Warehouse Architect
- One (1) Data Warehouse Database Administrator
- Ten (10) Data Warehouse Developers Senior
- Zero (0) Data Warehouse Developers Junior
- One (1) Data Warehouse Designer/Modeler
- One (1) Data Warehouse Business Intelligence Report Developer
- Ten (10) Data Warehouse Business Intelligence Analysts Senior
- Two (2) Data Warehouse Business Intelligence Analysts Junior
- One (1) Data Warehouse Help Desk Analyst
- Six (6) Data Warehouse Web Developers Senior
- Zero (0) Data Warehouse Web Developers Junior
- Fourteen (14) Subject Matter Experts

For Human Services Data Warehouse (Seven (7) full time resources):

- One (1) Data Warehouse Subject Matter Expert – Child Welfare
- One (1) Data Warehouse Database Administrator
- Three (3) Data Warehouse Developers Senior
- One (1) Data Warehouse Business Intelligence Analysts Senior
- One (1) Data Warehouse Business Objects Architect

This Work Request includes a total of fifty-nine (59 Full Time Equivalents (FTEs), consisting of 42 Full-time and 17 part-time resources. The total number of FTEs may be increased or decreased throughout the life of this Work Request, based on department needs and available funding. The fifty-two (52) resources on the Health Services Data Warehouse and seven (7) resources on the Human Services Data Warehouse will continue to augment the Department of Technology, Management, and Budget (DTMB) Agency Services with development, support, maintenance and enhancements to critical projects for the Michigan Department of Health and Human Services (MDHHS) DW.

It is the State's intent to establish this Work Request for BI Services to be provided to DTMB, in support of MDHHS, for a time period defined above as the Extension Period.

The work performed via this Work Request will be on a time and materials basis.

PROJECT OBJECTIVE:

The objective of this Work Request is to assist DTMB with the development, support, maintenance and enhancement of MDHHS Data Warehouse applications, which is an on-going activity prompted by changes in federal and state regulations, evolving business needs, opportunities for improving business processes, continued software and hardware upgrades, and break fixes.

SCOPE OF WORK:

- The scope of this Work Request is to provide Data Warehouse Business Intelligence (BI) Services on an as needed basis to support, maintain, and execute enhancement projects of various sizes for the MDHHS Data Warehouse set forth in this Work Request.
- Develop and maintain Data Warehouse BI applications that support MDHHS's day-to-day business operations.
- Resources will become familiar with DTMB personnel roles, DTMB supporting MDHHS's business processes, and DTMB's State Unified Information Technology Environment (SUITE) and DTMB technical standards, controls, and procedures.

Required Skill Category Requested:

1. Data Warehouse Project Manager
2. Data Warehouse Architect
3. Data Warehouse Database Administrator
4. Data Warehouse Developer Senior
5. Data Warehouse Developer Junior
6. Data Warehouse Designer/Modeler
7. Data Warehouse Business Intelligence Report Developer
8. Data Warehouse Business Intelligence Analyst Senior
9. Data Warehouse Business Intelligence Analyst Junior
10. Data Warehouse Help Desk Analyst
11. Data Warehouse Web Developer Senior
12. Data Warehouse Web Developer Junior
13. Subject Matter Expert
14. Data Warehouse Business Objects Architect

TASKS:**REQUIRED TASKS**

- The Contractor must attend security awareness training and any other relevant security and or confidentiality training requested by MDHHS and/or DTMB. Contractor staff must sign appropriate agreements or training certifications.

EXAMPLES OF ONGOING and UPCOMING CONTRACTOR TASKS

(these tasks may change based on direction from the State)

Health Services Data Warehouse

Contractors will provide support on a time and materials basis for the following Decision Support System (DSS) Advanced Planning Document (APD) Activities.

Detailed tasks for each Activity are listed in the APD for each fiscal year.

1. Develop Production Reports for the DW

- The Medicaid Enterprise relies on the DW for the majority of its production reporting, including reports needed for certification of federally funded source systems, extracts, and other production reports used to manage and evaluate MDHHS programs. This includes creation of new reports to align with new initiatives and/or program areas and enhancements to existing reports to correspond with source system changes. Users of these reports include, but are not limited to, MDHHS management and staff, the State legislature, federal agencies, counties, and providers.
- Production report development includes the following general tasks:
 - Map report data elements to corresponding data fields in the data warehouse
 - Conduct requirements gathering sessions to finalize requirements with MDHHS users
 - Develop, test and implement updated and new report versions

2. Provide Updated Analytic, Reporting, and Data Mining Tools and Enhanced Analytic Capability

- The MDHHS vision continues to include the use of ad-hoc analytics, predictive analytics, Online Analytical Processing (OLAP), and data mining tools. The OLAP and data mining tools are needed to examine data from multiple perspectives, which will allow for the identification of emerging trends and cost savings. This allows MDHHS to answer complex questions by performing multi-dimensional analysis across data sets and programs and to drill up and down through successive layers of detail to uncover trends, relationships, and patterns for improved decision-making.
- Symmetry software will be used as part of an effort to improve utilization of administrative data for the purposes of quality of care monitoring, program reporting, risk assessment and coordination of care for beneficiaries, such as Healthy Michigan Plan, Medicaid, Children's Special Health Care Services and MI Health Link. The State will be able to more efficiently calculate and report quality of care measure rates for a wider selection of chronic and episodic conditions, as well as preventive activities (e.g., screenings) using evidence-based specifications produced and updated annually by national quality organizations. The State will also have the capability to use prospective analytics for the purposes of risk assessment.
- BI Query software is a business intelligence tool that allows non-technical users access to data through a graphical user interface and allows them to build adhoc queries with minimal IT assistance.
- General Tasks in this activity include:
 - Upgrade Business Objects, BI Query, and Symmetry to support future needs of MDHHS. Utilize advance features of tool sets to include additional trusted data sources.

3. Identify and Load Additional Data Sets on the Data Warehouse

- As new systems and data sources are developed that support the Medicaid Enterprise, they will be integrated with the data warehouse and existing MDHHS data. This data could be Medicaid-specific or could be non-Medicaid, but enhances the Medicaid program by increasing quality of care, improving outcomes, or reducing costs.
- The process to add these data sets includes: defining requirements, establishing a process to maintain history, developing load programs, establishing reconciliation processes with source systems, and integrating new data with existing data in the BI Query models.

4. Enhance Existing Data Loads in order to Stay Current with Corresponding changes to Source Systems, New Policies and Technologies

- As MDHHS rewrites source systems to align with new requirements and technology, the data warehouse will require corresponding enhancements in order to load and store new and updated data elements and provide query and reporting access to the data. Source system changes may be driven by federal or state initiatives. This activity also includes the development needed to update existing data warehouse load processes to include additional data for the Medicaid Enterprise, including adding source system data elements to an existing data warehouse load, even when that data was not newly added to the source system

5. Develop Web Applications to Support Medicaid Programs and Processes

- This activity will develop and enhance data warehouse web applications to streamline processes in support of Medicaid programs, automate workflows, provide integrated data delivery, and provide tracking and reporting of Medicaid beneficiaries and programs.
- Users of these web applications include, but are not limited to: MDHHS; Medicaid Health Plans; Prepaid Inpatient Health Plans (PIHPs); Community Mental Health organizations (CMHs); and Integrated Care Organizations (ICOs).

Examples of Specific Tasks include:

- Beneficiary Monitoring Program (BMP)
- Waiver Support Application (WSA)
- CareConnect360 (CC360)

6. Provide Management of Data Availability and Security

- This Activity includes implementation of enhanced security measures and access processes to support policies, technologies and audit requirements, including password rules and expiration timeframes, data encryption, and enhanced Roles and Profiles. This work will leverage new capabilities that become available through upgrades to existing software.

7. Provide Additional Data Integration across Program Areas

- This activity will develop and enhance solutions to integrate MDHHS data across program areas, data sources, and other departments and agencies to bring together cross-populations, and therefore allow improved tracking and analysis of MDHHS beneficiaries.
- This activity also provides analysis to allow assessment of events that may be contributing to successes or shortfalls in programs, interventions, and outcomes which will allow MDHHS to collaborate with other departments and agencies to improve outcomes.
- Examples of data integration efforts include longitudinal analysis/reporting of data across programs, creation of views to provide access to data across program areas, and developing data exchanges between the data warehouse and Michigan Department of Health and Human Services (MDHHS) partner organizations such as health plans and the Michigan Health Information Network (MiHIN). This also enhances architecture to align with MITA.

8. Provide onsite analytic development for the various program models, and analytic tools

- This activity will support a data warehouse helpdesk which provides assistance and guidance with data questions and analytics.

9. Enhance the Data Warehouse as a Result of CHAMPS and Bridges in order to Stay Current with Corresponding Changes to Source Systems, New Policies and Technologies

- This activity will implement changes to database structures, models, views, reconciliation processes, and Extract, Transform, Load (ETL) processes for both Staging and Production tables, as a result of changes to the source systems. These changes will include derived fields and any work related to corresponding software upgrades. For example, the Community Health Automated Medicaid Processing System (CHAMPS) subsystems include:
 - Provider (PE)
 - Eligibility and Enrollment (EE)
 - Contracts Management (CM)
 - Claims and Encounters (CE)
 - Reference (BA)
 - Lookup Tables (LU)
 - Financials (OFIN)
 - Third Party Liability (TPL)
 - Master (MT)
 - Prior Authorization (PA)
 - Medicaid Electronic Health Record Incentive (EHR)
- The activity will also develop and enhance processes to extract data from the data warehouse to be used for on-going production data loads to source systems. These data are used for purposes such as adjudicating claims in CHAMPS, determining eligibility in Bridges, such as extracts for Waiver enrollments, mental health eligibility, and trusted data sources for eligibility determination.
- Finally, the activity will implement changes to the Eligible Months data mart as a result of changes to source systems.

10. Enhance the Program Integrity Process

- Healthcare fraud significantly impacts the Medicaid program by using up valuable public funds needed to help vulnerable children and adults access health care. This activity will support the enhancement of the Program Integrity (PI) process through the design, development, and implementation of data warehouse solutions to support identification and investigation of fraud related to Medicaid and other MDHHS programs.

11. Intentionally left blank

12. Develop Web-Based Security Application

- The Database Security Application (DSA) foundation provides an automated web-based workflow and corresponding database for requesting and approving access to MDHHS systems such as data warehouse, FileNet, and Community Health Automated Medicaid Processing System (CHAMPS).
- This Activity includes:
 - Enhancements to technical framework
 - Creation of new “forms” within DSA for requesting access to MDHHS systems
 - Enhancements and additional functionality to existing forms
 - Development of training modules, both web-based and training manuals
 - Development of other necessary end user training materials

13. Develop and Configure the Master Person Index (MPI)

- IBM InfoSphere will be used to build the Master Person Index (MPI) and the Provider Index (PI). IBM InfoSphere accepts incoming data and uses logic, rules, and algorithms to compare the incoming data with existing records. The comparisons produce scores that indicate which records are likely to represent the same entity. IBM InfoSphere then links incoming and existing records that meet or exceed a specified threshold.
- IBM InfoSphere will be configured for multiple indices: beneficiaries, providers, health plans, and other health care entities.
- All tasks included in this activity include development and implementation of corresponding governance structure and supporting documentation.
- There are two primary methods for Data Sources to interface with MPI:
 - Batch process through the Enterprise Data Warehouse (EDW) – facilitates secure data sharing with minimal need for sending data between parties (data can be shared via service account access)
 - Real-time through the Health Services Enterprise Service Bus (ESB) – allows users to control their interactions with MPI and provides real-time sharing opportunities
- Adding a new Data Source to MPI includes the following activities:
 - Establish appropriate Data Sharing Agreements
 - Establish connections to the ESB or EDW and MPI
 - Configure source in MPI
 - Initial data load
 - Initial data analytics
 - Onboard Source Data Stewards and Owners to MIDSP

14. Enhance DW Operability and Access

- Analysis and development to optimize query and system performance will reduce DW usage costs by improving efficiency and reducing storage space. Analysis of CHAMPS DW usage will be performed to determine areas for improvement (e.g., rewrite queries, add statistics, and add/remove indexes to align with user access to data, compress databases). Solutions will then be identified, developed and implemented to address the identified areas for improvement.
- Also includes patch releases as needed to provide functionality needed by MDHHS and to stay current with third party vendor supported hardware and software including Teradata.

15. Develop Queries and Extracts to Support the Medicaid Enterprise

- The data warehouse is a critical component of Medicaid and other MDHHS programs. It is the primary source of information for business operations, actuarial functions and day-to-day queries.
- It is also the primary source of information for audits, research, lawsuits, Freedom of Information Act (FOIA) requests, and other similar requests for data. These requests typically require response within a short timeframe and require knowledge of both Medicaid and the data warehouse.
- Tasks include developing and updating data extracts.

16. <Intentionally blank>**17. Management of the MDHHS Data Warehouse/Decision Support Effort**

- Provides strategic planning and management at various levels, from a task level through Activity levels and as part of a departmental-level oversight effort.

18. Design, Development, and Installation of the MDHHS Business Glossary and Metadata Management Roadmap – if prioritized in FY22

Human Services Data Warehouse

Contractors will provide support on a time and materials basis for the following activities.

1. Renovation and replacement of Child Welfare application (MiSACWIS)
2. Federal and State Reporting, including court ordered reporting
3. Run production reporting on the data warehouse
4. Provide updated analytic, reporting, data mining, and web-based analytic tools to enhance the analytic capability of the staff
5. Identify and load additional data sets on the data warehouse
6. Changes to existing data loads in order to stay current with enhancements to source systems: MICIS data sets
7. Provide onsite analytic development for the various program models, and analytic tools
8. Enhance the data warehouse as a result of BRIDGES, Child Support, Child Welfare changes.
9. Develop Queries and Reports to support BRIDGES, Child Support, Child Welfare Programs
10. Design, Development, and Installation of the MDHHS Business Glossary and Metadata Management Roadmap

IT Classifications/Skills Set and Tasks:

The requirement is that the individual must possess the skills, knowledge, and experience required to perform the duties effectively and efficiently at the level specified in the work request. Below are standard role descriptions, each with an example list of responsibilities. All listed responsibilities may not be required for a specific position.

- **Data Warehouse Project Manager**

Data warehouse project manager manages the integration and/or development and delivery of very large and complex deliverables directly to the customer. This position provides the primary interface between the Contractor, the State and third-party providers.

- Establishes and manages the project plan, according to SUITE standards, including the development schedule, resource requirements and integration efforts of third-party products. Periodically reports progress to State management.
- Motivates and directs project team; sets goals, objectives and priorities; assigns and reviews work.
- Acts as the primary interface with the DTMB on issues regarding the project deliverable. Makes sure customer reviews are held with the customer user community and obtains sign-off on status reports and requirements.
- Works with DTMB to ensure approved methods, processes and tools are consistently used.
- Is accountable for meeting project schedule and results as well as for the State customer satisfaction and quality of the deliverables.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.
 - Facilitate user groups to encourage self-support among end user and developers
 - Facilitate requirements sessions and discussions with end users/business owners to gather information needed to understand business needs

- o Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs. Assists DTMB and MDHHS with documentation for managing the data warehouse such as presentations, reports and Advanced Planning Documentation (APD) to be submitted to CMS for funding.

Required Experience

- Bachelor's degree or equivalent technical study
- 5+ Years Project Manager or Team Lead Experience.
- 5+ Years Data Warehouse Business Intelligence / Experience.
- 3+ Years Teradata DW Experience.
- The following knowledge/experience may also be required for some roles:
 - o SQL Assistant experience
 - o Business Objects Training experience
 - o Business Objects report development
 - o Medicaid, Child Welfare, Public Assistance Eligibility & Benefit Determination, or Families & Children (US Department of Health & Human Services) knowledge.
 - o Teradata Utilities experience
 - o SUITE Methodology experience
- **Data Warehouse Architect**
 Data warehouse architect designs total solutions involving multiple systems for large organizations. Participates/leads in the construction of models and pilot programs with senior level managers.
 - Conducts model and pilot programs to test proposals or develop solutions to problems. Develops measurement criteria to evaluate programs and projects and develops or reviews estimates on technical aspects of projects.
 - Responsible for data warehouse database design and providing technical direction to modelers, data analysts, ETL developers, and database administrators.
 - Develops design proposals to meet DTMB and MDHHS needs
 - Approves integrated systems design proposals for technical content.
 - Monitors the implementation for technical correctness so that MDHHS needs are met.
 - Identifies, analyzes and evaluates alternative design solutions.

Required Experience

- Bachelor's degree or equivalent technical study
- 6+ Years Data Warehouse Architect and Modeling Experience.
- Teradata Version 15/16 (or higher) Experience.
- Teradata Utilities Experience.
- 2+ Years Data Warehouse Administrator Experience.
- **Data Warehouse Business Objects Architect**
 Is responsible for the availability, security, and usefulness of the MDHHS BO environment. This may include tasks such as:
 - Verification of all BO user's login accessing MDHHS BO universes.
 - Monitoring the MDHHS BO environment assuring that it is running with optimal performance.
 - Testing the availability of all universe connections to respective DW databases.
 - Verifying user activities and BO module activities from Web Intelligence Console.
 - Troubleshooting any issues with reports (Technical support to End Users).
 - Regular BO repository maintenance like Cleaning Orphaned Connection/Universe/Documents Scan / repair and compact to all repository errors and domain testing.
 - Running integrity checks on all MDHHS BO universes to ensure through parsing (Syntax/Sematic checking).
 - New BO universe development and modification.
 - Data mapping to new tables in the universes.

- BO resource allocation like linking universe and documents to users and user groups.
- Meeting with BO users to discuss supporting issues.
- Help with end user training.
- Is expected to be able to work with agency requestors to define and develop new reports, and provide training and technical support to both DTMB developers and end user query developers. Their report development tasks may include:
 - Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - Develop and present training classes for end user developers to help learn how to most effectively use the DW platform and the BI tools available to them to support their own data needs where possible.
 - Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the DW.
 - Provide one-on-one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- Bachelor's degree or equivalent technical study
- 10+ Years BO Administrator experience
- 5+ Years Business Objects Universe Development experience
- BO Version 4.2 SP4 or higher
- BO WEBi and InfoView Training experience
- 5+ Years BO Report Developer
- Crystal Reports experience
- **Data Warehouse Database Administrator**

DW database administrator (DBA) is responsible for the availability, safety and usefulness of the MDHHS data warehouse databases.

 - Working in conjunction with system administrators, perform server configuration to ensure that the entire database system is capable of providing the services needed.
 - Performance monitoring to identify bottlenecks and places where throughput can be improved.
 - Security administration to ensure that the database cannot be accessed by unauthorized parties or damaged by anyone.
 - Configure access to the data warehouse and communication between the warehouse and other servers.
 - Physical database design translates the logical database design to work optimally for the specific database environment.
 - Working with State DW developers and Compliance staff to establish standards and guidelines for access to MDHHS data warehouse databases.
 - Collaborate with DTMB to provide data/database integrity for software installation and updates; and backup and restore, including:
 - o Software installation and database management system upgrades
 - o Software upgrades so that the database is in compliance with critical security patches, or, software upgrades deemed necessary by the State.
 - Work with State DW developers and clients to optimize their queries.

Required Experience

- Bachelor's degree or equivalent technical study
- 4+ Teradata Database Administrator Experience.
- 2+ Teradata Version 15/16 (or higher) Experience.
- Teradata Utilities Experience.
- Teradata Manager Experience.
- SQL Assistant Experience.
- Linux/Unix Experience.
- Oracle Experience.

- **Data Warehouse Developer Senior/Junior)**

Data warehouse developers perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other MDHHS applications. In addition, they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Interact with Business Users and Subject-Matter Experts from the Michigan Department of Health and Human Services (MDHHS) to gather and document technical requirements and processes.
- Identify the key metrics that are to be reported from the MDHHS Data Warehouse using Business Intelligence (BI) tools.
- Create mapping and migration analysis documents.
- Develop the ETL (Extract, Transform and Load) scripts using Teradata Utilities (TPT, Bteq, FExports, MLOAD, Stored procedures and Data Marts) for Loading the Data from Source system to Target system by applying business rules as per the requirements
- Analyze MDHHS data warehouse needs and then design, test, and develop SQL Code/Reports software to meet those requirements
- Collaborate with Teradata DBAs, Data Modelers, Business Analysts and Business users to design and develop Teradata SQL code and Business objects reports.
- Design and develop data marts using Teradata SQL to be used in BI reporting to meet MDHHS needs.
- Design & develop the batch flow using Unix Shell Scripts to load data from Operational System to the MDHHS Data Warehouse.
- Perform Unit Testing and provide support during System Testing and User Acceptance Testing. Resolve the issues/defects identified during Testing.
- Performance tuning and optimization of ETL (Extract, Transform and Load).
- Design, develop, implement and maintain new reporting functionality and analytic applications across multiple business units using various business intelligence tools.
- Identify, design and develop the strategic reports that are to be reported from the MDHHS Data Warehouse using Business Intelligence (BI) tool.
- Create data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- SQL development
- Train developers and end-users in how best to design queries for a specific database.

DW Developer – Senior: Required Experience

- Bachelor's degree or equivalent technical study
- 6+ Years SQL Development Experience.
- Teradata Version 15/16 (or higher) Experience
- ETL Development using Teradata Utilities and Linux Experience.
- 6 Years Teradata Utilities experience
- 3 Years SQL and Performance Tuning
- Excellent written and oral communication skills
- Mentoring co-workers
- The following knowledge/experience may also be required for some roles:
 - o 3 Years SQL Assistant experience
 - o 3 Years Unix Shell Scripting experience
 - o Business Analyst experience

Data Warehouse Developer Junior

Data warehouse developers perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other MDHHS applications. In addition, they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Creating data warehouse-based applications including reporting, dashboards and other information analysis and delivery systems.
- Perform extract, transform, and load activities to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.

- Work with developers and end user query developers to design and improve database queries.
- DW Developer - Junior: Required Experience
- 2+ Years SQL Development Experience.
- Teradata Utilities Experience.
- SQL Assistant Experience.
- **Data Warehouse Designer/Modeler**

Data warehouse designer is responsible for the database modeling and design for an efficient data warehouse objects structure. This involves defining the tables, keys and relationships that will allow an application to retrieve and update data correctly and efficiently.

 - Will work with State and contract staff to ensure that the MDHHS DW models support the data, reporting, and analytic needs required for MDHHS.
 - Working with end users and developers to understand the data needs of MDHHS clients.
 - Documenting the data warehouse data involves including definitions, constraints and access needs.
 - Creating and maintaining data warehouse logical designs, including Entity Relationship diagrams, which illustrate what data will be stored, how it is organized, how it can be retrieved (keys) and how it relates to other data in the database.
 - Creating and maintaining data warehouse data definition language (DDL) that can be used to create and update the database.
 - Working with Data Warehouse DBA and ETL developers, modify the logical design to create a physical design most suited to the database environment and the applications that will use it.
 - Work with Data Warehouse ETL developers and DBA to create and maintain database design standards.
 - Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their report development related tasks may include:
 - Working with end user requestors to understand their data needs and create and implement solutions for those needs.
 - Develop and present training classes for end user developers to help them learn how to most effectively use the DW platform and the BI tools available to them to support their own data needs, where possible.
 - Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solutions using the DW.
 - Provide one-on-one support for developers and end users to assist them in accomplishing their data reporting needs.
 - Perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other Agency applications. Their development related activities may include tasks such as:
 - Creating data warehouse-based applications including reporting, dashboards and other information analysis and delivery systems.
 - Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
 - SQL development.
 - Work with developers and end user query developers to design and improve database queries.
 - Train developers in how best to design queries for a specific database.

Required Experience

- Bachelor's degree or equivalent technical study
- 5+ Years Data Warehouse Modeling Experience.
- 5+ Years of SQL Development.
- Data Warehouse Architect Experience.
- **Data Warehouse Business Intelligence Report Developer**

Data Warehouse Business Intelligence Report Developer is expected to be able to work with agency requestors to define and develop new reports, and provide training and technical support to both DTMB

developers and end user query developers.

- Working with end user requestors to understand their data needs and create and implement solutions to those needs.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
- Develop and present training classes for DTMB developers to better understand how to use the data warehouse development tools to create and implement reporting solution using the data warehouse.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 5+ Years of Business Objects Report Development Experience.
- 5+ Years of SQL Development.
- Business Analyst Experience may be required.
- Excellent written and oral communication skills

- **Data Warehouse Business Intelligence Analyst (Senior/Junior)**

Data warehouse business intelligence/analyst works with end users to provide information in a number of different ways.

- Running JAD sessions to understand and collect business requirements, develop use cases and determine what data is needed and how it is likely to be used.
- Helping translate business requirements into technical specifications, e.g., ETL and report requirements.
- Analyzing data requests from various customers to define/determine requirements for modifications and enhancements to existing data warehouse/business intelligence systems.
- Creating ad-hoc queries to answer specific user questions.
- Helping design and specify data warehouse business solutions.
- Creating data warehouse-based applications including reporting, dashboards and other information analysis and delivery systems.
- Supporting end user to enable them to create their own queries and reports as needed.
- Identify data problems and work with developers to correct them.
- Working with developers and customers to assist in establishing test plans and data; validation of program/reporting functions; and preparation of necessary forms and documentation for implementation.
- Configuring data models and structures, e.g., business intelligence rules, and applications settings according to design specifications and departmental standards.
- Analyzing and recommending process improvements.
- Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
- Organize and run user groups to encourage self-support among end user and DTMB query and other data warehouse application developers.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
 - o Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - o Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
 - o Develop and present training classes for DTMB developers to better understand how to use the data warehouse development tools to create and implement reporting solution using the data warehouse.
 - o Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

DW BI Analyst – Senior: Required Experience

- Bachelor's degree or equivalent technical study
- 6+ Years Project Lead / Data Warehouse BI Analyst Experience.
- Training Experience.
- SQL Assistant Experience.
- Medicaid, child welfare or other specialty experience may be desired.

DW BI Analyst – Junior: Required Experience

- 2+ Years Project Lead / Data Warehouse BI Analyst Experience.
- Medicaid, child welfare or other specialty experience may be desired.

- **Data Warehouse Help Desk Analyst**

DW help desk staff provide first line support for end users and developers.

- Manages MDHHS Data Warehouse mailbox.
- Assesses user identified issues and provides guidance for resolution.
- Directs unresolved problems and reports to appropriate staff, if necessary.
- Tracks and analyzes problem occurrences and resolutions.
- Conducts data warehouse user group training.
- Develops training materials.
- Assists with query/report development.
- Provides user assistance with data warehouse tool(s), model/database, business knowledge and recommendations for efficiency and solutions to meet user business needs.

Required Experience

- 3+ Years of Data Warehouse Help Desk Analyst Experience.
- Experience in supporting the end users in accessing the data warehouse and effectively utilize the desktop tools.

- **Data Warehouse Web Developer (Senior/Junior)**

A DW Web Developer is responsible for designing and developing web-based applications that interact with and utilize the data warehouse to provide MDHHS users with highly interactive, easy to use web-based data warehouse applications.

- Learning the customer's business process and working with others to define customer requirements specifications by participating in meetings, analysis and documentation preparation
- Defining and developing applications that rely on unique web-based technology and tools, and that will conform to standards defined by DTMB for user interface and usage of the data warehouse.
- Defining the web application user interface, business rules, database access and data warehouse access, and determining any data sources that need to be imported into the data warehouse for web application operation.
- Producing technical specification documents and designs (e.g., process flows, screen mock-ups, component logic) to review the web application with the user, and conducting JAD sessions to revise and finalize technical specifications.
- Prototyping of web application pages for user review and approval.
- Producing accurate and complete data mapping documents
- Performing user acceptance testing with users and DTMB to confirm that new web applications perform per specifications, and making adjustments to the web application as required
- Helping maintain a development and staging environment for the development and testing of enhancements and updates to the web application.
- Problem-solving, troubleshooting and identifying/executing resolution actions
- Assisting with creation of help documents and procedures manuals
- Assisting with creation of presentation materials for technical review meetings, approval sessions and application demonstrations

DW Web Developer – Senior: Required Experience

- Bachelor's degree or equivalent technical study
- 5+ Years of Data Warehouse Web Developer Experience.
- Web development may include: HTML, JavaScript; JQuery; Javascript libraries and plugins; CSS Libraries like Bootstrap; Ajax; ASP.NET with Webforms and Model View Controller (MVC); VisualStudio; SQL Server and the development and maintenance of relational databases integrated with Visual Studio web applications; RESTful services; Web APIs; Crystal Reports; integration to SQL Server or Teradata RDBMS; Telerik Control Toolkit; web app interface with LDAP, Microsoft SharePoint, Business Objects and FileNet; Internet Information Services (IIS) configuration and management; networking using TCP/IP; tools for web prototyping like Protoshare; version control software (Subversion, GitHub); unit testing tools; agile development methodology.
- Medicaid, child welfare or other specialty may be desired

DW Web Developer – Junior: Required Experience

- 2+ years of data warehouse web developer experience
- Experience with a subset of the technologies listed above for DW Web Developer - Senior

- **Subject Matter Expert (SME)**

A Subject Matter Expert (SME) will be responsible for providing specialized, in-depth knowledge of a business area(s) such as Medicaid, Master Person Index/Provider Index, Pharmacy, ICD-10, HEDIS, Metadata Management, and technology solutions.

- Leading or actively participating in workgroups with the need for specialized knowledge.
- Providing guidance on how their area of expertise can resolve an organizational need, and actively participates in all phases of a project/initiative by sharing their knowledge, expertise and ideas.
- Defining technology and business solutions based on thorough understanding of business processes and policies.
- Reviewing, helping re-engineer, or creating new processes and policies.
- Evaluating and defining technology requirements and solutions.
- Defining business needs, and identifying and recommending the most appropriate solutions.
- Providing documentation such as forms, manuals, correspondence, and procedures
- Understanding, articulating, and implementing best practices related to their area of expertise.
- In some cases, will work with end users to provide information in many ways. This may include tasks such as:
 - o Running Joint Application Design (JAD) sessions to understand what data is needed and how it is likely to be used.
 - o Creating ad-hoc queries to answer specific user questions.
 - o Program design and specification.
 - o Creating DW based applications including reporting, dashboards and other information analysis and delivery systems.
 - o Supporting end user to enable them to create their own queries and reports as needed.
 - o Identify data problems and work with developers to correct them.
 - o Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
 - o Organize and run user groups to encourage self-support among end user and DTMB query and other BI application developers
- In some cases, the SME will also be expected to be able to work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
 - o Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - o Develop and present training classes for end user developers to help learn how to most effectively use the DW platform and the BI tools available to them to support their own data needs where possible.
 - o Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the DW.
 - o Provide one-on-one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- Experience requirements will vary depending on area of expertise being requested. Current SMEs must have expertise in Medicaid, technology solutions, MPI/PI, metadata management, population health and/or business objects dashboards.

DELIVERABLES:

The deliverables and tasks agreed to in the resulting Contract shall comply with the following approval process:

APPROVAL OF DELIVERABLES, IN GENERAL:

(a) All Deliverables (Physical Deliverables, Written Deliverables, and Service Deliverables) require formal written approval by the State, in accordance with the following procedures. Formal approval by the State requires that the Deliverable be confirmed in writing by the State to meet its specifications, which will include the successful completion of Testing, to be led by the State with the support and assistance of Contractor. The parties acknowledge that the approval process set forth herein will be facilitated by ongoing consultation between the parties, visibility of interim and intermediate Deliverables and collaboration on key decisions.

(b) The State's obligation to comply with any State Review Period is conditioned on the timely delivery of Deliverables being reviewed.

(c) Prior to commencement of its review or testing of a Deliverable, the State may inspect the Deliverable to confirm that all components of the Deliverable have been delivered without material deficiencies. If the State determines that the Deliverable has material deficiencies, the State may refuse delivery of the Deliverable without performing any further inspection or testing of the Deliverable. Otherwise, the review period will be deemed to have started on the day the State and Contractor receive the Deliverable and agree that the Deliverable is ready for use and, where applicable, Contractor has provided certification to that effect.

(d) The State will approve in writing a Deliverable upon confirming that it conforms to and, performs in accordance with, its specifications without material deficiency. The State may, but shall not be required to, conditionally approve in writing a Deliverable that contains material deficiencies if the State elects to permit Contractor to rectify them post-approval. In any case, Contractor will be responsible for working diligently to correct within a reasonable time at Contractor's expense all deficiencies in the Deliverable that remain outstanding at the time of State approval.

(e) If, after three (3) opportunities (the original and two repeat efforts), Contractor is unable to correct all deficiencies preventing Final Acceptance of a Deliverable, the State may: (i) demand that Contractor cure the failure and give Contractor additional time to cure the failure at the sole expense of Contractor; or (ii) keep any resulting Contract(s) in force and do, either itself or through other parties, whatever Contractor has failed to do, in which event Contractor shall bear any excess expenditure incurred by the State in so doing beyond the Contract(s) price for such Deliverable and will pay the State an additional sum equal to ten percent (10%) of such excess expenditure to cover the State's general expenses provided the State can furnish proof of such general expenses; or (iii) terminate the particular Statement of Work for default, either in whole or in part by notice to Contractor provided Contractor is unable to cure such breach. Notwithstanding the foregoing, the State shall not use, as a basis for exercising its termination rights under this Section, deficiencies discovered in a repeat State Review Period that could reasonably have been discovered during a prior State Review Period.

(f) The State, at any time and in its reasonable discretion, may halt the testing or approval process if such process reveals deficiencies in or problems with a Deliverable in a sufficient quantity or of a sufficient severity as to make the continuation of such process unproductive or unworkable. In such case, the State may return the applicable Deliverable to Contractor for correction and re-delivery prior to resuming the testing or approval process.

PROCESS FOR APPROVAL WRITTEN DELIVERABLES:

The State Review Period for Written Deliverables will be the number of days set forth in the applicable Statement of Work/Purchase Order following delivery of the final version of the Deliverable (failing which the State Review Period, by default, shall be five (5) Business Days for Written Deliverables of one hundred (100) pages or less and ten (10) Business Days for Written Deliverables of more than one hundred (100) pages). The duration of the State Review Periods will be doubled if the State has not had an opportunity to review an interim draft of the Written Deliverable prior to its submission to the State. The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor

will correct the described deficiencies and within five (5) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF SERVICE DELIVERABLES:

The State Review Period for approval of Service Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) Business Days for a Service Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF PHYSICAL DELIVERABLES:

The State Review Period for approval of Physical Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) continuous Business Days for a Physical Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

ACCEPTANCE CRITERIA:

PROJECT CONTROL AND REPORTS:

Contractor must submit a monthly progress report to DTMB Program Manager throughout the life of this project. The report may be submitted with the billing invoice. Each monthly progress report must contain the following information:

- **Hours:** Indicate the number of hours expended during the past month, and the cumulative total to date for the project.
- **Tasks accomplished:** Indicate what projects have been worked on, and what was completed during the current reporting period.

AGENCY RESPONSIBILITIES:

- The State may terminate for convenience the services of any individual Vendor supplied staff with two weeks' notice.
- Provide access to State networks, servers, software license (as appropriate), etc. needed for Contractor to perform tasks required for this agreement
- For all work performed at State owned or leased buildings:
 - Provide contractor staff access to telephone and copying equipment
 - Provide contractor staff computer hardware and software, unless it is mutually deemed unnecessary
- The State's responsibilities are listed on pages 2-4

LOCATION OF WHERE THE WORK IS TO BE PERFORMED:

All Staff Augmentation services described in this Work Request will continue to be performed at locations previously agreed upon between the DTMB Project Manager and Vendor until altered through a Contract Change Notice.

The work for all Staff Augmentation services described in this Work Request is to be performed, completed, and managed in State owned or leased buildings or approved remote work locations, such as a Vendor location or work from home, with the expectation that personnel will be available, on hand and able to complete emergency tasks. DTMB does allow telecommuting/working remotely. This is determined on an individual basis and is at DTMB Program Manager discretion in accordance with DTMB Policy. In addition, onsite support may be needed and will be identified at such time.

EXPECTED CONTRACTOR WORK HOURS AND CONDITIONS:

Contractor must provide services during normal working hours (Monday through Friday, 7:00 a.m. to 6:00 p.m. ET.) and possible night and weekend hours depending on position and project requirements. 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. Contractor's staff working at State offices shall observe the same standard holidays as State employees.

The State does not compensate for holiday pay.

No overtime will be permitted, i.e., Contractor will not be paid any different hourly rate if the number of hours exceeds forty (40) in any given week.

SPECIFIC AGENCY STANDARDS:

- Contractor will provide the State with all process, standards, project, and technical documentation they utilize to meet MDHHS business requests. This includes documentation for closed projects, maintenance documentation, and project status/tracking information.
- Contractor will provide all code, scripts, and technical work completed or utilized on behalf of the State of Michigan in a timely fashion meeting DTMB timelines.
- Contractor staff will be subject to skills assessments at the discretion of the State.
- Contractor's staff providing Staff Augmentation/State managed services may be utilized across programs within the MDHHS to support Data Warehouse Business Intelligence projects as needed, at the discretion of the DTMB Program Manager. Contractor movements from Contractor managed to State managed will be documented through a Contract Change Notice.
- Contractor will cross-train with SOM staff to provide knowledge transfer and transition of work from Contractor staff to State staff.
- Contractor will follow DTMB guidelines and practices for project completion, SUITE documentation, technical documentation, and any other work performed on behalf of the SOM.
- Contractor staff will utilize the portfolio management tool, Clarity.
- Contractor staff will be subject to SOM/DTMB IT policies, procedures, and standards.

RIGHT TO OWNERSHIP:

State intends to own the Software at the end of the Contract

- Ownership of Work Product by State. All Deliverables shall be owned by the State and shall be considered works made for hire by the Contractor for the State. The State shall own all United States and international copyrights, trademarks, patents or other proprietary rights in the Deliverables.

- **Vesting of Rights.** The Contractor agrees to assign and upon creation of each Deliverable automatically assigns, to the State ownership of all United States and international copyrights, trademarks, patents or other proprietary rights in each and every Deliverable, whether or not registered by the Contractor, insofar as any such Deliverable, by operation of law, may not be considered work made for hire by the Contractor for the State. From time to time upon State's request, the Contractor and/or its personnel shall confirm such assignment by execution and delivery of such assignments, confirmations of assignment, or other written instruments as the State may request. The State shall have the right to obtain and hold in its own name all copyright, trademark, and patent registrations and other evidence of rights that may be available for Deliverables.
- **STATE MUST RECEIVE FAIR MARKET VALUE FOR THE LICENSE** – (This must be reviewed and negotiated by the DTMB Procurement Buyer)

PAYMENT SCHEDULE:

Payment will be made on a time and materials basis (hourly based) and will be paid monthly. The State will pay Contractor upon receipt of properly completed invoices which shall be submitted to the billing address on the State issued purchase order not more often than monthly. DTMB's Accounts Payable area will coordinate obtaining the DTMB Program Manager approvals. All invoices should reflect the actual work hours completed by payment date, and must be approved by the DTMB Program Manager prior to payment. The invoices shall describe and document to the State's satisfaction a description of the work performed, the progress of the project, and fees.

All invoices must contain the State of Michigan issued purchase order number.

Payment shall be considered timely if made by the State within forty-five (45) days after receipt of properly completed invoices.

EXPENSES:

The State will NOT pay for any travel time or travel expenses, including hotel, mileage, meals, parking, etc.

PRICING SUMMARY

Pricing for the Extension Period is set forth in Appendix A below.

MODIFICATIONS

For an agreement of this size, changes to staffing (resources and/or subcontracting companies) may normally occur. Contractor will provide the State a staffing letter specifying any such changes and the State will provide written approval for acceptance. Contractor will also work with the State to complete the State's approval process for new subcontracting companies, as needed.

Other types of changes will be implemented, as needed, via (i) acceptance letters; or (ii) a simple amendment (e.g., typically 1- or 2-pages) that describes the change and requires State's written approval for acceptance.

ADDITIONAL TIME & MATERIALS LABOR RATES FOR PROFESSIONAL SERVICES:

To the extent the parties agree that certain specific services must be provided on a time and materials basis, such services must be provided within the not to exceed hourly rates as revised in Change Notice 33, Revised Cost Table - Attachment A, included here as Appendix B for reference. Future amendments to this Work Request may utilize this rate structure, as agreed between the Contractor and State.

Additionally, the Contractor may utilize the rates in order to provide the State with a not to exceed time and materials price. Prices quoted herein will be used for change, addition, and / or deletion of work associated with this Work Request. The Estimated Hours is provided below as an estimate only and is not meant to preclude or limit the State from requesting a resource/staffing mix for future projects that exceeds or reduces the hours estimate for a specific Staffing Category.

Appendix A

Table 1 - part 1

Assigned Resource	Position Ref	Position	Contract Year 12/21/21 - 12/20/22			Contract Year 12/21/22 - 12/20/23		
			Rate/ Hour	Est. Max Hours	Estimated Dollars	Rate/ Hour	Est. Max Hours	Estimated Dollars
MDHHS Health Services								
BAUMAN, AMY	A01	Data Warehouse Project Manager	134	1984	265,856	134	1984	265,856
BLAIR, CORINNE	A02	Subject Matter Expert MPI	235	521	122,435	235	521	122,435
BOAK, KATHY	A03	Data Warehouse Developer - Senior	126	1984	249,984	126	1984	249,984
BONAM, SUDHAKAR	A04	Data Warehouse Developer - Senior	126	1984	249,984	126	1984	249,984
BRAR, BIRINDER	A05	Data Warehouse BI Analyst - Senior	126	1984	249,984	126	1984	249,984
BUSH, STEPHEN	A06	Data Warehouse Developer - Senior	126	1984	249,984	126	1984	249,984
CAREY, TIM	A07	Data Warehouse Project Manager	134	1984	265,856	134	1984	265,856
CARTER, TYSON	A08	Subject Matter Expert MPI	235	521	122,435	235	521	122,435
CHERUKURI, SAI	A09	Data Warehouse Web Developer - Senior	108	1984	214,272	108	1984	214,272
CHIKYALA, DHEERAJ	A10	Data Warehouse Developer - Senior	126	1984	249,984	126	1984	249,984
CHITIBOMMA, RAVI	A11	Data Warehouse Developer - Senior	126	1984	249,984	126	1984	249,984
CHRISTIANSEN, JEREMY	A13	Data Warehouse Developer - Senior	126	992	124,992	126	992	124,992
COBURN, DEB / TBD	A14	Data Warehouse BI Analyst - Senior	126	1984	249,984	126	1984	249,984
CONNOR, RONALD	A15	Subject Matter Expert MPI	235	521	122,435	235	521	122,435
FOTH, CASEY	A18	Subject Matter Expert MPI	235	521	122,435	235	521	122,435
FRIAR, BETH	A19	Data Warehouse BI Analyst - Senior	126	1984	249,984	126	1984	249,984
GAJBHIMKAR, SRIKANTH	A20	Data Warehouse Web Developer - Senior	108	1984	214,272	108	1984	214,272
GEORGE, AMY	A21	Data Warehouse Project Manager	134	992	132,928	134	992	132,928
GREGG, BILL	A22	Data Warehouse Developer - Senior	126	1984	249,984	126	1984	249,984
HOMER, DANIEL	A24	Data Warehouse Developer - Senior	126	1984	249,984	126	1984	249,984
HULL, BARRY	A25	Data Warehouse Architect	130	1984	257,920	130	1984	257,920
IFTODY, SEAN	A26	Subject Matter Expert MPI	235	521	122,435	235	521	122,435
JADOON, FAHD	A27	Data Warehouse BI Analyst - Senior	126	1984	249,984	126	1984	249,984
JIWATODE, YASHASWI	A12	Data Warehouse Web Developer - Senior	108	1984	214,272	108	1984	214,272
KAMINSKE, CHRISTIAN	A28	Data Warehouse BI Analyst - Junior	126	1984	249,984	126	1984	249,984
KOCHENDERFER, KELLIE	A17	Data Warehouse BI Analyst - Senior	126	1984	249,984	126	1984	249,984
KREINER, META	A29	Subject Matter Expert Population Health	113	992	112,096	113	992	112,096
KRISHNAMOORTHY, RAJA	A30	Subject Matter Expert MPI	235	521	122,435	235	521	122,435
KRISTJANSON, KORBIN	A31	Subject Matter Expert MPI	235	521	122,435	235	521	122,435
LECLERC, NICK	A32	Subject Matter Expert MPI	235	521	122,435	235	521	122,435
LOGANATHAN, RAMESH	A33	Data Warehouse Database Administrator	126	1984	249,984	126	1984	249,984
MCNEIL, JEANNE	A34	Data Warehouse Project Manager	148	1686	249,528	148	1686	249,528
NADELLA, MALATHI	A35	Data Warehouse BI Analyst - Junior	126	1984	249,984	126	1984	249,984
OLSON, LAURA	A36	Data Warehouse Help Desk Analyst	126	1984	249,984	126	1984	249,984
RITTER-IRELAND, JENNY	A37	Data Warehouse BI Analyst - Senior	126	1984	249,984	126	1984	249,984
SABIR, MOHAMMAD	A38	Data Warehouse Developer - Senior	126	1984	249,984	126	1984	249,984
SHAH, AMI	A40	Data Warehouse Web Developer - Senior	108	1984	214,272	108	1984	214,272
SHAH, KUNAL	A41	Data Warehouse Architect	130	1984	257,920	130	1984	257,920
SINGH, VIDHIKA	A42	Subject Matter Expert MPI	235	521	122,435	235	521	122,435
SNYDER, JOHN	A43	Data Warehouse BI Analyst - Senior	126	1984	249,984	126	1984	249,984
SORRELLS, ANGEL	A44	Data Warehouse BI Analyst - Senior	126	1984	249,984	126	1984	249,984
SRIGIRI, HAVILAH	A45	Data Warehouse Web Developer - Senior	108	1984	214,272	108	1984	214,272
TANEJA, DINKAR	A54	Subject Matter Expert MPI	235	521	122,435	235	521	122,435
TANNEERU, VISHAL	A47	Data Warehouse BI Report Developer	108	1984	214,272	108	1984	214,272
TATE, JEFF	A48	Subject Matter Expert CHAMPS	167	1984	331,328	167	1984	331,328
THIRVEEDHI, PRASANTH	A39	Data Warehouse Web Developer - Senior	108	1984	214,272	108	1984	214,272
TRAN, VINCENT	A49	Subject Matter Expert MPI	235	521	122,435	235	521	122,435
TRIPATHI, VINAYAK / TBD	A50	Data Warehouse Developer - Senior	126	1984	249,984	126	1984	249,984
VAIDYA, SUMEET	A51	Subject Matter Expert MPI	235	521	122,435	235	521	122,435
VAN, KENTON DEREK	A52	Data Warehouse BI Analyst - Senior	126	600	75,600	126	600	75,600
WARNER, JENNIFER / TBD	A55	Data Warehouse BI Analyst - Senior	126	1984	249,984	126	1984	249,984
WITHERS, BETH	A53	Data Warehouse Designer/Modeler	126	1984	249,984	126	1984	249,984
Subtotals for HEALTH Services:				80,954	10,792,780		80,954	10,792,780

Appendix A (CONTINUED)

Table 1 - part 2

Assigned Resource	Position Ref	Position	Contract Year 12/21/21 - 12/20/22			Contract Year 12/21/22 - 12/20/23		
			Rate/ Hour	Est. Max Hours	Estimated Dollars	Rate/ Hour	Est. Max Hours	Estimated Dollars
MDHHS Human Services								
DAVIS, JIM / TBD	B02	Data Warehouse Developer - Senior ETL	126	1984	249,984	126	1984	249,984
GUNDA, RAKESH	B05	Data Warehouse Developer - Senior ETL	126	1984	249,984	126	1984	249,984
JOURDEN, MELISSA	B06	Subject Matter Expert Child Welfare	148	1984	293,632	148	1984	293,632
MAHADEVAN, MURALI	B08	Data Warehouse Business Objects Architect	130	1984	257,920	130	1984	257,920
MARTIN, NICHOLE	B10	Data Warehouse BI Analyst - Senior	126	1984	249,984	126	1984	249,984
MUDDULURU, SWAROOP	B11	Data Warehouse Developer - Senior ETL	126	1984	249,984	126	1984	249,984
NANDURI, SRIRAM	B12	Data Warehouse Database Administrator	126	1984	249,984	126	1984	249,984
Subtotals for HUMAN Services:				13,888	1,801,472		13,888	1,801,472
TOTALS:				94,842	12,594,252		94,842	12,594,252

Payment will be made on a Time and Materials basis. DTMB will pay Contractor upon receipt of properly completed invoice(s) which shall be submitted to the billing address on the State issued purchase order not more often than monthly. DTMB Accounts Payable area will coordinate obtaining Agency and DTMB Program Manager approvals. All invoices should reflect actual hours worked by Contractor, and must be approved by the Agency and DTMB Program Manager prior to payment.

The estimated yearly contract hours and dollars will not preclude the State from utilizing the hours and dollars on an actual basis in amounts that vary from the estimates.

Appendix B

The table below was provided in Change Notice 33 as Attachment A and is unchanged. It is included here only for reference and convenience purposes. It provides not to exceed rates.

Position Type	Not To Exceed Hourly Rate ¹
Data Warehouse Project Manager	\$168.00
Data Warehouse Architect	\$188.00
Data Warehouse Data Designer/Modeler	\$163.00
Data Warehouse Developer Senior/Junior	\$158.00
Data Warehouse Business Intelligence Analyst Senior/Junior	\$158.00
Data Warehouse Database Administrator	\$163.00
Data Warehouse Business Intelligence Report Developer	\$158.00
Data Warehouse Help Desk Analyst	\$145.00
Data Warehouse Web Developer	\$125.00
Subject Matter Expert	\$350.00
Advanced Analytics Software Consultant	\$275.00
Principal Consultant	\$450.00

1. These are not to exceed rates that will be appropriately discounted if additional SOWs are issued.



STATE OF MICHIGAN
CENTRAL PROCUREMENT SERVICES
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 **38**
to
Contract Number **071B1300138**

CONTRACTOR	OPTUM GOVERNMENT SOLUTIONS, INC.
	822 Centennial Way, Suite 100
	Lansing, MI 48917
	Jeanne McNeil
	517-993-0913
	jeanne.mcneil@optum.com
	CV0000961

STATE	Program Manager	Various	MULTI
	Contract Administrator	Matt Weiss	DTMB
		(517) 256-9895	
		weissm4@michigan.gov	

CONTRACT SUMMARY							
PRE-QUAL PROGRAM DTMB DATA WAREHOUSE BUSINESS INTE							
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS		EXPIRATION DATE BEFORE			
December 21, 2010	December 20, 2015	5 - 2 Year		December 20, 2021			
PAYMENT TERMS		DELIVERY TIMEFRAME					
ALTERNATE PAYMENT OPTIONS				EXTENDED PURCHASING			
<input type="checkbox"/> P-Card	<input type="checkbox"/> PRC	<input type="checkbox"/> Other		<input checked="" type="checkbox"/> Yes <input 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"/>		N/A			
CURRENT VALUE	VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE					
\$146,755,166.00	\$0.00	\$146,755,166.00					
DESCRIPTION							
Effective 7/16/2021, the State authorizes the Contractor (Optum) to subcontract with Datamaxis, Inc. in support of Contract No. 071B1300138 (DTMB-Data Warehouse Business Intelligence) between Optum and the State of Michigan (the "State") (the "Prime Contract") as well as the Data Warehouse (DW) and Business Intelligence (BI) Services Work Request and Statement of Work for services through 12/20/21 (the "MDHHS Work Request").							
All other terms, conditions, specifications, and pricing remain the same. Per contractor, agency and DTMB procurement.							

**Program Managers
for
Multi-Agency and Statewide Contracts**

AGENCY	NAME	PHONE	EMAIL
DTMB	Dave Fox	517-241-6483	FoxD@michigan.gov



STATE OF MICHIGAN
CENTRAL PROCUREMENT SERVICES
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 **37**

to

Contract Number **071B1300138**

CONTRACTOR	OPTUM GOVERNMENT SOLUTIONS, INC.	STATE	Program Manager	Various	MDHHS
	822 Centennial Way, Suite 100				
	Lansing, MI 48917		Contract Administrator	Jennifer May	DTMB
	David Wieber				
	517-327-2199				
	david.wieber@optum.com			mayj7@michigan.gov	
	CV0000961				

CONTRACT SUMMARY				
PRE-QUAL PROGRAM DTMB DATA WAREHOUSE BUSINESS INTE				
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE	
December 21, 2010	December 20, 2015	5 - 2 Year	December 20, 2020	
PAYMENT TERMS		DELIVERY TIMEFRAME		
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING	
<input type="checkbox"/> P-Card <input type="checkbox"/> PRC <input type="checkbox"/> Other			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
MINIMUM DELIVERY REQUIREMENTS				
DESCRIPTION OF CHANGE NOTICE				
OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
<input checked="" type="checkbox"/>		<input type="checkbox"/>		December 20, 2021
CURRENT VALUE	VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE		
\$134,192,866.00	\$12,562,300.00	\$146,755,166.00		
DESCRIPTION				
Effective 12/15/2020, this Contract is hereby increased by \$12,562,300.00, which is a not to exceed amount. The following amendment is hereby incorporated into the Contract. One option year is exercised. The revised Contract expiration is 12/20/2021.				
The Federal Provisions Addendum and Byrd Anti-Lobbying Certification are also incorporated into this Contract.				
All other terms, conditions, specifications, and pricing remain the same per contractor, agency, DTMB procurement and State Administrative Board approval on 12/15/2020.				

**Program Managers
for
Multi-Agency and Statewide Contracts**

AGENCY	NAME	PHONE	EMAIL
DTMB	Dave Fox	517-241-6483	FoxD@michigan.gov



**MICHIGAN DEPARTMENT OF TECHNOLOGY,
MANAGEMENT AND BUDGET
DATA WAREHOUSE (DW) AND BUSINESS INTELLIGENCE (BI) SERVICES WORK
REQUEST and STATEMENT OF WORK**

This Work Request and Statement of Work (collectively the “Work Request”) are being issued to Optum Government Solutions, Inc. (“Optum” or “Vendor” or “Contractor”) under Optum’s Contract (071B1300138) with the Michigan Department of Technology, Management and Budget, Procurement, as established under the Data Warehouse and Business Intelligence Program.

Project Title: Michigan Department of Health and Human Services Data Warehouse	Period of Coverage or Extension Period: 12/21/2020-12/20/2021
Requesting Agency: Michigan Department of Technology, Management, and Budget (DTMB)	
DTMB Program Manager: David Fox	Phone: 517-930-0972 Email: foxd@michigan.gov
Agency Program Manager: Cynthia Green-Edwards	Phone: 517-284-1035 Email: EdwardsC@michigan.gov
DTMB Contract Administrator: Matt Weiss	Phone: 517-256-9895 Email: weissm4@michigan.gov
Contractor Contract Administrator: Jeanne McNeil	Phone: 517-993-0913 Email: jeanne.mcneil@optum.com

BACKGROUND:

MDHHS has been using the data warehouse since 1994 to direct policy, detect fraud, identify potentially valuable new initiatives, reduce error rates, calculate rates and more.

MDHHS utilizes the data warehouse for multiple purposes including mission critical functions. It functions as the department's decision support system. MDHHS uses data from the warehouse for rate setting for hospitals and managed and long term care providers. It is used to manage the performance of its partners (managed care providers and others) as well as programs within MDHHS. The Department has an extensive analytics effort to ensure that funds are being spent most effectively, including detecting and prosecuting fraud, and assure that Medicaid beneficiaries are getting the best care possible. In support of departmental management, the data warehouse is used to analyze trends, report on all aspects of Medicaid Eligibility, Child Welfare, and Child Support, and provides critical support to the budgeting process. Beyond this, the data warehouse provides significant analytical support for epidemiology and other studies. In addition, MDHHS will be adding new data sources and increasing their collaboration with other agencies along with adding new analytical tools.

MDHHS has relied on State and Contractor staff to provide data warehouse support and business intelligence services. These services include: providing data warehouse Extract, Transform and Load (ETL) services, application development, web development, business intelligence model, reporting, query development, help desk support, training and data analysis.

Health Services Data Warehouse –

MDHHS will be expanding its use of the data warehouse as it continues to implement new functionality and expand ongoing work in its Medicaid Management Information System (MMIS), known as CHAMPS (Community Health Automated Medicaid Processing System). CHAMPS efforts underway include federally mandated projects such as the Promoting Interoperability Program, Electronic Visit Verification (EVV), and the Transformed Medicaid Statistical Information System (T-MSIS). The Department expects to utilize the data warehouse for Health Information Technology/Health Information Exchange initiatives, Medicaid statistical data analysis and managed care rate setting, and the Integrated Care Dual Eligibles Project. The Promoting Interoperability Program and Michigan Health Information Network are American Recovery and Reinvestment Act of 2009 (ARRA) initiatives to improve health care quality, cost, efficiency, and patient safety through electronic exchange of health information. An important requirement of these ARRA initiatives requires the use of clinical data to improve patient care outcomes, which will involve significant research efforts using de-identified data. It is anticipated that much of the data will be stored in the data warehouse. To store and use of this ARRA initiative data will require significantly increased data warehouse capabilities.

Human Services Data Warehouse –

MDHHS will be expanding its use of the data warehouse as it completes the acquisition and transition to a new Child Welfare application, currently known as MiSACWIS. Additionally, there will be an increased need to set up and implement self-service reporting in the major programs (Eligibility, Child Welfare, and Child Support). There will also be a transition effort in ETL services to move from "home-grown" scripting and data loads to using a COTS/GUI interface with more built in tracking and auditing capabilities.

The Staff Augmentation delivery process will be used for Health and Human Services positions, where the "Staff Augmentation" delivery process is defined as:

Roles:

- DTMB Program Manager as I/T owner
- MDHHS Agency Program Manager as business owner
- Contractor Contract Administrator as business intelligence services provider, i.e., providing business and I/T expertise

Delivery Process:

- The MDHHS Project Management Governance specifies each Health and Human Services project to the DTMB Program Manager.
- The DTMB Program Manager and MDHHS Agency Program Manager, with input from the Contractor Contract Administrator, work together to clarify project priorities via the State's PMO process.
- Contractor staffing resources work under the direction of their assigned manager who specifies Contractor staff roles, priorities, and specific project allocation levels.

- Contractor provides staffing resources with the DTMB defined skillset to work alongside DTMB resources under the direction of their assigned manager.

Standards:

- Manager assignments are determined by the DTMB Program Manager, with input from MDHHS Agency Program Manager and Contractor Contract Administrator.
- Contractor staff will be managed by DTMB and/or Contractor Managers including project assignment, workload, and technical direction/implementation as determined by the DTMB Program Manager.
- In some cases, Contractor staff will be located with the DTMB manager and team to which they are assigned. Contractor staff may also be located with the Contractor Manager. These assignments are determined by the DTMB Program Manager.
- Projects on which Contractor staff are working will be managed by State project managers supplied by DTMB/EPMO.

Contractor movements from Contractor managed to State managed will be documented through a Change Notice to the Contract by submitting a Change Request to Contractor that shall describe the specifics associated with that move. Such Change Request shall include, without limitation (a) the resources and scope of work that would be subject to such move, (b) the timing of the desired move and (c) any other changes to this Work Request. Contractor shall not withhold or delay providing a response to such Change Request but instead shall provide a Change Request Proposal to the State within ten (10) business days following receipt of the Change Request. Cost will be subject to the rates as defined in this Change Notice. Once the details of the Change Request Proposal or any modifications thereto have been agreed upon, DTMB and Contractor shall enter into a replacement Work Request.

Description of Services:

Michigan Department of Technology, Management and Budget (DTMB) has issued this Work Request to obtain the following positions to support, maintain and execute enhancement projects of various sizes for the MDHHS Data Warehouse:

For this extension, a new SIGMA DOIT1 request will be initiated to issue a DOIT1 for \$12,562,300 for the twelve (12) month period commencing 12/21/2020 to 12/20/2021. The DOIT1 will provide for separate invoicing for the following amounts:

1. The "Subtotals for Health Services" amount from Appendix A Table 1, Part 1 (i.e., \$10,717,180); and
2. The "Subtotals for Human Services" amount from Appendix A Table 1, Part 2 (i.e., \$1,845,120).

Both parties agree that this Work Request forms an integral part of a Change Notice to the Contract that provides for a 12-month extension of the Term of the Contract through 12/20/21.

For Health Services Data Warehouse (51 resources = 35 full-time and 16 part-time):

- Four (4) Data Warehouse Project Manager
- Two (2) Data Warehouse Architect
- One (1) Data Warehouse Database Administrator
- Ten (10) Data Warehouse Developers Senior
- Zero (0) Data Warehouse Developers Junior
- One (1) Data Warehouse Designer/Modeler
- One (1) Data Warehouse Business Intelligence Report Developer
- Ten (10) Data Warehouse Business Intelligence Analysts Senior
- One (1) Data Warehouse Business Intelligence Analysts Junior
- One (1) Data Warehouse Help Desk Analyst
- Six (6) Data Warehouse Web Developers Senior
- Zero (0) Data Warehouse Web Developers Junior
- Fourteen (14) Subject Matter Experts

For Human Services Data Warehouse (7 full time resources):

- Two (2) Data Warehouse Subject Matter Expert – Child Welfare
- One (1) Data Warehouse Database Administrator
- Two (2) Data Warehouse Developers Senior
- One (1) Data Warehouse Business Intelligence Analysts Senior
- One (1) Data Warehouse Business Objects Architect

This Work Request includes a total of fifty-eight (58) Full Time Equivalents (FTEs), consisting of 42 Full-time and 16 part-time resources. The total number of FTEs may be increased or decreased throughout the life of this Work Request, based on department needs and available funding. The fifty-one (51) resources on the Health Services Data Warehouse and seven (7) resources on the Human Services Data Warehouse will continue to augment the Department of Technology, Management, and Budget (DTMB) Agency Services with development, support, maintenance and enhancements to critical projects for the Michigan Department of Health and Human Services (MDHHS) DW.

It is the State's intent to establish this Work Request for BI Services to be provided to DTMB, in support of MDHHS, for a time period defined above as the Extension Period.

The work performed via this Work Request will be on a time and materials basis.

PROJECT OBJECTIVE:

The objective of this Work Request is to assist DTMB with the development, support, maintenance and enhancement of MDHHS Data Warehouse applications, which is an on-going activity prompted by changes in federal and state regulations, evolving business needs, opportunities for improving business processes, continued software and hardware upgrades, and break fixes.

SCOPE OF WORK:

- The scope of this Work Request is to provide Data Warehouse Business Intelligence (BI) Services on an as needed basis to support, maintain, and execute enhancement projects of various sizes for the MDHHS Data Warehouse set forth in this Work Request.
- Develop and maintain Data Warehouse BI applications that support MDHHS's day-to-day business operations.
- Resources will become familiar with DTMB personnel roles, DTMB supporting MDHHS's business processes, and DTMB's State Unified Information Technology Environment (SUITE) and DTMB technical standards, controls, and procedures.

Required Skill Category Requested:

1. Data Warehouse Project Manager
2. Data Warehouse Architect
3. Data Warehouse Database Administrator
4. Data Warehouse Developer Senior
5. Data Warehouse Developer Junior
6. Data Warehouse Designer/Modeler
7. Data Warehouse Business Intelligence Report Developer
8. Data Warehouse Business Intelligence Analyst Senior
9. Data Warehouse Business Intelligence Analyst Junior
10. Data Warehouse Help Desk Analyst
11. Data Warehouse Web Developer Senior
12. Data Warehouse Web Developer Junior
13. Subject Matter Expert
14. Data Warehouse Business Objects Architect

TASKS:**REQUIRED TASKS**

- The Contractor must attend security awareness training and any other relevant security and or confidentiality training requested by MDHHS and/or DTMB. Contractor staff must sign appropriate agreements or training certifications.

EXAMPLES OF ONGOING and UPCOMING CONTRACTOR TASKS

(these tasks may change based on direction from the State)

Health Services Data Warehouse

Contractors will provide support on a time and materials basis for the following Decision Support System (DSS) Advanced Planning Document (APD) Activities.

Detailed tasks for each Activity are listed in the APD for each fiscal year.

1. Develop Production Reports for the DW

- The Medicaid Enterprise relies on the DW for the majority of its production reporting, including reports needed for certification of federally funded source systems, extracts, and other production reports used to manage and evaluate MDHHS programs. This includes creation of new reports to align with new initiatives and/or program areas and enhancements to existing reports to correspond with source system changes. Users of these reports include, but are not limited to, MDHHS management and staff, the State legislature, federal agencies, counties, and providers.
- Production report development includes the following general tasks:
 - Map report data elements to corresponding data fields in the data warehouse
 - Conduct requirements gathering sessions to finalize requirements with MDHHS users
 - Develop, test and implement updated and new report versions

2. Provide Updated Analytic, Reporting, and Data Mining Tools and Enhanced Analytic Capability

- The MDHHS vision continues to include the use of ad-hoc analytics, predictive analytics, Online Analytical Processing (OLAP), and data mining tools. The OLAP and data mining tools are needed to examine data from multiple perspectives, which will allow for the identification of emerging trends and cost savings. This allows MDHHS to answer complex questions by performing multi-dimensional analysis across data sets and programs and to drill up and down through successive layers of detail to uncover trends, relationships, and patterns for improved decision-making.
- Symmetry software will be used as part of an effort to improve utilization of administrative data for the purposes of quality of care monitoring, program reporting, risk assessment and coordination of care for beneficiaries, such as Healthy Michigan Plan, Medicaid, Children's Special Health Care Services and MI Health Link. The State will be able to more efficiently calculate and report quality of care measure rates for a wider selection of chronic and episodic conditions, as well as preventive activities (e.g., screenings) using evidence-based specifications produced and updated annually by national quality organizations. The State will also have the capability to use prospective analytics for the purposes of risk assessment.
- BI Query software is a business intelligence tool that allows non-technical users access to data through a graphical user interface and allows them to build adhoc queries with minimal IT assistance.
- General Tasks in this activity include:
 - Upgrade Business Objects, BI Query, and Symmetry to support future needs of MDHHS. Utilize advance features of tool sets to include additional trusted data sources.

3. Identify and Load Additional Data Sets on the Data Warehouse

- As new systems and data sources are developed that support the Medicaid Enterprise, they will be integrated with the data warehouse and existing MDHHS data. This data could be Medicaid-specific or could be non-Medicaid, but enhances the Medicaid program by increasing quality of care, improving outcomes, or reducing costs.
- The process to add these data sets includes: defining requirements, establishing a process to maintain history, developing load programs, establishing reconciliation processes with source systems, and integrating new data with existing data in the BI Query models.

4. Enhance Existing Data Loads in order to Stay Current with Corresponding changes to Source Systems, New Policies and Technologies

- As MDHHS rewrites source systems to align with new requirements and technology, the data warehouse will require corresponding enhancements in order to load and store new and updated data elements and provide query and reporting access to the data. Source system changes may be driven by federal or state initiatives. This activity also includes the development needed to update existing data warehouse load processes to include additional data for the Medicaid Enterprise, including adding source system data elements to an existing data warehouse load, even when that data was not newly added to the source system

5. Develop Web Applications to Support Medicaid Programs and Processes

- This activity will develop and enhance data warehouse web applications to streamline processes in support of Medicaid programs, automate workflows, provide integrated data delivery, and provide tracking and reporting of Medicaid beneficiaries and programs.
- Users of these web applications include, but are not limited to: MDHHS; Medicaid Health Plans; Prepaid Inpatient Health Plans (PIHPs); Community Mental Health organizations (CMHs); and Integrated Care Organizations (ICOs).

Examples of Specific Tasks include:

- Beneficiary Monitoring Program (BMP)
- Waiver Support Application (WSA)
- CareConnect360 (CC360)

6. Provide Management of Data Availability and Security

- This Activity includes implementation of enhanced security measures and access processes to support policies, technologies and audit requirements, including password rules and expiration timeframes, data encryption, and enhanced Roles and Profiles. This work will leverage new capabilities that become available through upgrades to existing software.

7. Provide Additional Data Integration across Program Areas

- This activity will develop and enhance solutions to integrate MDHHS data across program areas, data sources, and other departments and agencies to bring together cross-populations, and therefore allow improved tracking and analysis of MDHHS beneficiaries.
- This activity also provides analysis to allow assessment of events that may be contributing to successes or shortfalls in programs, interventions, and outcomes which will allow MDHHS to collaborate with other departments and agencies to improve outcomes.
- Examples of data integration efforts include longitudinal analysis/reporting of data across programs, creation of views to provide access to data across program areas, and developing data exchanges between the data warehouse and Michigan Department of Health and Human Services (MDHHS) partner organizations such as health plans and the Michigan Health Information Network (MiHIN). This also enhances architecture to align with MITA.

8. Provide onsite analytic development for the various program models, and analytic tools

9. Enhance the Data Warehouse as a Result of CHAMPS and Bridges in order to Stay Current with Corresponding Changes to Source Systems, New Policies and Technologies

- This activity will implement changes to database structures, models, views, reconciliation processes, and Extract, Transform, Load (ETL) processes for both Staging and Production tables, as a result of changes to the source systems. These changes will include derived fields and any work related to corresponding software upgrades. For example, the Community Health Automated Medicaid Processing System (CHAMPS) subsystems include:
 - Provider (PE)
 - Eligibility and Enrollment (EE)
 - Contracts Management (CM)

- Claims and Encounters (CE)
 - Reference (BA)
 - Lookup Tables (LU)
 - Financials (OFIN)
 - Third Party Liability (TPL)
 - Master (MT)
 - Prior Authorization (PA)
 - Medicaid Electronic Health Record Incentive (EHR)
- The activity will also develop and enhance processes to extract data from the data warehouse to be used for on-going production data loads to source systems. These data are used for purposes such as adjudicating claims in CHAMPS, determining eligibility in Bridges, such as extracts for Waiver enrollments, mental health eligibility, and trusted data sources for eligibility determination.
 - Finally, the activity will implement changes to the Eligible Months data mart as a result of changes to source systems.

10. Enhance the Program Integrity Process

- Healthcare fraud significantly impacts the Medicaid program by using up valuable public funds needed to help vulnerable children and adults access health care. This activity will support the enhancement of the Program Integrity (PI) process through the design, development, and implementation of data warehouse solutions to support identification and investigation of fraud related to Medicaid and other MDHHS programs.

11. Build Systems to Load and Access Pharmacy Data on the Data Warehouse

Pharmacy data is loaded directly to the data warehouse and thus does not go through Michigan's MMIS, Community Health Automated Medicaid Processing System (CHAMPS). This includes the pharmacy claims processed by the Medicaid program's Pharmacy Benefit Manager (PBM), pharmacy encounters submitted by Medicaid Health Plans and Prepaid Inpatient Health Plans (PIHPs), supporting data (National Drug Code, or 'NDC', CMS, rebates, etc.), Medicaid Managed Assistance/Territory Beneficiary Query (MMA/TBQ) processes, extracts to Health Plans, and other corresponding activities.

- This activity includes all the work related to bringing the data into the data warehouse (e.g., creating database structures, models, views, data load programs, adjudication logic, error/return processing), integrating it with other MDHHS data, particularly CHAMPS, and creating queries, reports, extracts and applications to support the Pharmacy program.

12. Develop Web-Based Security Application

- The Database Security Application (DSA) foundation provides an automated web-based workflow and corresponding database for requesting and approving access to MDHHS systems such as data warehouse, FileNet, and Community Health Automated Medicaid Processing System (CHAMPS).
- This Activity includes:
 - Enhancements to technical framework
 - Creation of new "forms" within DSA for requesting access to MDHHS systems
 - Enhancements and additional functionality to existing forms
 - Development of training modules, both web-based and training manuals
 - Development of other necessary end user training materials

13. Develop and Configure the Master Person Index (MPI)

- IBM InfoSphere will be used to build the Master Person Index (MPI) and the Provider Index (PI). IBM InfoSphere accepts incoming data and uses logic, rules, and algorithms to compare the incoming data with existing records. The comparisons produce scores that indicate which records are likely to represent the same entity. IBM InfoSphere then links incoming and existing records that meet or exceed a specified threshold.
- IBM InfoSphere will be configured for multiple indices: beneficiaries, providers, health plans, and other health care entities.
- All tasks included in this activity include development and implementation of corresponding governance structure and supporting documentation.
- There are two primary methods for Data Sources to interface with MPI:
 - Batch process through the Enterprise Data Warehouse (EDW) – facilitates secure data sharing with minimal need for sending data between parties (data can be shared via service account access)
 - Real-time through the Health Services Enterprise Service Bus (ESB) – allows users to control their interactions with MPI and provides real-time sharing opportunities
- Adding a new Data Source to MPI includes the following activities:
 - Establish appropriate Data Sharing Agreements
 - Establish connections to the ESB or EDW and MPI
 - Configure source in MPI
 - Initial data load
 - Initial data analytics
 - Onboard Source Data Stewards and Owners to MIDSP

14. Enhance DW Operability and Access

- Analysis and development to optimize query and system performance will reduce DW usage costs by improving efficiency and reducing storage space. Analysis of CHAMPS DW usage will be performed to determine areas for improvement (e.g., rewrite queries, add statistics, and add/remove indexes to align with user access to data, compress databases). Solutions will then be identified, developed and implemented to address the identified areas for improvement.
- Also includes patch releases as needed to provide functionality needed by MDHHS and to stay current with third party vendor supported hardware and software including Teradata.

15. Develop Queries and Extracts to Support the Medicaid Enterprise

- The data warehouse is a critical component of Medicaid and other MDHHS programs. It is the primary source of information for business operations, actuarial functions and day-to-day queries.
- It is also the primary source of information for audits, research, lawsuits, Freedom of Information Act (FOIA) requests, and other similar requests for data. These requests typically require response within a short timeframe and require knowledge of both Medicaid and the data warehouse.
- Tasks include developing and updating data extracts.

16. <Intentionally blank>**17. Management of the MDHHS Data Warehouse/Decision Support Effort**

- Provides strategic planning and management at various levels, from a task level through Activity levels and as part of a departmental-level oversight effort.

18. Design, Development, and Installation of the MDHHS Business Glossary and Metadata Management Roadmap – if prioritized in FY21**19. Data Warehouse Modernization – if prioritized in FY21**

Human Services Data Warehouse

Contractors will provide support on a time and materials basis for the following activities.

1. Renovation and replacement of Child Welfare application (MiSACWIS)
2. Federal and State Reporting, including court ordered reporting
3. Run production reporting on the data warehouse
4. Provide updated analytic, reporting, data mining, and web-based analytic tools to enhance the analytic capability of the staff
5. Identify and load additional data sets on the data warehouse
6. Changes to existing data loads in order to stay current with enhancements to source systems: MICIS data sets
7. Provide onsite analytic development for the various program models, and analytic tools
8. Enhance the data warehouse as a result of BRIDGES, Child Support, Child Welfare changes.
9. Develop Queries and Reports to support BRIDGES, Child Support, Child Welfare Programs
10. Design, Development, and Installation of the MDHHS Business Glossary and Metadata Management Roadmap
11. Data Warehouse Modernization – if prioritized in FY21

IT Classifications/Skills Set and Tasks:

The requirement is that the individual must possess the skills, knowledge, and experience required to perform the duties effectively and efficiently at the level specified in the work request. Below are standard role descriptions, each with an example list of responsibilities. All listed responsibilities may not be required for a specific position.

- **Data Warehouse Project Manager**

Data warehouse project manager manages the integration and/or development and delivery of very large and complex deliverables directly to the customer. This position provides the primary interface between the Contractor, the State and third-party providers.

- Establishes and manages the project plan, according to SUITE standards, including the development schedule, resource requirements and integration efforts of third-party products. Periodically reports progress to State management.
- Motivates and directs project team; sets goals, objectives and priorities; assigns and reviews work.
- Acts as the primary interface with the DTMB on issues regarding the project deliverable. Makes sure customer reviews are held with the customer user community and obtains sign-off on status reports and requirements.
- Works with DTMB to ensure approved methods, processes and tools are consistently used.
- Is accountable for meeting project schedule and results as well as for the State customer satisfaction and quality of the deliverables.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.
 - Facilitate user groups to encourage self-support among end user and developers
 - Facilitate requirements sessions and discussions with end users/business owners to gather information needed to understand business needs

- o Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs. Assists DTMB and MDHHS with documentation for managing the data warehouse such as presentations, reports and Advanced Planning Documentation (APD) to be submitted to CMS for funding.

Required Experience

- Bachelor's degree or equivalent technical study
- 5+ Years Project Manager or Team Lead Experience.
- 5+ Years Data Warehouse Business Intelligence / Experience.
- 3+ Years Teradata DW Experience.
- The following knowledge/experience may also be required for some roles:
 - o SQL Assistant experience
 - o Business Objects Training experience
 - o Business Objects report development
 - o Medicaid, Child Welfare, Public Assistance Eligibility & Benefit Determination, or Families & Children (US Department of Health & Human Services) knowledge.
 - o Teradata Utilities experience
 - o SUITE Methodology experience

- **Data Warehouse Architect**

Data warehouse architect designs total solutions involving multiple systems for large organizations. Participates/leads in the construction of models and pilot programs with senior level managers.

- Conducts model and pilot programs to test proposals or develop solutions to problems. Develops measurement criteria to evaluate programs and projects and develops or reviews estimates on technical aspects of projects.
- Responsible for data warehouse database design and providing technical direction to modelers, data analysts, ETL developers, and database administrators.
- Develops design proposals to meet DTMB and MDHHS needs
- Approves integrated systems design proposals for technical content.
- Monitors the implementation for technical correctness so that MDHHS needs are met.
- Identifies, analyzes and evaluates alternative design solutions.

Required Experience

- Bachelor's degree or equivalent technical study
- 6+ Years Data Warehouse Architect and Modeling Experience.
- Teradata Version 15/16 (or higher) Experience.
- Teradata Utilities Experience.
- 2+ Years Data Warehouse Administrator Experience.

- **Data Warehouse Business Objects Architect**

Is responsible for the availability, security, and usefulness of the MDHHS BO environment. This may include tasks such as:

- Verification of all BO user's login accessing MDHHS BO universes.
- Monitoring the MDHHS BO environment assuring that it is running with optimal performance.
- Testing the availability of all universe connections to respective DW databases.
- Verifying user activities and BO module activities from Web Intelligence Console.
- Troubleshooting any issues with reports (Technical support to End Users).
- Regular BO repository maintenance like Cleaning Orphaned Connection/Universe/Documents Scan / repair and compact to all repository errors and domain testing.
- Running integrity checks on all MDHHS BO universes to ensure through parsing (Syntax/Semantic checking).
- New BO universe development and modification.
- Data mapping to new tables in the universes.

- BO resource allocation like linking universe and documents to users and user groups.
- Meeting with BO users to discuss supporting issues.
- Help with end user training.
- Is expected to be able to work with agency requestors to define and develop new reports, and provide training and technical support to both DTMB developers and end user query developers. Their report development tasks may include:
 - Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - Develop and present training classes for end user developers to help learn how to most effectively use the DW platform and the BI tools available to them to support their own data needs where possible.
 - Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the DW.
 - Provide one-on-one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- Bachelor's degree or equivalent technical study
 - 10+ Years BO Administrator experience
 - 5+ Years Business Objects Universe Development experience
 - BO Version 4.2 SP4 or higher
 - BO WEBi and InfoView Training experience
 - 5+ Years BO Report Developer
 - Crystal Reports experience
- **Data Warehouse Database Administrator**
DW database administrator (DBA) is responsible for the availability, safety and usefulness of the MDHHS data warehouse databases.
 - Working in conjunction with system administrators, perform server configuration to ensure that the entire database system is capable of providing the services needed.
 - Performance monitoring to identify bottlenecks and places where throughput can be improved.
 - Security administration to ensure that the database cannot be accessed by unauthorized parties or damaged by anyone.
 - Configure access to the data warehouse and communication between the warehouse and other servers.
 - Physical database design translates the logical database design to work optimally for the specific database environment.
 - Working with State DW developers and Compliance staff to establish standards and guidelines for access to MDHHS data warehouse databases.
 - Collaborate with DTMB to provide data/database integrity for software installation and updates; and backup and restore, including:
 - o Software installation and database management system upgrades
 - o Software upgrades so that the database is in compliance with critical security patches, or, software upgrades deemed necessary by the State.
 - Work with State DW developers and clients to optimize their queries.

Required Experience

- Bachelor's degree or equivalent technical study
- 4+ Teradata Database Administrator Experience.
- 2+ Teradata Version 15/16 (or higher) Experience.
- Teradata Utilities Experience.
- Teradata Manager Experience.
- SQL Assistant Experience.
- Linux/Unix Experience.
- Oracle Experience.

- **Data Warehouse Developer Senior/Junior)**

Data warehouse developers perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other MDHHS applications. In addition, they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Interact with Business Users and Subject-Matter Experts from the Michigan Department of Health and Human Services (MDHHS) to gather and document technical requirements and processes.
- Identify the key metrics that are to be reported from the MDHHS Data Warehouse using Business Intelligence (BI) tools.
- Create mapping and migration analysis documents.
- Develop the ETL (Extract, Transform and Load) scripts using Teradata Utilities (TPT, Bteq, FExports, MLOAD, Stored procedures and Data Marts) for Loading the Data from Source system to Target system by applying business rules as per the requirements
- Analyze MDHHS data warehouse needs and then design, test, and develop SQL Code/Reports software to meet those requirements
- Collaborate with Teradata DBAs, Data Modelers, Business Analysts and Business users to design and develop Teradata SQL code and Business objects reports.
- Design and develop data marts using Teradata SQL to be used in BI reporting to meet MDHHS needs.
- Design & develop the batch flow using Unix Shell Scripts to load data from Operational System to the MDHHS Data Warehouse.
- Perform Unit Testing and provide support during System Testing and User Acceptance Testing. Resolve the issues/defects identified during Testing.
- Performance tuning and optimization of ETL (Extract, Transform and Load).
- Design, develop, implement and maintain new reporting functionality and analytic applications across multiple business units using various business intelligence tools.
- Identify, design and develop the strategic reports that are to be reported from the MDHHS Data Warehouse using Business Intelligence (BI) tool.
- Create data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- SQL development
- Train developers and end-users in how best to design queries for a specific database.

DW Developer – Senior: Required Experience

- Bachelor's degree or equivalent technical study
- 6+ Years SQL Development Experience.
- Teradata Version 15/16 (or higher) Experience
- ETL Development using Teradata Utilities and Linux Experience.
- 6 Years Teradata Utilities experience
- 3 Years SQL and Performance Tuning
- Excellent written and oral communication skills
- Mentoring co-workers
- The following knowledge/experience may also be required for some roles:
 - o 3 Years SQL Assistant experience
 - o 3 Years Unix Shell Scripting experience
 - o Business Analyst experience

Data Warehouse Developer Junior

Data warehouse developers perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other MDHHS applications. In addition, they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Creating data warehouse-based applications including reporting, dashboards and other information analysis and delivery systems.
- Perform extract, transform, and load activities to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.

- Work with developers and end user query developers to design and improve database queries.
- DW Developer - Junior: Required Experience
- 2+ Years SQL Development Experience.
- Teradata Utilities Experience.
- SQL Assistant Experience.
- **Data Warehouse Designer/Modeler**
Data warehouse designer is responsible for the database modeling and design for an efficient data warehouse objects structure. This involves defining the tables, keys and relationships that will allow an application to retrieve and update data correctly and efficiently.
 - Will work with State and contract staff to ensure that the MDHHS DW models support the data, reporting, and analytic needs required for MDHHS.
 - Working with end users and developers to understand the data needs of MDHHS clients.
 - Documenting the data warehouse data involves including definitions, constraints and access needs.
 - Creating and maintaining data warehouse logical designs, including Entity Relationship diagrams, which illustrate what data will be stored, how it is organized, how it can be retrieved (keys) and how it relates to other data in the database.
 - Creating and maintaining data warehouse data definition language (DDL) that can be used to create and update the database.
 - Working with Data Warehouse DBA and ETL developers, modify the logical design to create a physical design most suited to the database environment and the applications that will use it.
 - Work with Data Warehouse ETL developers and DBA to create and maintain database design standards.
 - Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their report development related tasks may include:
 - Working with end user requestors to understand their data needs and create and implement solutions for those needs.
 - Develop and present training classes for end user developers to help them learn how to most effectively use the DW platform and the BI tools available to them to support their own data needs, where possible.
 - Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solutions using the DW.
 - Provide one-on-one support for developers and end users to assist them in accomplishing their data reporting needs.
 - Perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other Agency applications. Their development related activities may include tasks such as:
 - Creating data warehouse-based applications including reporting, dashboards and other information analysis and delivery systems.
 - Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
 - SQL development.
 - Work with developers and end user query developers to design and improvedatabase queries.
 - Train developers in how best to design queries for a specific database.

Required Experience

- Bachelor's degree or equivalent technical study
- 5+ Years Data Warehouse Modeling Experience.
- 5+ Years of SQL Development.
- Data Warehouse Architect Experience.
- **Data Warehouse Business Intelligence Report Developer**
Data Warehouse Business Intelligence Report Developer is expected to be able to work with agency requestors to define and develop new reports, and provide training and technical support to both DTMB

developers and end user query developers.

- Working with end user requestors to understand their data needs and create and implement solutions to those needs.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
- Develop and present training classes for DTMB developers to better understand how to use the data warehouse development tools to create and implement reporting solution using the data warehouse.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 5+ Years of Business Objects Report Development Experience.
- 5+ Years of SQL Development.
- Business Analyst Experience may be required.
- Excellent written and oral communication skills

- **Data Warehouse Business Intelligence Analyst (Senior/Junior)**

Data warehouse business intelligence/analyst works with end users to provide information in a number of different ways.

- Running JAD sessions to understand and collect business requirements, develop use cases and determine what data is needed and how it is likely to be used.
- Helping translate business requirements into technical specifications, e.g., ETL and report requirements.
- Analyzing data requests from various customers to define/determine requirements for modifications and enhancements to existing data warehouse/business intelligence systems.
- Creating ad-hoc queries to answer specific user questions.
- Helping design and specify data warehouse business solutions.
- Creating data warehouse-based applications including reporting, dashboards and other information analysis and delivery systems.
- Supporting end user to enable them to create their own queries and reports as needed.
- Identify data problems and work with developers to correct them.
- Working with developers and customers to assist in establishing test plans and data; validation of program/reporting functions; and preparation of necessary forms and documentation for implementation.
- Configuring data models and structures, e.g., business intelligence rules, and applications settings according to design specifications and departmental standards.
- Analyzing and recommending process improvements.
- Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
- Organize and run user groups to encourage self-support among end user and DTMB query and other data warehouse application developers.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
 - o Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - o Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
 - o Develop and present training classes for DTMB developers to better understand how to use the data warehouse development tools to create and implement reporting solution using the data warehouse.
 - o Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

DW BI Analyst – Senior: Required Experience

- Bachelor's degree or equivalent technical study
- 6+ Years Project Lead / Data Warehouse BI Analyst Experience.
- Training Experience.
- SQL Assistant Experience.
- Medicaid, child welfare or other specialty experience may be desired.

DW BI Analyst – Junior: Required Experience

- 2+ Years Project Lead / Data Warehouse BI Analyst Experience.
- Medicaid, child welfare or other specialty experience may be desired.

- **Data Warehouse Help Desk Analyst**

DW help desk staff provide first line support for end users and developers.

- Manages MDHHS Data Warehouse mailbox.
- Assesses user identified issues and provides guidance for resolution.
- Directs unresolved problems and reports to appropriate staff, if necessary.
- Tracks and analyzes problem occurrences and resolutions.
- Conducts data warehouse user group training.
- Develops training materials.
- Assists with query/report development.
- Provides user assistance with data warehouse tool(s), model/database, business knowledge and recommendations for efficiency and solutions to meet user business needs.

Required Experience

- 3+ Years of Data Warehouse Help Desk Analyst Experience.
- Experience in supporting the end users in accessing the data warehouse and effectively utilize the desktop tools.

- **Data Warehouse Web Developer (Senior/Junior)**

A DW Web Developer is responsible for designing and developing web-based applications that interact with and utilize the data warehouse to provide MDHHS users with highly interactive, easy to use web-based data warehouse applications.

- Learning the customer's business process and working with others to define customer requirements specifications by participating in meetings, analysis and documentation preparation
- Defining and developing applications that rely on unique web-based technology and tools, and that will conform to standards defined by DTMB for user interface and usage of the data warehouse.
- Defining the web application user interface, business rules, database access and data warehouse access, and determining any data sources that need to be imported into the data warehouse for web application operation.
- Producing technical specification documents and designs (e.g., process flows, screen mock-ups, component logic) to review the web application with the user, and conducting JAD sessions to revise and finalize technical specifications.
- Prototyping of web application pages for user review and approval.
- Producing accurate and complete data mapping documents
- Performing user acceptance testing with users and DTMB to confirm that new web applications perform per specifications, and making adjustments to the web application as required
- Helping maintain a development and staging environment for the development and testing of enhancements and updates to the web application.
- Problem-solving, troubleshooting and identifying/executing resolution actions
- Assisting with creation of help documents and procedures manuals
- Assisting with creation of presentation materials for technical review meetings, approval sessions and application demonstrations

DW Web Developer – Senior: Required Experience

- Bachelor's degree or equivalent technical study
- 5+ Years of Data Warehouse Web Developer Experience.
- Web development may include: HTML, JavaScript; JQuery; Javascript libraries and plugins; CSS Libraries like Bootstrap; Ajax; ASP.NET with Webforms and Model View Controller (MVC); Visual Studio; SQL Server and the development and maintenance of relational databases integrated with Visual Studio web applications; RESTful services; Web APIs; Crystal Reports; integration to SQL Server or Teradata RDBMS; Telerik Control Toolkit; web app interface with LDAP, Microsoft SharePoint, Business Objects and FileNet; Internet Information Services (IIS) configuration and management; networking using TCP/IP; tools for web prototyping like Protoshare; version control software (Subversion, GitHub); unit testing tools; agile development methodology.
- Medicaid, child welfare or other specialty may be desired

DW Web Developer – Junior: Required Experience

- 2+ years of data warehouse web developer experience
- Experience with a subset of the technologies listed above for DW Web Developer - Senior

- **Subject Matter Expert (SME)**

A Subject Matter Expert (SME) will be responsible for providing specialized, in-depth knowledge of a business area(s) such as Medicaid, Master Person Index/Provider Index, Pharmacy, ICD-10, HEDIS, Metadata Management, and technology solutions.

- Leading or actively participating in workgroups with the need for specialized knowledge.
- Providing guidance on how their area of expertise can resolve an organizational need, and actively participates in all phases of a project/initiative by sharing their knowledge, expertise and ideas.
- Defining technology and business solutions based on thorough understanding of business processes and policies.
- Reviewing, helping re-engineer, or creating new processes and policies.
- Evaluating and defining technology requirements and solutions.
- Defining business needs, and identifying and recommending the most appropriate solutions.
- Providing documentation such as forms, manuals, correspondence, and procedures
- Understanding, articulating, and implementing best practices related to their area of expertise.
- In some cases, will work with end users to provide information in many ways. This may include tasks such as:
 - o Running Joint Application Design (JAD) sessions to understand what data is needed and how it is likely to be used.
 - o Creating ad-hoc queries to answer specific user questions.
 - o Program design and specification.
 - o Creating DW based applications including reporting, dashboards and other information analysis and delivery systems.
 - o Supporting end user to enable them to create their own queries and reports as needed.
 - o Identify data problems and work with developers to correct them.
 - o Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
 - o Organize and run user groups to encourage self-support among end user and DTMB query and other BI application developers
- In some cases, the SME will also be expected to be able to work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
 - o Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - o Develop and present training classes for end user developers to help learn how to most effectively use the DW platform and the BI tools available to them to support their own data needs where possible.
 - o Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the DW.
 - o Provide one-on-one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- Experience requirements will vary depending on area of expertise being requested. Current SMEs must have expertise in Medicaid, technology solutions, MPI/PI, metadata management, population health and/or business objects dashboards.

DELIVERABLES:

The deliverables and tasks agreed to in the resulting Contract shall comply with the following approval process:

APPROVAL OF DELIVERABLES, IN GENERAL:

(a) All Deliverables (Physical Deliverables, Written Deliverables, and Service Deliverables) require formal written approval by the State, in accordance with the following procedures. Formal approval by the State requires that the Deliverable be confirmed in writing by the State to meet its specifications, which will include the successful completion of Testing, to be led by the State with the support and assistance of Contractor. The parties acknowledge that the approval process set forth herein will be facilitated by ongoing consultation between the parties, visibility of interim and intermediate Deliverables and collaboration on key decisions.

(b) The State's obligation to comply with any State Review Period is conditioned on the timely delivery of Deliverables being reviewed.

(c) Prior to commencement of its review or testing of a Deliverable, the State may inspect the Deliverable to confirm that all components of the Deliverable have been delivered without material deficiencies. If the State determines that the Deliverable has material deficiencies, the State may refuse delivery of the Deliverable without performing any further inspection or testing of the Deliverable. Otherwise, the review period will be deemed to have started on the day the State and Contractor receive the Deliverable and agree that the Deliverable is ready for use and, where applicable, Contractor has provided certification to that effect.

(d) The State will approve in writing a Deliverable upon confirming that it conforms to and, performs in accordance with, its specifications without material deficiency. The State may, but shall not be required to, conditionally approve in writing a Deliverable that contains material deficiencies if the State elects to permit Contractor to rectify them post-approval. In any case, Contractor will be responsible for working diligently to correct within a reasonable time at Contractor's expense all deficiencies in the Deliverable that remain outstanding at the time of State approval.

(e) If, after three (3) opportunities (the original and two repeat efforts), Contractor is unable to correct all deficiencies preventing Final Acceptance of a Deliverable, the State may: (i) demand that Contractor cure the failure and give Contractor additional time to cure the failure at the sole expense of Contractor; or (ii) keep any resulting Contract(s) in force and do, either itself or through other parties, whatever Contractor has failed to do, in which event Contractor shall bear any excess expenditure incurred by the State in so doing beyond the Contract(s) price for such Deliverable and will pay the State an additional sum equal to ten percent (10%) of such excess expenditure to cover the State's general expenses provided the State can furnish proof of such general expenses; or (iii) terminate the particular Statement of Work for default, either in whole or in part by notice to Contractor provided Contractor is unable to cure such breach. Notwithstanding the foregoing, the State shall not use, as a basis for exercising its termination rights under this Section, deficiencies discovered in a repeat State Review Period that could reasonably have been discovered during a prior State Review Period.

(f) The State, at any time and in its reasonable discretion, may halt the testing or approval process if such process reveals deficiencies in or problems with a Deliverable in a sufficient quantity or of a sufficient severity as to make the continuation of such process unproductive or unworkable. In such case, the State may return the applicable Deliverable to Contractor for correction and re-delivery prior to resuming the testing or approval process.

PROCESS FOR APPROVAL WRITTEN DELIVERABLES:

The State Review Period for Written Deliverables will be the number of days set forth in the applicable Statement of Work/Purchase Order following delivery of the final version of the Deliverable (failing which the State Review Period, by default, shall be five (5) Business Days for Written Deliverables of one hundred (100) pages or less and ten (10) Business Days for Written Deliverables of more than one hundred (100) pages). The duration of the State Review Periods will be doubled if the State has not had an opportunity to review an interim draft of the Written Deliverable prior to its submission to the State. The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor

will correct the described deficiencies and within five (5) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF SERVICE DELIVERABLES:

The State Review Period for approval of Service Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) Business Days for a Service Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF PHYSICAL DELIVERABLES:

The State Review Period for approval of Physical Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) continuous Business Days for a Physical Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

ACCEPTANCE CRITERIA:

PROJECT CONTROL AND REPORTS:

Contractor must submit a monthly progress report to DTMB Program Manager throughout the life of this project. The report may be submitted with the billing invoice. Each monthly progress report must contain the following information:

- **Hours:** Indicate the number of hours expended during the past month, and the cumulative total to date for the project.
- **Tasks accomplished:** Indicate what projects have been worked on, and what was completed during the current reporting period.

AGENCY RESPONSIBILITIES:

- The State may terminate for convenience the services of any individual Vendor supplied staff with two weeks' notice.
- Provide access to State networks, servers, software license (as appropriate), etc. needed for Contractor to perform tasks required for this agreement
- For all work performed at State owned or leased buildings:
 - Provide contractor staff access to telephone and copying equipment
 - Provide contractor staff computer hardware and software, unless it is mutually deemed unnecessary
- The State's responsibilities are listed on pages 2-4

LOCATION OF WHERE THE WORK IS TO BE PERFORMED:

All Staff Augmentation services described in this Work Request will continue to be performed at locations previously agreed upon between the DTMB Project Manager and Vendor until altered through a Contract Change Notice.

The work for all Staff Augmentation services described in this Work Request is to be performed, completed, and managed in State owned or leased buildings or approved remote work locations, such as a Vendor location or work from home, with the expectation that personnel will be available, on hand and able to complete emergency tasks. DTMB does allow telecommuting/working remotely. This is determined on an individual basis and is at DTMB Program Manager discretion in accordance with DTMB Policy. In addition, onsite support may be needed and will be identified at such time.

EXPECTED CONTRACTOR WORK HOURS AND CONDITIONS:

Contractor must provide services during normal working hours (Monday through Friday, 7:00 a.m. to 6:00 p.m. ET.) and possible night and weekend hours depending on position and project requirements. 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. Contractor's staff working at State offices shall observe the same standard holidays as State employees.

The State does not compensate for holiday pay.

No overtime will be permitted, i.e., Contractor will not be paid any different hourly rate if the number of hours exceeds forty (40) in any given week.

SPECIFIC AGENCY STANDARDS:

- Contractor will provide the State with all process, standards, project, and technical documentation they utilize to meet MDHHS business requests. This includes documentation for closed projects, maintenance documentation, and project status/tracking information.
- Contractor will provide all code, scripts, and technical work completed or utilized on behalf of the State of Michigan in a timely fashion meeting DTMB timelines.
- Contractor staff will be subject to skills assessments at the discretion of the State.
- Contractor's staff providing Staff Augmentation/State managed services may be utilized across programs within the MDHHS to support Data Warehouse Business Intelligence projects as needed, at the discretion of the DTMB Program Manager. Contractor movements from Contractor managed to State managed will be documented through a Contract Change Notice.
- Contractor will cross-train with SOM staff to provide knowledge transfer and transition of work from Contractor staff to State staff.
- Contractor will follow DTMB guidelines and practices for project completion, SUITE documentation, technical documentation, and any other work performed on behalf of the SOM.
- Contractor staff will utilize the portfolio management tool, Clarity.
- Contractor staff will be subject to SOM/DTMB IT policies, procedures, and standards.

RIGHT TO OWNERSHIP:

State intends to own the Software at the end of the Contract

- Ownership of Work Product by State. All Deliverables shall be owned by the State and shall be considered works made for hire by the Contractor for the State. The State shall own all United States and international copyrights, trademarks, patents or other proprietary rights in the Deliverables.

- Vesting of Rights. The Contractor agrees to assign and upon creation of each Deliverable automatically assigns, to the State ownership of all United States and international copyrights, trademarks, patents or other proprietary rights in each and every Deliverable, whether or not registered by the Contractor, insofar as any such Deliverable, by operation of law, may not be considered work made for hire by the Contractor for the State. From time to time upon State's request, the Contractor and/or its personnel shall confirm such assignment by execution and delivery of such assignments, confirmations of assignment, or other written instruments as the State may request. The State shall have the right to obtain and hold in its own name all copyright, trademark, and patent registrations and other evidence of rights that may be available for Deliverables.
- STATE MUST RECEIVE FAIR MARKET VALUE FOR THE LICENSE – (This must be reviewed and negotiated by the DTMB Procurement Buyer)

PAYMENT SCHEDULE:

Payment will be made on a time and materials basis (hourly based) and will be paid monthly. The State will pay Contractor upon receipt of properly completed invoices which shall be submitted to the billing address on the State issued purchase order not more often than monthly. DTMB's Accounts Payable area will coordinate obtaining the DTMB Program Manager approvals. All invoices should reflect the actual work hours completed by payment date, and must be approved by the DTMB Program Manager prior to payment. The invoices shall describe and document to the State's satisfaction a description of the work performed, the progress of the project, and fees.

All invoices must contain the State of Michigan issued purchase order number.

Payment shall be considered timely if made by the State within forty-five (45) days after receipt of properly completed invoices.

EXPENSES:

The State will NOT pay for any travel time or travel expenses, including hotel, mileage, meals, parking, etc.

PRICING SUMMARY

Pricing for the Extension Period is set forth in Appendix A below.

MODIFICATIONS

For an agreement of this size, changes to staffing (resources and/or subcontracting companies) may normally occur. Contractor will provide the State a staffing letter specifying any such changes and the State will provide written approval for acceptance. Contractor will also work with the State to complete the State's approval process for new subcontracting companies, as needed.

Other types of changes will be implemented, as needed, via (i) acceptance letters; or (ii) a simple amendment (e.g., typically 1- or 2-pages) that describes the change and requires State's written approval for acceptance.

ADDITIONAL TIME & MATERIALS LABOR RATES FOR PROFESSIONAL SERVICES:

To the extent the parties agree that certain specific services must be provided on a time and materials basis, such services must be provided within the not to exceed hourly rates as revised in Change Notice 33, Revised Cost Table - Attachment A, included here as Appendix B for reference. Future amendments to this Work Request may utilize this rate structure, as agreed between the Contractor and State.

Additionally, the Contractor may utilize the rates in order to provide the State with a not to exceed time and materials price. Prices quoted herein will be used for change, addition, and / or deletion of work associated with this Work Request. The Estimated Hours is provided below as an estimate only and is not meant to preclude or limit the State from requesting a resource/staffing mix for future projects that exceeds or reduces the hours estimate for a specific Staffing Category.

Appendix A

Table 1 - part 1

Assigned Resource	Position Ref	Position	Contract Year 12/21/20 - 12/20/21		
			Hourly Rate	Est. Max Hours	Estimated Dollars
MDHHS Health Services					
BAUMAN, AMY	A01	Data Warehouse Project Manager	134	1,984	265,856
BLAIR, CORINNE	A02	Subject Matter Expert MPI	235	521	122,435
BOAK, KATHY	A03	Data Warehouse Developer - Senior	126	1,984	249,984
BONAM, SUDHAKAR	A04	Data Warehouse Developer - Senior	126	1,984	249,984
BRAR, BIRINDER	A05	Data Warehouse BI Analyst - Senior	126	1,984	249,984
BUSH, STEPHEN	A06	Data Warehouse Developer - Senior	126	1,984	249,984
CAREY, TIM	A07	Data Warehouse Project Manager	134	1,984	265,856
CARTER, TYSON	A08	Subject Matter Expert MPI	235	521	122,435
CHERUKURI, SAI	A09	Data Warehouse Web Developer - Senior	108	1,984	214,272
CHIKYALA, DHEERAJ	A10	Data Warehouse Developer - Senior	126	1,984	249,984
CHITIBOMMA, RAVI	A11	Data Warehouse Developer - Senior	126	1,984	249,984
CHRISTIANSEN, JEREMY	A13	Data Warehouse Developer - Senior	126	992	124,992
COBURN, DEB	A14	Data Warehouse BI Analyst - Senior	126	1,984	249,984
CONNOR, RONALD	A15	Subject Matter Expert MPI	235	521	122,435
DE WINKLE, NATHAN	A17	Data Warehouse BI Analyst - Senior	126	1,984	249,984
FOTH, CASEY	A18	Subject Matter Expert MPI	235	521	122,435
FRIAR, BETH	A19	Data Warehouse BI Analyst - Senior	126	1,984	249,984
GAJBHIMKAR, SRIKANTH	A20	Data Warehouse Web Developer - Senior	108	1,984	214,272
GEORGE, AMY	A21	Data Warehouse Project Manager	134	992	132,928
GREGG, BILL	A22	Data Warehouse Developer - Senior	126	1,984	249,984
HOMER, DANIEL	A24	Data Warehouse Developer - Senior	126	1,984	249,984
HULL, BARRY	A25	Data Warehouse Architect	130	1,984	257,920
IFTODY, SEAN	A26	Subject Matter Expert MPI	235	521	122,435
JADOON, FAHD	A27	Data Warehouse BI Analyst - Senior	126	1,984	249,984
JIWATODE, YASHASWI	A12	Data Warehouse Web Developer - Senior	108	1,984	214,272
KAMINSKE, CHRISTIAN	A28	Data Warehouse BI Analyst - Senior	126	1,984	249,984
KREINER, META	A29	Subject Matter Expert Population Health	113	992	112,096
KRISHNAMOORTHY, RAJA	A30	Subject Matter Expert MPI	235	521	122,435
KRISTJANSON, KORBIN	A31	Subject Matter Expert MPI	235	521	122,435
LECLERC, NICK	A32	Subject Matter Expert MPI	235	521	122,435
LOGANATHAN, RAMESH	A33	Data Warehouse Database Administrator	126	1,984	249,984
MCNEIL, JEANNE	A34	Data Warehouse Project Manager	148	1,686	249,528
NADELLA, MALATHI	A35	Data Warehouse BI Analyst - Junior	126	1,984	249,984
OLSON, LAURA	A36	Data Warehouse Help Desk Analyst	126	1,984	249,984
RITTER-IRELAND, JENNY	A37	Data Warehouse BI Analyst - Senior	126	1,984	249,984
SABIR, MOHAMMAD	A38	Data Warehouse Developer - Senior	126	1,984	249,984
SHAH, AMI	A40	Data Warehouse Web Developer - Senior	108	1,984	214,272
SHAH, KUNAL	A41	Data Warehouse Architect	130	1,984	257,920
SINGH, VIDHIKA	A42	Subject Matter Expert MPI	235	521	122,435
SNYDER, JOHN	A43	Data Warehouse BI Analyst - Senior	126	1,984	249,984
SORRELLS, ANGEL	A44	Data Warehouse BI Analyst - Senior	126	1,984	249,984
SRIGIRI, HAVILAH	A45	Data Warehouse Web Developer - Senior	108	1,984	214,272
TANNEERU, VISHAL	A47	Data Warehouse BI Report Developer	108	1,984	214,272
TATE, JEFF	A48	Subject Matter Expert CHAMPS	167	1,984	331,328
TAYLOR, DION	A54	Subject Matter Expert MPI	235	521	122,435
THIRIVEEDHI, PRASANTH	A39	Data Warehouse Web Developer - Senior	108	1,984	214,272
TRAN, VINCENT	A49	Subject Matter Expert MPI	235	521	122,435
TRIPATHI, VINAYAK	A50	Data Warehouse Developer - Senior	126	1,984	249,984
VAIDYA, SUMEET	A51	Subject Matter Expert MPI	235	521	122,435
VAN, KENTON DEREK / TBD	A52	Data Warehouse BI Analyst - Senior	126	1,984	249,984
WITHERS, BETH	A53	Data Warehouse Designer/Modeler	126	1,984	249,984
Subtotals for HEALTH Services:				80,354	10,717,180

Appendix A (CONTINUED)**Table 1 - part 2**

Assigned Resource	Position Ref	Position	Contract Year 12/21/20 - 12/20/21		
			Hourly Rate	Est. Max Hours	Estimated Dollars
MDHHS Human Services					
DAVIS, JIM	B02	Subject Matter Expert Child Welfare	148	1,984	293,632
GUNDA, RAKESH	B05	Data Warehouse Developer - Senior ETL	126	1,984	249,984
JOURDEN, MELISSA	B06	Subject Matter Expert Child Welfare	148	1,984	293,632
MAHADEVAN, MURALI	B08	Data Warehouse Business Objects Architect	130	1,984	257,920
MARTIN, NICHOLE	B10	Data Warehouse BI Analyst - Senior	126	1,984	249,984
MUDDULURU, SWAROOP	B11	Data Warehouse Developer - Senior ETL	126	1,984	249,984
NANDURI, SRIRAM	B12	Data Warehouse Database Administrator	126	1,984	249,984
Subtotals for HUMAN Services:				13,888	1,845,120
TOTALS:				94,242	12,562,300

Payment will be made on a Time and Materials basis. DTMB will pay Contractor upon receipt of properly completed invoice(s) which shall be submitted to the billing address on the State issued purchase order not more often than monthly. DTMB Accounts Payable area will coordinate obtaining Agency and DTMB Program Manager approvals. All invoices should reflect actual hours worked by Contractor, and must be approved by the Agency and DTMB Program Manager prior to payment.

The estimated yearly contract hours and dollars will not preclude the State from utilizing the hours and dollars on an actual basis in amounts that vary from the estimates.

Appendix B

The table below was provided in Change Notice 33 as Attachment A and is unchanged. It is included here only for reference and convenience purposes. It provides not to exceed rates.

Position Type	Not To Exceed Hourly Rate ¹
Data Warehouse Project Manager	\$168.00
Data Warehouse Architect	\$188.00
Data Warehouse Data Designer/Modeler	\$163.00
Data Warehouse Developer Senior/Junior	\$158.00
Data Warehouse Business Intelligence Analyst Senior/Junior	\$158.00
Data Warehouse Database Administrator	\$163.00
Data Warehouse Business Intelligence Report Developer	\$158.00
Data Warehouse Help Desk Analyst	\$145.00
Data Warehouse Web Developer	\$125.00
Subject Matter Expert	\$350.00
Advanced Analytics Software Consultant	\$275.00
Principal Consultant	\$450.00

1. These are not to exceed rates that will be appropriately discounted if additional SOWs are issued.

COVID-19 Federal Provisions Addendum

This addendum applies to purchases that will be paid for in whole or in part with funds obtained from the federal government. The provisions below are required and the language is not negotiable. If any provision below conflicts with the State's terms and conditions, including any attachments, schedules, or exhibits to the State's Contract, the provisions below take priority to the extent a provision is required by federal law; otherwise, the order of precedence set forth in the Contract applies. Hyperlinks are provided for convenience only; broken hyperlinks will not relieve Contractor from compliance with the law.

1. Equal Employment Opportunity

If this Contract is a "**federally assisted construction contract**" as defined in [41 CFR Part 60-1.3](#), and except as otherwise may be provided under [41 CFR Part 60](#), then during performance of this Contract, the Contractor agrees as follows:

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the Contractor's legal duty to furnish information.

(4) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) The Contractor will comply with all provisions of [Executive Order 11246](#) of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(6) The Contractor will furnish all information and reports required by [Executive Order 11246](#) of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in [Executive Order 11246](#) of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in [Executive Order 11246](#) of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(8) The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of [Executive Order 11246](#) of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided*, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

2. Davis-Bacon Act (Prevailing Wage)

If this Contract is a **prime construction contracts** in excess of \$2,000, the Contractor (and its Subcontractors) must comply with the Davis-Bacon Act ([40 USC 3141-3148](#)) as supplemented by Department of Labor regulations ([29 CFR Part 5](#), "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"), and during performance of this Contract the Contractor agrees as follows:

- (1) All transactions regarding this contract shall be done in compliance with the Davis-Bacon Act (40 U.S.C. 3141- 3144, and 3146-3148) and the requirements of 29C.F.R. pt. 5 as may be applicable. The contractor shall comply with 40 U.S.C. 3141-3144, and 3146-3148 and the requirements of 29 C.F.R. pt. 5 as applicable.
- (2) Contractors are required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor.
- (3) Additionally, contractors are required to pay wages not less than once a week.

3. Copeland "Anti-Kickback" Act

If this Contract is a contract for construction or repair work in excess of \$2,000 where the Davis-Bacon Act applies, the Contractor must comply with the Copeland "Anti-Kickback" Act ([40 USC 3145](#)), as supplemented by Department

of Labor regulations ([29 CFR Part 3](#), "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"), which prohibits the Contractor and subrecipients from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled, and during performance of this Contract the Contractor agrees as follows:

- (1) Contractor. The Contractor shall comply with 18 U.S.C. §874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.
- (2) Subcontracts. The Contractor or Subcontractor shall insert in any subcontracts the clause above and such other clauses as FEMA or the applicable federal awarding agency may by appropriate instructions require, and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.
- (3) Breach. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a Contractor and Subcontractor as provided in 29 C.F.R. § 5.12.

4. Contract Work Hours and Safety Standards Act

If the Contract is **in excess of \$100,000** and **involves the employment of mechanics or laborers**, the Contractor must comply with [40 USC 3702](#) and [3704](#), as supplemented by Department of Labor regulations ([29 CFR Part 5](#)), as applicable, and during performance of this Contract the Contractor agrees as follows:

- (1) Overtime requirements. No Contractor or Subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the Contractor and any Subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and Subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.
- (3) Withholding for unpaid wages and liquidated damages. The State shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or Subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.
- (4) Subcontracts. The Contractor or Subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

5. Rights to Inventions Made Under a Contract or Agreement

If the Contract is funded by a federal "funding agreement" as defined under [37 CFR §401.2 \(a\)](#) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the

substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with [37 CFR Part 401](#), "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

6. Clean Air Act and the Federal Water Pollution Control Act

If this Contract is **in excess of \$150,000**, the Contractor must comply with all applicable standards, orders, and regulations issued under the Clean Air Act ([42 USC 7401-7671q](#)) and the Federal Water Pollution Control Act ([33 USC 1251-1387](#)), and during performance of this Contract the Contractor agrees as follows:

Clean Air Act

1. The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
2. The Contractor agrees to report each violation to the State and understands and agrees that the State will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency or the applicable federal awarding agency, and the appropriate Environmental Protection Agency Regional Office.
3. The Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA or the applicable federal awarding agency.

Federal Water Pollution Control Act

1. The Contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
2. The Contractor agrees to report each violation to the State and understands and agrees that the State will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency or the applicable federal awarding agency, and the appropriate Environmental Protection Agency Regional Office.
3. The Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA or the applicable federal awarding agency.

7. Debarment and Suspension

A "contract award" (see [2 CFR 180.220](#)) must not be made to parties listed on the government-wide exclusions in the [System for Award Management](#) (SAM), in accordance with the OMB guidelines at [2 CFR 180](#) that implement [Executive Orders 12549](#) ([51 FR 6370; February 21, 1986](#)) and 12689 ([54 FR 34131; August 18, 1989](#)), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than [Executive Order 12549](#).

- (1) This Contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the Contractor is required to verify that none of the Contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
- (2) The Contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower

tier covered transaction it enters into.

- (3) This certification is a material representation of fact relied upon by the State. If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to the State, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- (4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

8. Byrd Anti-Lobbying Amendment

Contractors who apply or bid for an award of **\$100,000 or more** shall file the required certification in Exhibit 1 – Byrd Anti-Lobbying Certification below. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

9. Procurement of Recovered Materials

Under [2 CFR 200.322](#), Contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act.

- (1) In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired—
 1. Competitively within a timeframe providing for compliance with the contract performance schedule;
 2. Meeting contract performance requirements; or
 3. At a reasonable price.
- (2) Information about this requirement, along with the list of EPA- designated items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.
- (3) The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

10. Additional FEMA Contract Provisions.

The following provisions apply to purchases that will be paid for in whole or in part with funds obtained from the Federal Emergency Management Agency (FEMA):

- (1) Access to Records. The following access to records requirements apply to this contract:
 - a. The Contractor agrees to provide the State, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.
 - b. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
 - c. The Contractor agrees to provide the FEMA Administrator or his

authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.

- d. In compliance with the Disaster Recovery Act of 2018, the State and the Contractor acknowledge and agree that no language in this contract is intended to prohibit audits or internal reviews by the FEMA Administrator or the Comptroller General of the United States.

(2) Changes.

See the provisions regarding modifications or change notice in the Contract Terms.

(3) DHS Seal, Logo, And Flags

The Contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval.

(4) Compliance with Federal Law, Regulations, and Executive Orders

This is an acknowledgement that FEMA financial assistance will be used to fund all or a portion of the contract. The Contractor will comply with all applicable Federal law, regulations, executive orders, FEMA policies, procedures, and directives.

(5) No Obligation by Federal Government

The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the State, Contractor, or any other party pertaining to any matter resulting from the Contract.”

(6) Program Fraud and False or Fraudulent Statements or Related Acts

The Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor’s actions pertaining to this contract.

Exhibit 1 - Byrd Anti-Lobbying Certification

Contractor must complete this certification if the purchase will be paid for in whole or in part with funds obtained from the federal government and the purchase is greater than \$100,000.

APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor, Optum, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

Signature of Contractor's Authorized Official

Name and Title of Contractor's Authorized Official

Date



STATE OF MICHIGAN CENTRAL PROCUREMENT SERVICES

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 **36**

to

Contract Number **071B1300138**

CONTRACTOR	OPTUM GOVERNMENT SOLUTIONS, INC.
	822 Centennial Way, Suite 100
	Lansing, MI 48917
	David Wieber
	517-327-2199
	david.wieber@optum.com
	CV0000961

STATE	Program Manager	Various	MULTI
	Contract Administrator	Matt Weiss	DTMB
		(517) 256-9895	
		weissm4@michigan.gov	

CONTRACT SUMMARY

PRE-QUAL PROGRAM DTMB DATA WAREHOUSE BUSINESS INTE

INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE
December 21, 2010	December 20, 2015	5 - 2 Year	December 20, 2019
PAYMENT TERMS		DELIVERY TIMEFRAME	
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING
<input type="checkbox"/> P-Card	<input type="checkbox"/> PRC	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

MINIMUM DELIVERY REQUIREMENTS

DESCRIPTION OF CHANGE NOTICE

OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
<input checked="" type="checkbox"/>	1-year	<input type="checkbox"/>		December 20, 2020
CURRENT VALUE	VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE		
\$134,192,866.00	\$0.00	\$134,192,866.00		

DESCRIPTION

Effective 12/21/2019, this Change Notice 36 supersedes and replaces Change Notice 35. The following amendment is hereby incorporated into the Contract combining the previously separate Health Services and Human Services Statement of Works (SOWs) into a single SOW. The value of this SOW is \$14,879,925.00. This Contract is also extended by 1-year. The revised Contract expiration is 12/20/2020.

No additional funding is needed at this time; existing funds are adequate to support this change.

All other terms, conditions, specifications, and pricing remain the same. Per contractor, agency and DTMB procurement.

**Program Managers
for
Multi-Agency and Statewide Contracts**

AGENCY	NAME	PHONE	EMAIL
DTMB	Dave Fox	517-241-6483	FoxD@michigan.gov



**MICHIGAN DEPARTMENT OF TECHNOLOGY,
MANAGEMENT AND BUDGET
DATA WAREHOUSE (DW) AND BUSINESS INTELLIGENCE (BI) SERVICES WORK
REQUEST and STATEMENT OF WORK**

This Work Request and Statement of Work (collectively the “Work Request”) are being issued to Optum Government Solutions, Inc. (“Optum” or “Vendor” or “Contractor”) under Optum’s Contract (071B1300138) with the Michigan Department of Technology, Management and Budget, Procurement, as established under the Data Warehouse and Business Intelligence Program.

Project Title: Michigan Department of Health and Human Services Data Warehouse	Period of Coverage or Extension Period: 12/21/2019-12/20/2020
Requesting Agency: Michigan Department of Technology, Management, and Budget (DTMB)	
DTMB Program Manager: David Fox	Phone: 517-930-0972 Email: foxd@michigan.gov
Agency Program Manager: Cynthia Green-Edwards	Phone: 517-284-1035 Email: EdwardsC@michigan.gov
DTMB Contract Administrator: Matt Weiss	Phone: 517-256-9895 Email: weissm4@michigan.gov
Contractor Contract Administrator: Jeanne McNeil	Phone: 517-993-0913 Email: jeanne.mcneil@optum.com

BACKGROUND:

MDHHS has been using the data warehouse since 1994 to direct policy, detect fraud, identify potentially valuable new initiatives, reduce error rates, calculate rates and more.

MDHHS utilizes the data warehouse for multiple purposes including mission critical functions. It functions as the department's decision support system. MDHHS uses data from the warehouse for rate setting for hospitals and managed and long term care providers. It is used to manage the performance of its partners (managed care providers and others) as well as programs within MDHHS. The Department has an extensive analytics effort to ensure that funds are being spent most effectively, including detecting and prosecuting fraud, and assure that Medicaid beneficiaries are getting the best care possible. In support of departmental management, the data warehouse is used to analyze trends, report on all aspects of Medicaid Eligibility, Child Welfare, and Child Support, and provides critical support to the budgeting process. Beyond this, the data warehouse provides significant analytical support for epidemiology and other studies. In addition, MDHHS will be adding new data sources and increasing their collaboration with other agencies along with adding new analytical tools.

MDHHS has relied on State and Contractor staff to provide data warehouse support and business intelligence services. These services include: providing data warehouse Extract, Transform and Load (ETL) services, application development, web development, business intelligence model, reporting, query development, help desk support, training and data analysis.

Health Services Data Warehouse –

MDHHS will be adapting and expanding its use of the data warehouse as it continues to implement new functionality and expand ongoing work in its Medicaid Management Information System (MMIS), known as CHAMPS (Community Health Automated Medicaid Processing System). CHAMPS efforts underway include federally mandated projects such as the Promoting Interoperability Program, Electronic Visit Verification (EVV), and the Transformed Medicaid Statistical Information System (T-MSIS). The Department expects to utilize the data warehouse for Health Information Technology/Health Information Exchange initiatives, Medicaid statistical data analysis and managed care rate setting, and the Integrated Care Dual Eligibles Project. The Promoting Interoperability Program and Michigan Health Information Network are American Recovery and Reinvestment Act of 2009 (ARRA) initiatives to improve health care quality, cost, efficiency, and patient safety through electronic exchange of health information. An important requirement of these ARRA initiatives requires the use of clinical data to improve patient care outcomes, which will involve significant research efforts using de-identified data. It is anticipated that much of the data will be stored in the data warehouse. To store and use of this ARRA initiative data will require significantly increased data warehouse capabilities.

The Project Augmentation delivery process will continue to be used for the Health Services enhancement projects, through the partnering of the following State and Contractor roles and delivery process, where the "Project Augmentation" process is defined as:

Roles:

- DTMB Program Manager as I/T owner
- MDHHS Agency Program Manager as business owner
- Contractor Contract Administrator as business intelligence services provider, i.e., providing business and I/T expertise

Delivery Process:

- The MDHHS Project Management Governance specifies and approves each Health Services project
- The DTMB Program Manager and MDHHS Agency Program Manager, with input from the Contractor Contract Administrator, work together to clarify Health Services project priorities via the State's PMO process
- The Contractor Contract Administrator and Contractor's Project Managers direct all Contractor resources and specify the staff roles and allocation levels for each approved project

Human Services Data Warehouse –

MDHHS will be adapting and expanding its use of the data warehouse as it completes the acquisition and transition to a new Child Welfare application, currently known as MiSACWIS. Additionally, there will be an

increased need to set up and implement self-service reporting in all of the major programs (Eligibility, Child Welfare, and Child Support). There will also be a transition effort in ETL services to move from “home-grown” scripting and data loads to using a COTS/GUI interface with more built in tracking and auditing capabilities.

The Staff Augmentation delivery process will continue to be used for Human Services positions, where, the “Staff Augmentation” delivery process is defined as:

Roles:

- DTMB Program Manager as I/T owner
- MDHHS Agency Program Manager as business owner
- Contractor Contract Administrator as business intelligence services provider, i.e., providing business and I/T expertise

Delivery Process:

- The MDHHS Project Management Governance specifies each Human Services project to the DTMB Program Manager
- Contractor staffing resources work under the direction of the DTMB Program Manager who specifies Contractor staff roles, priorities, and specific project allocation levels
- Contractor provides staffing resources with the DTMB defined skillset to work alongside DTMB resources under the direction of the DTMB Program Manager.

Standards:

- Contractor staff will be managed by DTMB including project assignment, workload, and technical direction/implementation as determined by the DTMB Program Manager.
- Contractor staff will be located with the DTMB manager and team to which they are assigned, as determined by the DTMB Program Manager.
- Projects on which Contractor staff are working will be managed by State project managers supplied by DTMB/EPMO.

DTMB and MDHHS will phase out Project Augmentation delivery and move to Staff Augmentation delivery to be consistent across both Health and Human Services Data Warehouse program support. This transition will be done incrementally and be completed by the end of this contract year (i.e. 12/20/2020), with timelines determined by the DTMB Program Manager. Contractor movements from Project Augmentation to Staff Augmentation will be documented through a Change Notice to the Contract by submitting a Change Request to Contractor that shall describe the specifics associated with any move from Project Augmentation delivery to Staff Augmentation delivery. Such Change Request shall include, without limitation (a) the resources and scope of work that would be subject to such move, (b) the timing of the desired move and (c) any other changes to this Work Request. Contractor shall not withhold or delay providing a response to such Change Request but instead shall provide a Change Request Proposal to the State within ten (10) business days following receipt of the Change Request. Cost will be subject to the rates as defined in this Change Notice. Once the details of the Change Request Proposal or any modifications thereto have been agreed upon, DTMB and Contractor shall enter into a replacement Work Request.

Description of Services:

Michigan Department of Technology, Management and Budget (DTMB) has issued this Work Request to obtain the following positions to support, maintain and execute enhancement projects of various sizes for the MDHHS Data Warehouse:

For this extension, 2 new SIGMA DOIT1 requests will be initiated to issue one DOIT1 for \$10,784,949 (from Table 1 - part 1) to fund The Health Services Data Warehouse, and a separate DOIT1 for \$4,094,976 (from Table 1-part 2) to fund the Human Services Data Warehouse for 12 months. Period of coverage to be 12/21/2019 to 12/20/2020. Both parties agree that this Work Request forms an integral part of a Change Notice to the Contract that provides for a 12 month extension of the Term of the Contract through 12/20/20.

For Health Services Data Warehouse (52 resources = 39 full-time and 13 part-time):

- Four (4) Data Warehouse Project Manager
- Two (2) Data Warehouse Architect
- One (1) Data Warehouse Database Administrator

- Ten (10) Data Warehouse Developers Senior
- Zero (0) Data Warehouse Developers Junior
- One (1) Data Warehouse Designer/Modeler
- One (1) Data Warehouse Business Intelligence Report Developer
- Nine (9) Data Warehouse Business Intelligence Analysts Senior
- Two (2) Data Warehouse Business Intelligence Analysts Junior
- One (1) Data Warehouse Help Desk Analyst
- Eight (8) Data Warehouse Web Developers Senior
- Zero (0) Data Warehouse Web Developers Junior
- Thirteen (13) Subject Matter Experts

For Human Services Data Warehouse (16 full time resources):

- Two (2) Data Warehouse Subject Matter Expert – Child Welfare
- One (1) Data Warehouse Database Administrator
- Nine (9) Data Warehouse Developers Senior
- One (1) Data Warehouse Designer/Modeler
- Two (2) Data Warehouse Business Intelligence Analysts Senior
- One (1) Data Warehouse Business Objects Architect

This Work Request includes a total of sixty (68) Full Time Equivalents (FTEs), consisting of 55 Full-time and 13 part-time resources. The total number of FTEs may be increased or decreased throughout the life of this Work Request, based on department needs and available funding. The fifty-two (52) resources on the Health Services Data Warehouse and sixteen (16) resources on the Human Services Data Warehouse will continue to augment the Department of Technology, Management, and Budget (DTMB) Agency Services with development, support, maintenance and enhancements to critical projects for the Michigan Department of Health and Human Services (MDHHS) DW.

It is the State's intent to establish this Work Request for BI Services to be provided to DTMB, in support of MDHHS, for a time period defined above as the Extension Period.

The work performed via this Work Request will be on a time and materials basis.

PROJECT OBJECTIVE:

The objective of this Work Request is to assist DTMB with the development, support, maintenance and enhancement of MDHHS Data Warehouse applications, which is an on-going activity prompted by changes in federal and state regulations, evolving business needs, opportunities for improving business processes, continued software and hardware upgrades, and break fixes.

SCOPE OF WORK:

- The scope of this Work Request is to provide Data Warehouse Business Intelligence (BI) Services on an as needed basis to support, maintain, and execute enhancement projects of various sizes for the MDHHS Data Warehouse set forth in this Work Request.
- Develop and maintain Data Warehouse BI applications that support MDHHS's day-to-day business operations.
- Resources will become familiar with DTMB personnel roles, DTMB supporting MDHHS's business processes, and DTMB's State Unified Information Technology Environment (SUITE) and DTMB technical standards, controls, and procedures.

Required Skill Category Requested:

1. Data Warehouse Project Manager
2. Data Warehouse Architect
3. Data Warehouse Database Administrator
4. Data Warehouse Developer Senior
5. Data Warehouse Developer Junior

6. Data Warehouse Designer/Modeler
7. Data Warehouse Business Intelligence Report Developer
8. Data Warehouse Business Intelligence Analyst Senior
9. Data Warehouse Business Intelligence Analyst Junior
10. Data Warehouse Help Desk Analyst
11. Data Warehouse Web Developer Senior
12. Data Warehouse Web Developer Junior
13. Subject Matter Expert
14. Data Warehouse Business Objects Architect

TASKS:

REQUIRED TASKS

- The Contractor must attend security awareness training and any other relevant security and or confidentiality training requested by MDHHS and/or DTMB. Contractor staff must sign appropriate agreements or training certifications.

EXAMPLES OF ONGOING and UPCOMING CONTRACTOR TASKS

(these tasks may change based on direction from the State)

Health Services Data Warehouse

Contractors will provide support on a time and materials basis for the following Decision Support System (DSS) Advanced Planning Document (APD) Activities.

Detailed tasks for each Activity are listed in the APD for each fiscal year.

1. Develop Production Reports for the DW

- The Medicaid Enterprise relies on the DW for the majority of its production reporting, including reports needed for certification of federally funded source systems, extracts, and other production reports used to manage and evaluate MDHHS programs. This includes creation of new reports to align with new initiatives and/or program areas and enhancements to existing reports to correspond with source system changes. Users of these reports include, but are not limited to, MDHHS management and staff, the State legislature, federal agencies, counties, and providers.
- Production report development includes the following general tasks:
 - Map report data elements to corresponding data fields in the data warehouse
 - Conduct requirements gathering sessions to finalize requirements with MDHHS users
 - Develop, test and implement updated and new report versions

Examples of Specific Tasks include:

- Add or rewrite production reports in response to changes in CHAMPS, Michigan Statewide Automated Child Welfare Information System (MiSACWIS), Bridges, Michigan Child Support Enforcement System (MiCSES) and the corresponding data warehouse models. This includes reports needed for ongoing certification of CHAMPS, the T-MSIS extracts, and other production reports used to manage and evaluate Medicaid programs.
- Create and enhance production reports, queries and related data extracts as a result of:
 - New initiatives and programs (such as: Opioid Health Home; Section 298 of PA 107 of 2017 Behavioral Health Integration Pilots; GF Funding Methodology Reporting; nursing home Level of Care Determination [LOCD]; and Network Adequacy Reporting expansion)
 - Change in federal requirements (such as: Federal Section 1115 Pathway to Integration and Mosaic Waiver Implementation; and annual updates to CMS-416 and CMS-372 reports)
 - New activities/business requirements (such as: MMA/TBQ rewrite and Integrated Service Delivery; and reports as a result of Medicaid Eligibility and Enrollment changes)
- Enhance production reports to provide online access to electronic versions of reports
- Develop, test and implement additional performance measures as needed
- Create dashboards for display of measures summary data

- Expand T-MSIS to accommodate new federal requirements and new business requirements
- Generate and report measure rates to meet Medicaid business needs
- Develop new criteria and functionality for Performance Monitoring Reports to accommodate new business needs
- Create and/or update programs to support Payment Error Rate Measurement (PERM) Audit. (Create and submit data for CMS Review Cycle 2020 if requested.)
- Evaluate and implement additional reports needed to support the Medicaid Enterprise

2. Provide Updated Analytic, Reporting, Data Mining, and Web-Based Analytic Tools and Enhanced Analytic Capability

- The MDHHS vision continues to include the use of ad-hoc analytics, predictive analytics, Online Analytical Processing (OLAP), and data mining tools. The OLAP and data mining tools are needed to examine data from multiple perspectives, which will allow for the identification of emerging trends and cost savings. This allows MDHHS to answer complex questions by performing multi-dimensional analysis across data sets and programs and to drill up and down through successive layers of detail to uncover trends, relationships, and patterns for improved decision-making.
- Symmetry software will be used as part of an effort to improve utilization of administrative data for the purposes of quality of care monitoring, program reporting, risk assessment and coordination of care for beneficiaries, such as Healthy Michigan Plan, Medicaid, Children's Special Health Care Services and MI Health Link. The State will be able to more efficiently calculate and report quality of care measure rates for a wider selection of chronic and episodic conditions, as well as preventive activities (e.g., screenings) using evidence-based specifications produced and updated annually by national quality organizations. The State will also have the capability to use prospective analytics for the purposes of risk assessment.
- General Tasks in this activity include:
 - Upgrade Business Objects, BI Query, and Crystal Reports to support future needs of MDHHS. Utilize advance features of tool sets to include additional trusted data sources.

Examples of Specific Tasks include:

- For Symmetry Software:
 - Implement configuration and/or data input modifications as needed as a result of changes and refinements to business requirements
 - Expand result set to store additional results over time and to accommodate additional business needs
 - Develop additional queries to analyze results data and identify new areas of potential focus
 - Generate measure rates as requested for specific business needs
 - Transition additional measures to Symmetry, eliminating manually-generated, custom-coded measures
 - Explore and implement additional measures that add value to the Medicaid program
 - Assist in integrating beneficiary-level information into CareConnect360 and other applications
 - Perform miscellaneous ad hoc analysis as requested for specific business needs
 - Apply patch releases as needed to provide additional functionality and stay current with CMS (and other national standard) code sets and third party vendor support
- For BI Query:
 - Apply patch releases as needed to provide functionality needed by MDHHS and stay current with third party vendor support
- For Business Objects:
 - Apply patch releases as needed to provide additional functionality and stay current with third party vendor support
- Evaluate tools to align technology framework with MITA standards

3. **Identify and Load Additional Data Sets on the Data Warehouse**

- As new systems and data sources are developed that support the Medicaid Enterprise, they will be integrated with the data warehouse and existing MDHHS data. This data could be Medicaid-specific or could be non-Medicaid, but enhances the Medicaid program by increasing quality of care, improving outcomes, or reducing costs.
- The process to add these data sets includes: defining requirements, establishing a process to maintain history, developing load programs, establishing reconciliation processes with source systems, and integrating new data with existing data in the BI Query models.

Examples of Specific Tasks include:

- Add data needed to enhance the Medicaid Enterprise and to support:
 - New initiatives and programs, including:
 - Healthy Michigan Program (HMP3)
 - State Innovation Model (SIM)
 - Integrated Service Delivery (ISD) – e.g., add Success Plans, Needs Assessments from the ISD portal
 - Health Information Exchange (HIE)
 - Changes in Federal requirements
 - New activities and business requirements
- Add data to the Medicaid Enterprise, including:
 - Clinical Data and other data from the health information exchange, including continued analysis and development on Clinical Quality Measures to complete QRDA Category III summary data work, and expand to Category I detail data.
 - Admission, Discharge and Transfer (ADT) data – continue analysis of messages to determine which types and which content will be used for specific business purposes to benefit the Medicaid program (e.g., identify use cases and data needs, and implement corresponding solutions using this data; implement solutions to make the data available and usable to business users and applications)
 - Opioid-related data, including surveillance data and data needed for predictive indicators of high-risk situations and triggering of harm reduction strategies
 - Data related to Section 298 of PA 107 of 2017 Behavioral Health Integration Pilots
 - Data related to Federal Section 1115 Pathway to Integration and Mosaic Waiver
 - Electronic Visit Verification (EVV)-related data
 - Customer Service and Contract Management Database
 - Direct Care Worker Wage Data
 - State Hospital Census and Waitlist Data
 - Individual Placement and Support Data for Medicaid beneficiaries
 - Network Adequacy Monitoring-related data
 - Consolidated Clinical Document Architecture (CCDA) data related to Dual Eligible population, for incorporation into CareConnect360
 - FlexR data – the Flint Health Coalition is partnering with Michigan State University to create a registry for Flint Lead victims, and will need to integrate with MDHHS data; also includes Genesee Health Coalition
 - Data related to partnering opportunities with community based groups, such as Community Health Indicator Reports (CHIRS), Flint local groups
 - Social determinants of Health
 - Jail data for coordination and notification when beneficiaries with Substance Use Disorder (SUD) or behavioral health issues are detained (e.g., trigger CMH/PIHP activity to coordinate continuity of care)
 - MiPAD (Michigan Psychiatric Admission Data), to integrate with Medicaid and inpatient bed site data
 - Inpatient bed site data
 - Education data
 - STARLIMS data
 - HIV lab data
 - Level of Care Determination data from new/replacement source

- Integrated Care Bridge Record (ICBR) data. ICBR provides a comprehensive and detailed overview of the health of a member dually enrolled in Medicaid and Medicare and is shared between the care team members: Integrated Care Organizations (ICOs); Prepaid Inpatient Health Plans (PIHPs); and Integrated Care Team (ICT) to allow for person- centered care coordination. Storing the data in the data warehouse will provide a central location for retrieving the most recent and up-to-date member care plan.
- Care Plan Exchange for Children in Foster Care. Build on the ICBR infrastructure to facilitate exchange of electronic care plans between Eligible Providers and Medicaid Providers, for children in foster care (approximately 14,000). The care plans will include data extracted from CC360 (see Activity 5 for more information about CC360) and from the medical passport information housed in the Michigan Statewide Automated Child Welfare Information System (MiSACWIS).
- Newborn Screening data
- Michigan Disease Surveillance System (MDSS) data to improve disease tracking and monitoring of Medicaid beneficiaries through the integration of MDSS and the MDHHS data warehouse
- Military and Veterans Data
- Oral Health Initiatives data, including Michigan's Dental Registry (MiDR). MiDR data includes oral information and history of preventative oral health services provided to Medicaid patients
- Human Services data. Adding and/or establishing access to additional Human Services data through a data warehouse view (e.g., Poverty/Income, Race/Ethnicity)
- Detail-level Healthcare Effectiveness Data and Information Set (HEDIS) data from Medicaid health plans for use in evaluating performance measures
- Child Welfare Data, including Native American Tribal data and Statewide Automated Child Welfare Information System (SACWIS) data, including Juvenile Justice
- Cancer Registry data, including the implementation of Phase 1 of an automated load from the source system to the data warehouse to provide access to cancer case information on Medicaid beneficiaries and other MDHHS programs securely and electronically
- Corrections data
- Michigan Center for Educational Performance and Information (CEPI)/Education data
- Workforce Development Authority data
- Homelessness data
- CMH/ Active Care Relationship Service (ACRS) data
- Behavioral Health-related data
- Data sources needed for use by external systems that query data directly from the data warehouse, including the Core Fraud System and Third-Party Liability system (TED)
- Provider licensing data from the Department of Licensing and Regulatory Affairs for use in identifying and de-duplicating provider data
- Evaluate other data sources and add those that will benefit the Medicaid Enterprise.

4. Enhance Existing Data Loads in order to Stay Current with Corresponding changes to Source Systems, New Policies and Technologies

- As MDHHS rewrites source systems to align with new requirements and technology, the data warehouse will require corresponding enhancements in order to load and store new and updated data elements and provide query and reporting access to the data. Source system changes may be driven by federal or state initiatives. This activity also includes the development needed to update existing data warehouse load processes to include additional data for the Medicaid Enterprise, including adding source system data elements to an existing data warehouse load, even when that data was not newly added to the source system

Examples of Specific Tasks include:

- Rewrite existing data warehouse loads as a result of:
 - Source system rewrites and replacements
 - Source system additions and changes, including instances where additional data fields are available from an existing source system
- Add Maternal Infant Health Plan (MIHP) data as source system expands
- Expand Death Record load to move to real-time updates

- Develop automated process to load birth records from the Birth Registry System to replace current manual process. This will improve accuracy, efficiency and timeliness of data loads
- Develop automated process to load Michigan Childhood Lead Poisoning Surveillance (MiCLPS) data from the source system (replaced legacy source system with replacement source system, but process is not yet automated – direct feed will be implemented in FY19)
- Create reconciliation processes between the data warehouse and existing source systems to ensure accuracy and completeness of data in the warehouse
- Update and enhance GLP to keep current with changes to existing data warehouse jobs, evaluate opportunities for enhancements to improve efficiency and accuracy, and implement those that will benefit the Medicaid Enterprise
- Evaluate potential source system changes as a result of new policies and technologies, and implement those that will benefit the Medicaid Enterprise
- Source system updates to accommodate enhancements to new financial system (SIGMA)
- Evaluate other ETL Tools such as IBM DataStage to improve efficiency and standardization on toolsets with DTMB.

5. Develop Web Applications to Support Medicaid Programs and Processes

- This activity will develop and enhance data warehouse web applications to streamline processes in support of Medicaid programs, automate workflows, provide integrated data delivery, and provide tracking and reporting of Medicaid beneficiaries and programs.
- Users of these web applications include, but are not limited to: MDHHS; Medicaid Health Plans; Prepaid Inpatient Health Plans (PIHPs); Community Mental Health organizations (CMHs); and Integrated Care Organizations (ICOs).

Examples of Specific Tasks include:

- Design, develop, and implement new web applications and modules to support the Medicaid Enterprise
- Design, develop, and implement modifications to existing web applications to accommodate new business needs, such as adding data sets and new functionality. This also includes adding additional phased implementations, such as integration with Symmetry measures. Some specific examples include:
 - Beneficiary Monitoring Program (BMP):
 - Geocoding for Pharmacies
 - Addition of PIHPs and CMHs
 - Enhancements, such as addition of Symmetry measures (e.g., episodes, risks) for BMP research
 - Waiver Support Application (WSA):
 - Implementation of Brain Injury Waiver within WSA, once approved by CMS
 - Implementation of new policies/procedures in CWP and SED Waivers
 - CareConnect360 (CC360):
 - Expand CC360 functionality, including expanded triggers/notifications to alert care coordinators when certain events occur or specific criteria exists
 - Expand CC360 user access and implement corresponding security for additional areas, including Population Health staff and Opioid project staff.
 - Add data sets to CC360, such as Homelessness data, Medicare claims (currently only available to ICO care coordinators), immunizations, expanded ADT data elements, death detail (e.g., cause of death, date of death), ISD (e.g., Success Plans and Needs Assessments; see Activity 3), new summary/beneficiary level Symmetry data, CCDA data for Dual Eligible population, Opioid-related data, data to align with MHP/PIHP contract metrics (e.g., new non-FFS methods of payment), data for coordination with community based groups, jail data, Medical Passport data, and MIPAD data.
 - Create web services to be called by other applications; includes migrating existing CC360 code to web services modules
- Design, develop, and implement enhancements to align with new initiatives and programs, changes in Federal requirements, and new activities and business requirements, such as rate changes and criteria updates

- Develop and implement Disaster Recovery process for web applications
- Add data needed to support functionality within web applications such as Episodes, Risk, and Predictive Analytics
- Evaluate opportunities for new or enhanced web applications or modules and implement those that will benefit the Medicaid Enterprise, for instance, incorporation of new data added in the data warehouse, family support and family preservation opportunities, and comparisons across programs.

6. Create and Manage Metadata for the MMIS IT Architecture, and Provide BI-Administration Capability for Management of Security Data and Models

- Metadata and field mapping will provide information on the descriptions and uses of the data, flow of the data through the system, and relationship to the Community Health Automated Medicaid Processing System (CHAMPS) and other systems. These processes will also provide information on the transformation and cleansing procedures as well as an assessment of data integrity. This information will be especially useful to analytic staff that may not be familiar with the operational detail of the data.
- This Activity includes implementation of enhanced security measures and access processes to support policies, technologies and audit requirements, including password rules and expiration timeframes, data encryption, and enhanced Roles and Profiles. This work will leverage new capabilities that become available through upgrades to existing software.

Examples of Specific Tasks include:

- Develop and implement new capabilities as a result of the Teradata software releases
- Assess and implement Security solutions
- Create new roles/access/security for new initiatives and programs, changes in federal requirements, and new activities or business requirements
- Identify, design, develop, test and implement audit controls and solutions to address findings of data warehouse audits, including Information Security Improvement Plan (ISIP)
- Perform remediation activities related to completion of the System Security Plan
- Test and implement Disaster Recovery plan for data warehouse; update/develop new Disaster Recovery plans/processes based on Disaster Recovery Test
- Create new models as new data is added as a result of new initiatives and programs, changes in Federal requirements, and new activities or business requirements
- Evaluate and implement enhancements to data warehouse operability and access that will benefit the Michigan Enterprise

7. Provide Additional Data Integration across Program Areas and Continue to Enhance Architecture to Align with MITA Initiative

- This activity will enhance the data warehouse architecture by developing data exchanges between the data warehouse and MDHHS partner organizations such as health plans and the Michigan Health Information Network (MiHIN). By making additional data available to partner organizations, these secure data exchanges promote efficient and effective data integration and sharing for the purpose of improving outcomes for MDHHS beneficiaries.
- This activity will expand the use of the Cause-and-Effect Model to assess other events that may be contributing to successes or shortfalls in programs, interventions, and outcomes. This will also allow MDHHS to collaborate with other departments or agencies to improve outcomes. This also enhances architecture to align with the Medicaid Information Technology Architecture (MITA).
- Finally, this activity will develop and enhance solutions to integrate MDHHS data across program areas, data sources, and other departments and agencies to provide improved ability to identify cross-population, and therefore allow improved tracking and analysis of MDHHS beneficiaries. Examples include creation of BI Query models to integrate data across programs, creation of de-identified databases to allow reporting and analysis of data across programs, creation of event-based models to allow longitudinal reporting and analysis of data across programs, creation of data marts, and creation of Views to provide access to data across program areas. This also enhances architecture to align with

MITA.

- Note that this does not include changes to existing data loads needed to integrate or share data across programs, such as the addition of new data elements to an existing data load, which is covered in Activity 4, “Enhance Existing Data Loads”.

Examples of Specific Tasks include:

- Enhance the Cause-and-Effect model previously developed for State Homeless Analysis Data online Warehouse (SHADoW). This de-identified database of homeless client service activity allows authorized personnel at homeless and health and human service provider agencies to share client service delivery activity information. The data is used to analyze inter-organizational datasets for the purpose of investigating and understanding the relationship between public policy and various Medicaid programs in Michigan.
- Assess events that may be contributing to successes or shortfalls in programs, interventions, and outcomes. This allows MDHHS to collaborate with other departments and agencies to improve Medicaid outcomes.
- Expand integration of MDHHS Eligibility data with Michigan Child Support Enforcement System (MiCSES), MiChild Eligibility, Vital Records, Third-Party Liability (TPL), and Central Paternity Registry (CPR) to assure appropriate insurance coverage. This permits identification and source system data updates or corrections.
- Design, develop, and implement solutions to integrate data across program areas, data sources, and departments and agencies to improve the ability to identify cross-populations, improve health of Medicaid beneficiaries, identify needed services, and provide analytic ability. Examples include:
 - Opioid-related data, including surveillance data and data needed for predictive indicators of high-risk situations and triggering of harm reduction strategies
 - Data related to Section 298 of PA 107 of 2017 Behavioral Health Integration Pilots
 - Data related to Federal Section 1115 Pathway to Integration and Mosaic Waiver
 - Electronic Visit Verification (EVV)-related data
 - Customer Service and Contract Management data
 - Direct Care Worker Wage Data
 - State Hospital Census and Waitlist Data
 - Individual Placement and Support Data for Medicaid beneficiaries
 - Network Adequacy Monitoring-related data
 - CCDA data related to Dual Eligible population, for incorporation into CareConnect360
 - FlexR data – the Flint Health Coalition is partnering with Michigan State University to create a registry for Flint Lead victims, and will need to integrate with MDHHS data; also includes Genesee Health Coalition
 - Data related to partnering opportunities with community based groups, such as CHIRs, Flint local groups
 - Social determinants of Health
 - Jail data for coordination and notification when beneficiaries with SUD or behavioral health issues are detained (e.g., trigger CMH/PIHP activity to coordinate continuity of care)
 - MiPAD (Michigan Psychiatric Admission Data), to integrate with Medicaid and inpatient bed site data
 - Inpatient bed site data; link with SUD data
 - Education data
 - STARLIMS data
 - HIV lab data
 - Level of Care Determination data from new/replacement source
- Design, develop, and implement additional Address Cleansing functionality for data sources
- Design, develop, and implement new data marts or expansion of existing data marts, including:
 - Expansion of Measures data mart to store new results over time, and to accommodate additional business needs
 - Clinical data repository, for use in Medicaid projects
- Upgrade existing ETL processes to improve data load processes, reduce development and maintenance costs and risk, and minimize differences between data warehouse and source system data

- Expand use of MI Health Link geo mapping. This can have many uses, including validating the appropriate network of providers within a given time and distance.
- Evaluate and expand integrations with HIE (Health Information Exchange), including interactions with the MDHHS Data Hub and MiHIN (activities that are not covered under other APDs, Advanced Planning Documents). This includes the creation of a Department of Licensing and Regulatory Affairs (LARA) file containing Provider enrollment data to send to MiHIN for inclusion in the Health Directory
- Evaluate and implement integration solutions that will benefit the Medicaid Enterprise

8. Provide onsite analytic development for the various program models, and analytic tools

Examples of Specific Tasks include:

- Update CHAMPS model-specific training manuals
- Develop and deliver comprehensive training to educate end users on the use of the data based on updated CHAMPS and BRIDGES requirements
- Provide comprehensive training to help end users understand the business, and educate them on the relationship between the CHAMPS data and the Medicaid program. This will include development of materials for instructor-led classroom training as well as development of web-based training.
- Develop and deliver comprehensive training to educate developers on updated DW structures and the use of data based on CHAMPS and BRIDGES requirements
- Provide comprehensive training to help developers understand the business, and educate them on the relationship between the CHAMPS data and the Medicaid program
- Provide first-line Help Desk Support to answer end user and developer questions related to the newly defined data models
- Provide advanced analytic support and development at a level above the typical user's business and technical knowledge

9. Enhance the Data Warehouse as a Result of CHAMPS, Bridges and MiSACWIS in order to Stay Current with Corresponding Changes to Source Systems, New Policies and Technologies

- This activity will implement changes to database structures, models, views, reconciliation processes, and Extract, Transform, Load (ETL) processes for both Staging and Production tables, as a result of changes to the source systems. These changes will include derived fields and any work related to corresponding software upgrades. For example, the Community Health Automated Medicaid Processing System (CHAMPS) subsystems include:
 - Provider (PE)
 - Eligibility and Enrollment (EE)
 - Contracts Management (CM)
 - Claims and Encounters (CE)
 - Reference (BA)
 - Lookup Tables (LU)
 - Financials (OFIN)
 - Third Party Liability (TPL)
 - Master (MT)
 - Prior Authorization (PA)
 - Medicaid Electronic Health Record Incentive (EHR)
- The activity will also develop and enhance processes to extract data from the data warehouse to be used for on-going production data loads to source systems. These data are used for purposes such as adjudicating claims in CHAMPS, determining eligibility in Bridges, such as extracts for Waiver enrollments, mental health eligibility, and trusted data sources for eligibility determination.
- Finally, the activity will implement changes to the Eligible Months data mart as a result of changes to source systems.

Examples of Specific Tasks include:

- Design, develop, and implement enhancements to align with new initiatives and programs, changes in federal requirements, and new activities or business requirements, such as new Waivers, Healthy Michigan Plan enhancements, Dual Eligibles, Clinical Quality Measure Recovery and Registry Service (CQMRR), Juvenile Justice, Medical Passport, Level of Care Determination Passive Redetermination, Dental Choice, Provider Screening/Ownership, Electronic Visit Verification and Opioid Health Home. Source system updates to accommodate these changes result in corresponding changes to the data warehouse, including:
 - Data warehouse Load programs (ETL) and processes
 - Data warehouse views
 - Database structures
 - Data models
 - Data conversion
 - BI Query models
- Design, develop, and implement reconciliation programs to validate completeness and accuracy of data between CHAMPS and data warehouse (new subsystem). Also make required changes to existing reconciliation programs and create new reconciliation programs as needed.
- Develop and implement updates and expansions to Eligible Months Table to reflect changes in CHAMPS and Bridges, such as:
 - HMP3
- Additions and changes to Medicaid Benefit Plans
 - LOCD replacement
- Review and evaluation of existing data elements
 - Data mapping and implementation of identified enhancements
- Evaluate other changes related to this Activity, and implement those that benefit the Medicaid Enterprise

10. Enhance the Program Integrity Process

- Healthcare fraud significantly impacts the Medicaid program by using up valuable public funds needed to help vulnerable children and adults access health care. This activity will support the enhancement of the Program Integrity (PI) process through the design, development, and implementation of data warehouse solutions to support identification and investigation of fraud related to Medicaid and other MDHHS programs.
- This activity also includes integration with Michigan's Core Fraud System.

Examples of Specific Tasks include:

- Review and update newly developed queries by PI staff to improve efficiency and ensure data completeness and accuracy
- Expand database and processes to support PI, as needed to accommodate PI business needs
- Participate in ongoing project meetings to gather requirements for future design, development, and implementation solutions
- Create complex queries and analytics for use by PI staff for fraud identification and investigation
- Enhance or create new databases and load processes to store data received during investigations and link that data to Claims & Encounter data
- Design, develop and implement Ad Hoc reporting tables in the data warehouse for PI purposes
- Integrate further with i-Sight (case management system)
- Evaluate other Program Integrity-related activities and implement those that benefit the Medicaid Enterprise

11. Build Systems to Load and Access Pharmacy Data on the Data Warehouse

- Pharmacy data is loaded directly to the data warehouse and thus does not go through Michigan's MMIS, Community Health Automated Medicaid Processing System (CHAMPS). This includes the pharmacy claims processed by the Medicaid program's Pharmacy Benefit Manager (PBM), pharmacy encounters

submitted by Medicaid Health Plans and Prepaid Inpatient Health Plans (PIHPs), supporting data (National Drug Code, or 'NDC', CMS, rebates, etc.), Medicaid Managed Assistance/Territory Beneficiary Query (MMA/TBQ) processes, extracts to Health Plans, and other corresponding activities.

- This activity includes all the work related to bringing the data into the data warehouse (e.g., creating database structures, models, views, data load programs, adjudication logic, error/return processing), integrating it with other MDHHS data, particularly CHAMPS, and creating queries, reports, extracts and applications to support the Pharmacy program.

Examples of Specific Tasks include:

- Design, develop, and implement modifications to align with new initiatives and programs, changes in federal requirements, and new activities or business requirements
- Evaluate other opportunities for improvements to Pharmacy processes and implement those that will benefit the Medicaid Enterprise

12. Develop Web-Based Security Application

- The Database Security Application (DSA) foundation provides an automated web-based workflow and corresponding database for requesting and approving access to MDHHS systems such as data warehouse, FileNet, and Community Health Automated Medicaid Processing System (CHAMPS).
- This Activity includes:
 - Enhancements to technical framework
 - Creation of new "forms" within DSA for requesting access to MDHHS systems
 - Enhancements and additional functionality to existing forms
 - Development of training modules, both web-based and training manuals
 - Development of other necessary end user training materials

Examples of Specific Tasks include:

- Design, develop, and implement additional forms within DSA for requesting access to additional MDHHS systems, such as:
 - Health Services Data Warehouse Developer Access
 - Health Services Data Warehouse Expedited Access
 - Michigan Statewide Automated Child Welfare Information System (MiSACWIS) Data Warehouse
 - MiSACWIS source system
 - Bridges
- Add functionality and implement modifications to existing forms within DSA, such as:
 - Automated provisioning for WSA forms
 - Develop additional backup functionality
 - Develop new Admin role functionality to accommodate growth and expand outside of Compliance
- Integrate user information from non-DSA provisioning systems/databases with data in DSA. This will provide MDHHS with a complete picture of an individual's access across systems, via a single source application.
- Integrate DSA Issue Tracks to JIRA system, to allow more sophisticated task tracking
- Development to accommodate new access controls/security requirements in source systems
- Development to accommodate access to additional data sets and/or additional source system roles
- Develop process to compare approved level of access in DSA with actual access in source system
- Develop process to manage security of employee notifications from Human Resources (departures, position transfers, new hires) and integration with the Human Resource application. Actions include terminations of access, alerts to system owners, notifications to former and new managers, etc.
- Develop processes to integrate DSA into additional systems, so that when a new user logs into a system, DSA is automatically invoked from that system, rather than the user having to log into DSA separately to submit a request for access
- Evaluate other DSA-related opportunities and implement those that will benefit the Medicaid Enterprise

13. Develop and Configure the Master Person Index (MPI) and Provider Index (PI), and retire Unique Client Identifier (UCI)

- IBM InfoSphere will be used to build the Master Person Index (MPI) and the Provider Index (PI). IBM InfoSphere accepts incoming data and uses logic, rules, and algorithms to compare the incoming data with existing records. The comparisons produce scores that indicate which records are likely to represent the same entity. IBM InfoSphere then links incoming and existing records that meet or exceed a specified threshold.
- IBM InfoSphere will be configured for multiple indices: beneficiaries, providers, health plans, and other health care entities.
- Prior to using IBM InfoSphere, MDHHS used the Unique Client Identifier (UCI), which was developed in 2001 using custom code from the US Census. The UCI links person-level records from one database to another by evaluating the available data elements such as name, address, IDs (beneficiary, client, and consumer) to determine if a match exists. When a match exists, a UCI is assigned that is used in all the databases. Once linked, they remain linked unless manually removed.
- Although UCI is being replaced with IBM InfoSphere, a Commercial Off-the-Shelf (COTS) product, MDHHS is still using UCI to validate the MPI. However, MDHHS is planning the transition to fully retire UCI.
- There are two primary methods for Data Sources to interface with MPI:
 - Batch process through the Enterprise Data Warehouse (EDW) – facilitates secure data sharing with minimal need for sending data between parties (data can be shared via service account access)
 - Real-time through the Health Services Enterprise Service Bus (ESB) – allows users to control their interactions with MPI and provides real-time sharing opportunities
- Adding a new Data Source to MPI includes the following activities:
 - Establish appropriate Data Sharing Agreements
 - Establish connections to the ESB or EDW and MPI
 - Configure source in MPI
 - Initial data load
 - Initial data analytics
 - Onboard Source Data Stewards and Owners to MIDSP
 - Work described in this Activity regarding integration with other systems is limited to development at the MPI/PI and funding is requested in this APD. Corresponding effort at the other system will be described and the funding requested in a separate APD, appropriate for that system.

Examples of Specific Tasks include:

- Expand Service Offerings. The following MPI service offerings extend the existing platform to centralize the data matching process for MDHHS. This simplifies data sharing, allowing different areas of MDHHS to more easily collaborate. The expanded service offerings provide additional integration options for source systems, improve the quality of data within the MPI, and facilitate better sharing between MDHHS and other organizations. Expanded service offerings include:
 - Complete Algorithm Review and Enhancement to meet additional business needs identified in Phase 1
 - Develop new MPI functionality to support:
 - Merges and unmerges
 - Other performance improvements
- Onboard new Data Sources and Users. Each additional data source improves linking and matching for Medicaid and contributes to providing a centralized, integrated 360-degree view of an individual. Additional MPI data sources planned for FY19-FY20 include:
 - Public/Behavioral Health Systems. This will allow the Medicaid Program to identify which beneficiaries are also included in other registries, in order to analyze trends and provide targeted outreach. Public/Behavioral Health Systems data to be added includes:
 - Michigan Disease Surveillance System (MDSS)
 - Maternal Infant Health Program (MIHP) – [Initiate Integration Planning]
 - HIV Systems
 - HIV Laboratory Management System (HIVLIMS)

- Enhanced HIV/AIDS Reporting System (EHARS)
- Michigan Drug Assistance Program (MIDAP)
- Develop Strategic Plan for MDHHS vision for Managing Provider Information, to give input into planning for a Provider Index (PI)
- MPI Distribution of Death Notices – Develop a new death notice service for the Master Person Index (MPI). This service will notify systems, who contribute their population to the MPI and subscribe to the service, when a certified death record links (or unlinks) to one of system's records in the MPI.
- Continue development and implementation of governance structure and supporting documentation
- Monitor algorithms and system configuration, recommend and implement enhancements for performance improvement of InfoSphere
- Continue migration from UCI to MPI as data sources are added to MIDSP
- Onboard additional new sources to use MIDSP (e.g., Vital Records (non-death))
- Develop and deploy additional MIDSP workflows for Potential Overlays and Review Identifier Tasks
- Create MIDSP reports to monitor Data Steward and Data Owner Activities
- Develop and deploy additional MIDSP features to improve Data Steward usability
- Complete MPI Algorithm analyses, reviews, and updates
- Develop an Enterprise MPI service model utilizing a cost allocation method between Medicaid and non-Medicaid applications
- Education (CEPI) – to help coordinate outreach programs aimed at school children; this includes cases such as outreach for free/reduced lunch, and linking a school's student population to the immunization history in the Immunization Registry, for immunization outreach
- Evaluate other integrations with MPI and PI and implement those that add value to the Medicaid Enterprise

14. Enhance DW Operability and Access

- Analysis and development to optimize query and system performance will reduce DW usage costs by improving efficiency and reducing storage space. Analysis of CHAMPS DW usage will be performed to determine areas for improvement (e.g., rewrite queries, add statistics, and add/remove indexes to align with user access to data, compress databases). Solutions will then be identified, developed and implemented to address the identified areas for improvement.
- Also includes patch releases as needed to provide functionality needed by MDHHS and to stay current with third party vendor supported hardware and software including Teradata.

Examples of Specific Tasks include:

- Develop code to analyze databases and queries, identify potential areas for enhancement, develop and implement solutions
- Develop and implement changes required to meet audit requirements
- Test and implement Disaster Recovery Plan for data warehouse
- Test and implement enhancements to accommodate Teradata software upgrades and patch releases
- Evaluate and implement enhancements to data warehouse operability and access that will benefit the Medicaid enterprise

15. Develop Queries and Extracts to Support the Medicaid Enterprise

- The data warehouse is a critical component of Medicaid and other MDHHS programs. It is the primary source of information for business operations, actuarial functions and day-to-day queries.
- It is also the primary source of information for audits, research, lawsuits, Freedom of Information Act (FOIA) requests, and other similar requests for data. These requests typically require response within a short timeframe and require knowledge of both Medicaid and the data warehouse.
- General Tasks include:
 - Develop and update queries and BI Query reports

- Develop and update data extracts

Examples of Specific Tasks include:

- Develop code to extract data for:
 - Integrated Service Delivery (ISD)
 - Public Act 107 requests, which require that data be available for 3 years
 - Actuarial extracts to Milliman for specific requests outside of the monthly production extract. For example, non-routine rate-setting and risk identification purposes, or specific populations or data sets
 - Extracts to provide information used to analyze impacts of new initiatives, identify participating populations, assess utilization and gaps in services, evaluate programs and processes (e.g., extracts to Altarum for evaluating Dental services, and for FFS/Encounters, for collaboration with community based groups for coordination of care efforts, for opioid project, for new waivers, and for Section 298 of PA 107 of 2017 Behavioral Health Integration Pilots)
 - Extracts in response to Audits
 - Responding to requests for Freedom of Information Act (FOIA) information
 - Responding to requests from the Legislature
- Evaluate other requests for extracts and information, and provide responses as required

16. <Intentionally blank>

17. **Management of the MDHHS Data Warehouse/Decision Support Effort**

- Provides strategic planning and management at various levels, from a task level through Activity levels and as part of a departmental-level oversight effort.

18. **Design, Development, and Installation of the MDHHS Business Glossary and Metadata Management Roadmap**

- Data assets are a critical component of Medicaid and other MDHHS programs. The Data Warehouse is the primary source of information for business operations, actuarial functions and day-to-day queries.

- General Tasks include:

- Develop and implement high-level structure for MDHHS Data
- Develop and Establish Business Glossary for Medicaid Area, expanding to Department- wide inventory, catalog, and classification of data assets

Examples of Specific Tasks include:

- Phase 1: Initiate and Establish Solution
 - Medicaid
 - Complete configuration of the IBM InfoSphere tool
 - Build Business Glossary (Terms, Definitions, and Data Elements) for Medicaid Area
 - Provide training and orientation for ongoing business glossary build-out
 - Complete Data Classification of data assets within the Medicaid Area
 - Develop Interface maps from MDHHS source systems to the data warehouse, including transformation rules, frequency of updates, and data dictionaries (Complementary, non-duplicative work related to Metadata is included in Decision Support System IAPDU Activity 6, "Create and Manage Metadata for MMIS IT Architecture, and BI-Administration Capability for Management of Security, Data, and Models."
 - MDHHS (not funded by this Activity)
 - Provide Training and Orientation for ongoing Data Classification for other areas
- Phase 2: Mature Solution and Ensure Adoption
 - Medicaid
 - Build-out Technical Metadata for Medicaid
 - MDHHS (not funded by this Activity)
 - Build-out Business Metadata for other business areas
 - Build and expand Business Glossary into additional Business Areas (e.g., Child Support, Child Welfare, Eligibility)

- Provide training and orientation for ongoing business glossary build-out
- Support department-wide data classification
- Establish Department-wide adoption of tool
 - Repeatable Framework for MDHHS to manage and maintain tool
 - Train and orient department for ongoing development and maintenance
- Phase 3: Establish Steady-State (not funded by this Activity)
 - MDHHS
 - Continue adding more Business Areas (e.g., Eligibility, Child Welfare)
 - Embed Business Glossary Solution into MDHHS IT lifecycle for projects, programs, and operations

19. Data Warehouse Modernization – on hold for FY20; to be prioritized in FY21

Human Services Data Warehouse

Contractors will provide support on a time and materials basis for the following activities.

1. Renovation and replacement of Child Welfare application (MiSACWIS)
2. Federal and State Reporting, including court ordered reporting
3. Run production reporting on the data warehouse
4. Provide updated analytic, reporting, data mining, and web-based analytic tools to enhance the analytic capability of the staff
5. Identify and load additional data sets on the data warehouse
6. Changes to existing data loads in order to stay current with enhancements to source systems: MICIS data sets
7. Provide onsite analytic development for the various program models, and analytic tools
8. Enhance the data warehouse as a result of BRIDGES, Child Support, Child Welfare changes.
9. Develop Queries and Reports to support BRIDGES, Child Support, Child Welfare Programs
10. Design, Development, and Installation of the MDHHS Business Glossary and Metadata Management Roadmap
11. Data Warehouse Modernization – on hold for FY20; to be prioritized in FY21

IT Classifications/Skills Set and Tasks:

The requirement is that the individual must possess the skills, knowledge, and experience required to perform the duties effectively and efficiently at the level specified in the work request. Below are standard role descriptions, each with an example list of responsibilities. All listed responsibilities may not be required for a specific position.

- **Data Warehouse Project Manager**

Data warehouse project manager manages the integration and/or development and delivery of very large and complex deliverables directly to the customer. This position provides the primary interface between the Contractor, the State and third-party providers.

- Establishes and manages the project plan, according to SUITE standards, including the development schedule, resource requirements and integration efforts of third-party products. Periodically reports progress to State management.
- Motivates and directs project team; sets goals, objectives and priorities; assigns and reviews work.
- Acts as the primary interface with the DTMB on issues regarding the project deliverable. Makes sure customer reviews are held with the customer user community and obtains sign-off on status reports and requirements.
- Works with DTMB to ensure approved methods, processes and tools are consistently used.
- Is accountable for meeting project schedule and results as well as for the State customer satisfaction and quality of the deliverables.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.
 - Facilitate user groups to encourage self-support among end user and developers
 - Facilitate requirements sessions and discussions with end users/business owners to gather information needed to understand business needs

- o Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs. Assists DTMB and MDHHS with documentation for managing the data warehouse such as presentations, reports and Advanced Planning Documentation (APD) to be submitted to CMS for funding.

Required Experience

- Bachelor's degree or equivalent technical study
- 5+ Years Project Manager or Team Lead Experience.
- 5+ Years Data Warehouse Business Intelligence / Experience.
- 3+ Years Teradata DW Experience.
- The following knowledge/experience may also be required for some roles:
 - o SQL Assistant experience
 - o Business Objects Training experience
 - o Business Objects report development
 - o Medicaid, Child Welfare, Public Assistance Eligibility & Benefit Determination, or Families & Children (US Department of Health & Human Services) knowledge.
 - o Teradata Utilities experience
 - o SUITE Methodology experience

- **Data Warehouse Architect**

Data warehouse architect designs total solutions involving multiple systems for large organizations. Participates/leads in the construction of models and pilot programs with senior level managers.

- Conducts model and pilot programs to test proposals or develop solutions to problems. Develops measurement criteria to evaluate programs and projects and develops or reviews estimates on technical aspects of projects.
- Responsible for data warehouse database design and providing technical direction to modelers, data analysts, ETL developers, and database administrators.
- Develops design proposals to meet DTMB and MDHHS needs
- Approves integrated systems design proposals for technical content.
- Monitors the implementation for technical correctness so that MDHHS needs are met.
- Identifies, analyzes and evaluates alternative design solutions.

Required Experience

- Bachelor's degree or equivalent technical study
- 6+ Years Data Warehouse Architect and Modeling Experience.
- Teradata Version 15/16 (or higher) Experience.
- Teradata Utilities Experience.
- 2+ Years Data Warehouse Administrator Experience.

- **Data Warehouse Business Objects Architect**

Is responsible for the availability, security, and usefulness of the MDHHS BO environment. This may include tasks such as:

- Verification of all BO user's login accessing MDHHS BO universes.
- Monitoring the MDHHS BO environment assuring that it is running with optimal performance.
- Testing the availability of all universe connections to respective DW databases.
- Verifying user activities and BO module activities from Web Intelligence Console.
- Troubleshooting any issues with reports (Technical support to End Users).
- Regular BO repository maintenance like Cleaning Orphaned Connection/Universe/Documents Scan / repair and compact to all repository errors and domain testing.
- Running integrity checks on all MDHHS BO universes to ensure through parsing (Syntax/Semantic checking).
- New BO universe development and modification.
- Data mapping to new tables in the universes.

- BO resource allocation like linking universe and documents to users and user groups.
- Meeting with BO users to discuss supporting issues.
- Help with end user training.
- Is expected to be able to work with agency requestors to define and develop new reports, and provide training and technical support to both DTMB developers and end user query developers. Their report development tasks may include:
 - Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - Develop and present training classes for end user developers to help learn how to most effectively use the DW platform and the BI tools available to them to support their own data needs where possible.
 - Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the DW.
 - Provide one-on-one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- Bachelor's degree or equivalent technical study
 - 10+ Years BO Administrator experience
 - 5+ Years Business Objects Universe Development experience
 - BO Version 4.2 SP4 or higher
 - BO WEBi and InfoView Training experience
 - 5+ Years BO Report Developer
 - Crystal Reports experience
- **Data Warehouse Database Administrator**
DW database administrator (DBA) is responsible for the availability, safety and usefulness of the MDHHS data warehouse databases.
 - Working in conjunction with system administrators, perform server configuration to ensure that the entire database system is capable of providing the services needed.
 - Performance monitoring to identify bottlenecks and places where throughput can be improved.
 - Security administration to ensure that the database cannot be accessed by unauthorized parties or damaged by anyone.
 - Configure access to the data warehouse and communication between the warehouse and other servers.
 - Physical database design translates the logical database design to work optimally for the specific database environment.
 - Working with State DW developers and Compliance staff to establish standards and guidelines for access to MDHHS data warehouse databases.
 - Collaborate with DTMB to provide data/database integrity for software installation and updates; and backup and restore, including:
 - o Software installation and database management system upgrades
 - o Software upgrades so that the database is in compliance with critical security patches, or, software upgrades deemed necessary by the State.
 - Work with State DW developers and clients to optimize their queries.

Required Experience

- Bachelor's degree or equivalent technical study
- 4+ Teradata Database Administrator Experience.
- 2+ Teradata Version 15/16 (or higher) Experience.
- Teradata Utilities Experience.
- Teradata Manager Experience.
- SQL Assistant Experience.
- Linux/Unix Experience.
- Oracle Experience.

- **Data Warehouse Developer Senior/Junior)**

Data warehouse developers perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other MDHHS applications. In addition, they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Interact with Business Users and Subject-Matter Experts from the Michigan Department of Health and Human Services (MDHHS) to gather and document technical requirements and processes.
- Identify the key metrics that are to be reported from the MDHHS Data Warehouse using Business Intelligence (BI) tools.
- Create mapping and migration analysis documents.
- Develop the ETL (Extract, Transform and Load) scripts using Teradata Utilities (TPT, Bteq, FExports, MLOAD, Stored procedures and Data Marts) for Loading the Data from Source system to Target system by applying business rules as per the requirements
- Analyze MDHHS data warehouse needs and then design, test, and develop SQL Code/Reports software to meet those requirements
- Collaborate with Teradata DBAs, Data Modelers, Business Analysts and Business users to design and develop Teradata SQL code and Business objects reports.
- Design and develop data marts using Teradata SQL to be used in BI reporting to meet MDHHS needs.
- Design & develop the batch flow using Unix Shell Scripts to load data from Operational System to the MDHHS Data Warehouse.
- Perform Unit Testing and provide support during System Testing and User Acceptance Testing. Resolve the issues/defects identified during Testing.
- Performance tuning and optimization of ETL (Extract, Transform and Load).
- Design, develop, implement and maintain new reporting functionality and analytic applications across multiple business units using various business intelligence tools.
- Identify, design and develop the strategic reports that are to be reported from the MDHHS Data Warehouse using Business Intelligence (BI) tool.
- Create data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- SQL development
- Train developers and end-users in how best to design queries for a specific database.

DW Developer – Senior: Required Experience

- Bachelor's degree or equivalent technical study
- 6+ Years SQL Development Experience.
- Teradata Version 15/16 (or higher) Experience
- ETL Development using Teradata Utilities and Linux Experience.
- 6 Years Teradata Utilities experience
- 3 Years SQL and Performance Tuning
- Excellent written and oral communication skills
- Mentoring co-workers
- The following knowledge/experience may also be required for some roles:
 - o 3 Years SQL Assistant experience
 - o 3 Years Unix Shell Scripting experience
 - o Business Analyst experience

Data Warehouse Developer Junior

Data warehouse developers perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other MDHHS applications. In addition, they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Creating data warehouse-based applications including reporting, dashboards and other information analysis and delivery systems.
- Perform extract, transform, and load activities to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.

- Work with developers and end user query developers to design and improve database queries.
- DW Developer - Junior: Required Experience
- 2+ Years SQL Development Experience.
- Teradata Utilities Experience.
- SQL Assistant Experience.
- **Data Warehouse Designer/Modeler**
Data warehouse designer is responsible for the database modeling and design for an efficient data warehouse objects structure. This involves defining the tables, keys and relationships that will allow an application to retrieve and update data correctly and efficiently.
 - Will work with State and contract staff to ensure that the MDHHS DW models support the data, reporting, and analytic needs required for MDHHS.
 - Working with end users and developers to understand the data needs of MDHHS clients.
 - Documenting the data warehouse data involves including definitions, constraints and access needs.
 - Creating and maintaining data warehouse logical designs, including Entity Relationship diagrams, which illustrate what data will be stored, how it is organized, how it can be retrieved (keys) and how it relates to other data in the database.
 - Creating and maintaining data warehouse data definition language (DDL) that can be used to create and update the database.
 - Working with Data Warehouse DBA and ETL developers, modify the logical design to create a physical design most suited to the database environment and the applications that will use it.
 - Work with Data Warehouse ETL developers and DBA to create and maintain database design standards.
 - Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their report development related tasks may include:
 - Working with end user requestors to understand their data needs and create and implement solutions for those needs.
 - Develop and present training classes for end user developers to help them learn how to most effectively use the DW platform and the BI tools available to them to support their own data needs, where possible.
 - Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solutions using the DW.
 - Provide one-on-one support for developers and end users to assist them in accomplishing their data reporting needs.
 - Perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other Agency applications. Their development related activities may include tasks such as:
 - Creating data warehouse-based applications including reporting, dashboards and other information analysis and delivery systems.
 - Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
 - SQL development.
 - Work with developers and end user query developers to design and improvedatabase queries.
 - Train developers in how best to design queries for a specificdatabase.

Required Experience

- Bachelor's degree or equivalent technical study
- 5+ Years Data Warehouse Modeling Experience.
- 5+ Years of SQL Development.
- Data Warehouse Architect Experience.
- **Data Warehouse Business Intelligence Report Developer**
Data Warehouse Business Intelligence Report Developer is expected to be able to work with agency requestors to define and develop new reports, and provide training and technical support to both DTMB

developers and end user query developers.

- Working with end user requestors to understand their data needs and create and implement solutions to those needs.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
- Develop and present training classes for DTMB developers to better understand how to use the data warehouse development tools to create and implement reporting solution using the data warehouse.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 5+ Years of Business Objects Report Development Experience.
- 5+ Years of SQL Development.
- Business Analyst Experience may be required.
- Excellent written and oral communication skills

- **Data Warehouse Business Intelligence Analyst (Senior/Junior)**

Data warehouse business intelligence/analyst works with end users to provide information in a number of different ways.

- Running JAD sessions to understand and collect business requirements, develop use cases and determine what data is needed and how it is likely to be used.
- Helping translate business requirements into technical specifications, e.g., ETL and report requirements.
- Analyzing data requests from various customers to define/determine requirements for modifications and enhancements to existing data warehouse/business intelligence systems.
- Creating ad-hoc queries to answer specific user questions.
- Helping design and specify data warehouse business solutions.
- Creating data warehouse-based applications including reporting, dashboards and other information analysis and delivery systems.
- Supporting end user to enable them to create their own queries and reports as needed.
- Identify data problems and work with developers to correct them.
- Working with developers and customers to assist in establishing test plans and data; validation of program/reporting functions; and preparation of necessary forms and documentation for implementation.
- Configuring data models and structures, e.g., business intelligence rules, and applications settings according to design specifications and departmental standards.
- Analyzing and recommending process improvements.
- Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
- Organize and run user groups to encourage self-support among end user and DTMB query and other data warehouse application developers.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
 - o Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - o Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
 - o Develop and present training classes for DTMB developers to better understand how to use the data warehouse development tools to create and implement reporting solution using the data warehouse.
 - o Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

DW BI Analyst – Senior: Required Experience

- Bachelor's degree or equivalent technical study

- 6+ Years Project Lead / Data Warehouse BI Analyst Experience.
- Training Experience.
- SQL Assistant Experience.
- Medicaid, child welfare or other specialty experience may be desired.

DW BI Analyst – Junior: Required Experience

- 2+ Years Project Lead / Data Warehouse BI Analyst Experience.
- Medicaid, child welfare or other specialty experience may be desired.

- **Data Warehouse Help Desk Analyst**

DW help desk staff provide first line support for end users and developers.

- Manages MDHHS Data Warehouse mailbox.
- Assesses user identified issues and provides guidance for resolution.
- Directs unresolved problems and reports to appropriate staff, if necessary.
- Tracks and analyzes problem occurrences and resolutions.
- Conducts data warehouse user group training.
- Develops training materials.
- Assists with query/report development.
- Provides user assistance with data warehouse tool(s), model/database, business knowledge and recommendations for efficiency and solutions to meet user business needs.

Required Experience

- 3+ Years of Data Warehouse Help Desk Analyst Experience.
- Experience in supporting the end users in accessing the data warehouse and effectively utilize the desktop tools.

- **Data Warehouse Web Developer (Senior/Junior)**

A DW Web Developer is responsible for designing and developing web-based applications that interact with and utilize the data warehouse to provide MDHHS users with highly interactive, easy to use web-based data warehouse applications.

- Learning the customer's business process and working with others to define customer requirements specifications by participating in meetings, analysis and documentation preparation
- Defining and developing applications that rely on unique web-based technology and tools, and that will conform to standards defined by DTMB for user interface and usage of the data warehouse.
- Defining the web application user interface, business rules, database access and data warehouse access, and determining any data sources that need to be imported into the data warehouse for web application operation.
- Producing technical specification documents and designs (e.g., process flows, screen mock-ups, component logic) to review the web application with the user, and conducting JAD sessions to revise and finalize technical specifications.
- Prototyping of web application pages for user review and approval.
- Producing accurate and complete data mapping documents
- Performing user acceptance testing with users and DTMB to confirm that new web applications perform per specifications, and making adjustments to the web application as required
- Helping maintain a development and staging environment for the development and testing of enhancements and updates to the web application.
- Problem-solving, troubleshooting and identifying/executing resolution actions
- Assisting with creation of help documents and procedures manuals
- Assisting with creation of presentation materials for technical review meetings, approval sessions and application demonstrations

DW Web Developer – Senior: Required Experience

- Bachelor's degree or equivalent technical study

- 5+ Years of Data Warehouse Web Developer Experience.
- Web development may include: HTML, JavaScript; JQuery; Javascript libraries and plugins; CSS Libraries like Bootstrap; Ajax; ASP.NET with Webforms and Model View Controller (MVC); VisualStudio; SQL Server and the development and maintenance of relational databases integrated with Visual Studio web applications; RESTful services; Web APIs; Crystal Reports; integration to SQL Server or Teradata RDBMS; Telerik Control Toolkit; web app interface with LDAP, Microsoft SharePoint, Business Objects and FileNet; Internet Information Services (IIS) configuration and management; networking using TCP/IP; tools for web prototyping like Protoshare; version control software (Subversion, GitHub); unit testing tools; agile development methodology.
- Medicaid, child welfare or other specialty may be desired

DW Web Developer – Junior: Required Experience

- 2+ years of data warehouse web developer experience
- Experience with a subset of the technologies listed above for DW Web Developer - Senior

- **Subject Matter Expert (SME)**

A Subject Matter Expert (SME) will be responsible for providing specialized, in-depth knowledge of a business area(s) such as Medicaid, Master Person Index/Provider Index, Pharmacy, ICD-10, HEDIS, Metadata Management, and technology solutions.

- Leading or actively participating in workgroups with the need for specialized knowledge.
- Providing guidance on how their area of expertise can resolve an organizational need, and actively participates in all phases of a project/initiative by sharing their knowledge, expertise and ideas.
- Defining technology and business solutions based on thorough understanding of business processes and policies.
- Reviewing, helping re-engineer, or creating new processes and policies.
- Evaluating and defining technology requirements and solutions.
- Defining business needs, and identifying and recommending the most appropriate solutions.
- Providing documentation such as forms, manuals, correspondence, and procedures
- Understanding, articulating, and implementing best practices related to their area of expertise.
- In some cases, will work with end users to provide information in many ways. This may include tasks such as:
 - o Running Joint Application Design (JAD) sessions to understand what data is needed and how it is likely to be used.
 - o Creating ad-hoc queries to answer specific user questions.
 - o Program design and specification.
 - o Creating DW based applications including reporting, dashboards and other information analysis and delivery systems.
 - o Supporting end user to enable them to create their own queries and reports as needed.
 - o Identify data problems and work with developers to correct them.
 - o Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
 - o Organize and run user groups to encourage self-support among end user and DTMB query and other BI application developers
- In some cases, the SME will also be expected to be able to work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
 - o Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - o Develop and present training classes for end user developers to help learn how to most effectively use the DW platform and the BI tools available to them to support their own data needs where possible.
 - o Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the DW.
 - o Provide one-on-one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- Experience requirements will vary depending on area of expertise being requested. Current SMEs must have expertise in Medicaid, technology solutions, MPI/PI, metadata management, population health and/or business objects dashboards.

DELIVERABLES:

The deliverables and tasks agreed to in the resulting Contract shall comply with the following approval process:

APPROVAL OF DELIVERABLES, IN GENERAL:

(a) All Deliverables (Physical Deliverables, Written Deliverables, and Service Deliverables) require formal written approval by the State, in accordance with the following procedures. Formal approval by the State requires that the Deliverable be confirmed in writing by the State to meet its specifications, which will include the successful completion of Testing, to be led by the State with the support and assistance of Contractor. The parties acknowledge that the approval process set forth herein will be facilitated by ongoing consultation between the parties, visibility of interim and intermediate Deliverables and collaboration on key decisions.

(b) The State's obligation to comply with any State Review Period is conditioned on the timely delivery of Deliverables being reviewed.

(c) Prior to commencement of its review or testing of a Deliverable, the State may inspect the Deliverable to confirm that all components of the Deliverable have been delivered without material deficiencies. If the State determines that the Deliverable has material deficiencies, the State may refuse delivery of the Deliverable without performing any further inspection or testing of the Deliverable. Otherwise, the review period will be deemed to have started on the day the State and Contractor receive the Deliverable and agree that the Deliverable is ready for use and, where applicable, Contractor has provided certification to that effect.

(d) The State will approve in writing a Deliverable upon confirming that it conforms to and, performs in accordance with, its specifications without material deficiency. The State may, but shall not be required to, conditionally approve in writing a Deliverable that contains material deficiencies if the State elects to permit Contractor to rectify them post-approval. In any case, Contractor will be responsible for working diligently to correct within a reasonable time at Contractor's expense all deficiencies in the Deliverable that remain outstanding at the time of State approval.

(e) If, after three (3) opportunities (the original and two repeat efforts), Contractor is unable to correct all deficiencies preventing Final Acceptance of a Deliverable, the State may: (i) demand that Contractor cure the failure and give Contractor additional time to cure the failure at the sole expense of Contractor; or (ii) keep any resulting Contract(s) in force and do, either itself or through other parties, whatever Contractor has failed to do, in which event Contractor shall bear any excess expenditure incurred by the State in so doing beyond the Contract(s) price for such Deliverable and will pay the State an additional sum equal to ten percent (10%) of such excess expenditure to cover the State's general expenses provided the State can furnish proof of such general expenses; or (iii) terminate the particular Statement of Work for default, either in whole or in part by notice to Contractor provided Contractor is unable to cure such breach. Notwithstanding the foregoing, the State shall not use, as a basis for exercising its termination rights under this Section, deficiencies discovered in a repeat State Review Period that could reasonably have been discovered during a prior State Review Period.

(f) The State, at any time and in its reasonable discretion, may halt the testing or approval process if such process reveals deficiencies in or problems with a Deliverable in a sufficient quantity or of a sufficient severity as to make the continuation of such process unproductive or unworkable. In such case, the State may return the applicable Deliverable to Contractor for correction and re-delivery prior to resuming the testing or approval process.

PROCESS FOR APPROVAL WRITTEN DELIVERABLES:

The State Review Period for Written Deliverables will be the number of days set forth in the applicable Statement of Work/Purchase Order following delivery of the final version of the Deliverable (failing which the State Review Period, by default, shall be five (5) Business Days for Written Deliverables of one hundred (100) pages or less and ten (10) Business Days for Written Deliverables of more than one hundred (100) pages). The duration of the State Review Periods will be doubled if the State has not had an opportunity to review an interim draft of the Written Deliverable prior to its submission to the State. The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor

will correct the described deficiencies and within five (5) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF SERVICE DELIVERABLES:

The State Review Period for approval of Service Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) Business Days for a Service Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF PHYSICAL DELIVERABLES:

The State Review Period for approval of Physical Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) continuous Business Days for a Physical Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

ACCEPTANCE CRITERIA:

PROJECT CONTROL AND REPORTS:

Contractor must submit a monthly progress report to DTMB Program Manager throughout the life of this project. The report may be submitted with the billing invoice. Each monthly progress report must contain the following information:

- **Hours:** Indicate the number of hours expended during the past month, and the cumulative total to date for the project.
- **Tasks accomplished:** Indicate what projects have been worked on, and what was completed during the current reporting period.

AGENCY RESPONSIBILITIES:

- Provide access to State networks, servers, software license (as appropriate), etc. needed for Contractor to perform tasks required for this agreement
- For all work performed at State owned or leased buildings:
 - Provide contractor staff access to telephone and copying equipment
 - Provide contractor staff computer hardware and software, unless it is mutually deemed unnecessary
- The State's responsibilities for Project Augmentation and Staff Augmentation are listed on pages 2-4

LOCATION OF WHERE THE WORK IS TO BE PERFORMED:

All Project Augmentation services described in this Work Request will continue to be performed at Vendor locations or approved remote work locations, as previously agreed upon between the DTMB Project Manager and Vendor until altered through a Contract Change Notice.

With input from DHHS and Contractor, the work for all Staff Augmentation services described in this Work Request is to be performed, completed, and managed at locations determined by the DTMB Program Manager. Work location will be in State owned or leased buildings as determined by the DTMB Program Manager, but may be at Vendor location if agreed upon by both parties (DTMB & Contractor), with the expectation that personnel will be available, on hand and able to complete emergency tasks. DTMB does allow telecommuting/working remotely. This is determined on an individual basis and is at DTMB Program Manager discretion in accordance with DTMB Policy. In addition, onsite support may be needed and will be identified at such time.

EXPECTED CONTRACTOR WORK HOURS AND CONDITIONS:

Contractor must provide services during normal working hours (Monday through Friday, 7:00 a.m. to 6:00 p.m. ET.) and possible night and weekend hours depending on position and project requirements. 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. Contractor's staff working at State offices shall observe the same standard holidays as State employees.

The State does not compensate for holiday pay.

No overtime will be permitted, i.e., Contractor will not be paid any different hourly rate if the number of hours exceeds forty (40) in any given week.

SPECIFIC AGENCY STANDARDS:

- Contractor will provide the State with all process, standards, project, and technical documentation they utilize to meet MDHHS business requests. This includes documentation for closed projects, maintenance documentation, and project status/tracking information.
- Contractor will provide all code, scripts, and technical work completed or utilized on behalf of the State of Michigan in a timely fashion meeting DTMB timelines.
- Contractor staff will be subject to skills assessments at the discretion of the State.
- Contractor's staff providing Staff Augmentation services may be utilized across programs within the MDHHS to support Data Warehouse Business Intelligence projects as needed, at the discretion of the DTMB Program Manager. Project Aug. resources may be utilized across programs within the MDHHS to support Data Warehouse Business Intelligence projects as needed, at the discretion of the DTMB Program Manager but requiring a Contract Change Notice.
- Contractor will cross-train with SOM staff to provide knowledge transfer and transition of work from Contractor staff to State staff.
- Contractor will follow DTMB guidelines and practices for project completion, SUITE documentation, technical documentation, and any other work performed on behalf of the SOM.
- Contractor staff will utilize the portfolio management tool, Clarity.
- Contractor staff will be subject to SOM/DTMB IT policies, procedures, and standards.

RIGHT TO OWNERSHIP:

State intends to own the Software at the end of the Contract

- Ownership of Work Product by State. All Deliverables shall be owned by the State and shall be considered works made for hire by the Contractor for the State. The State shall own all United States and international copyrights, trademarks, patents or other proprietary rights in the Deliverables.

- Vesting of Rights. The Contractor agrees to assign and upon creation of each Deliverable automatically assigns, to the State ownership of all United States and international copyrights, trademarks, patents or other proprietary rights in each and every Deliverable, whether or not registered by the Contractor, insofar as any such Deliverable, by operation of law, may not be considered work made for hire by the Contractor for the State. From time to time upon State's request, the Contractor and/or its personnel shall confirm such assignment by execution and delivery of such assignments, confirmations of assignment, or other written instruments as the State may request. The State shall have the right to obtain and hold in its own name all copyright, trademark, and patent registrations and other evidence of rights that may be available for Deliverables.
- STATE MUST RECEIVE FAIR MARKET VALUE FOR THE LICENSE – (This must be reviewed and negotiated by the DTMB Procurement Buyer)

PAYMENT SCHEDULE:

Payment will be made on a time and materials basis (hourly based) and will be paid monthly. The State will pay Contractor upon receipt of properly completed invoices which shall be submitted to the billing address on the State issued purchase order not more often than monthly. DTMB's Accounts Payable area will coordinate obtaining the DTMB Program Manager approvals. All invoices should reflect the actual work hours completed by payment date, and must be approved by the DTMB Program Manager prior to payment. The invoices shall describe and document to the State's satisfaction a description of the work performed, the progress of the project, and fees.

All invoices must contain the State of Michigan issued purchase order number.

Payment shall be considered timely if made by the State within forty-five (45) days after receipt of properly completed invoices.

EXPENSES:

The State will NOT pay for any travel time or travel expenses, including hotel, mileage, meals, parking, etc.

PRICING SUMMARY

Pricing for the Extension Period is set forth in Appendix A below.

MODIFICATIONS

For an agreement of this size, changes to staffing (resources and/or subcontracting companies) may normally occur. Contractor will provide the State a staffing letter specifying any such changes and the State will provide written approval for acceptance. Contractor will also work with the State to complete the State's approval process for new subcontracting companies, as needed.

Other types of changes will be implemented, as needed, via (i) acceptance letters; or (ii) a simple amendment (e.g., typically 1- or 2-pages) that describes the change and requires State's written approval for acceptance.

ADDITIONAL TIME & MATERIALS LABOR RATES FOR PROFESSIONAL SERVICES:

To the extent the parties agree that certain specific services must be provided on a time and materials basis, such services must be provided within the not to exceed hourly rates as revised in Change Notice 33, Revised Cost Table - Attachment A, included here as Appendix B for reference. Future amendments to this Work Request may utilize this rate structure, as agreed between the Contractor and State.

Additionally, the Contractor may utilize the rates in order to provide the State with a not to exceed time and materials price. Prices quoted herein will be used for change, addition, and / or deletion of work associated with this Work Request. The Estimated Hours is provided below as an estimate only and is not meant to preclude or limit the State from requesting a resource/staffing mix for future projects that exceeds or reduces the hours estimate for a specific Staffing Category.

Appendix A

Table 1 -part 1

Assigned Resource	Position Ref	Position	Contract Year 12/21/19 - 12/20/20		
			Hourly Rate	Est. Max Hours	Estimated Dollars
MDHHS Health Services					
BAUMAN, AMY	A01	Data Warehouse Project Manager	134	1,854	248,436
BLAIR, CORINNE	A02	Subject Matter Expert MPI	235	521	122,435
BOAK, KATHY	A03	Data Warehouse Developer - Senior	126	1,845	232,470
BONAM, SUDHAKAR	A04	Data Warehouse Developer - Senior	126	1,998	251,748
BRAR, BIRINDER	A05	Data Warehouse BI Analyst - Senior	126	1,998	251,748
BUSH, STEPHEN	A06	Data Warehouse Developer - Senior	126	1,854	233,604
CAREY, TIM	A07	Data Warehouse Project Manager	134	1,998	267,732
CARTER, TYSON	A08	Subject Matter Expert MPI	235	521	122,435
CHERUKURI, SAI	A09	Data Warehouse Web Developer - Senior	108	1,998	215,784
CHIKYALA, DHEERAJ	A10	Data Warehouse Developer - Senior	126	1,998	251,748
CHITIBOMMA, RAVI	A11	Data Warehouse Developer - Senior	126	1,854	233,604
CHITTEM, KIRAN	A12	Data Warehouse Web Developer - Senior	108	1,998	215,784
CHRISTIANSEN, JEREMY	A13	Data Warehouse Developer - Senior	126	965	121,590
COBURN, DEB	A14	Data Warehouse BI Analyst - Senior	126	1,919	241,794
CONNOR, RONALD	A15	Subject Matter Expert MPI	235	521	122,435
DAMEGUNTA, DEEPAK / TBD	A16	Data Warehouse Web Developer - Senior	108	1,833	197,964
DE WINKLE, NATHAN	A17	Data Warehouse BI Analyst - Senior	126	1,854	233,604
FOTH, CASEY	A18	Subject Matter Expert MPI	235	521	122,435
FRIAR, BETH	A19	Data Warehouse BI Analyst - Senior	126	1,866	235,116
GAJBHIMKAR, SRIKANTH	A20	Data Warehouse Web Developer - Senior	108	1,998	215,784
GEORGE, AMY	A21	Data Warehouse Project Manager	134	992	132,928
GREGG, BILL	A22	Data Warehouse Developer - Senior	126	1,904	239,904
HOMER, DANIEL	A24	Data Warehouse Developer - Senior	126	1,854	233,604
HULL, BARRY	A25	Data Warehouse Architect	130	1,998	259,740
IFTODY, SEAN	A26	Subject Matter Expert MPI	235	521	122,435
JADOON, FAHD	A27	Data Warehouse BI Analyst - Senior	126	1,998	251,748
KAMINSKE, CHRISTIAN / TBD	A28	Data Warehouse BI Analyst - Junior	126	1,701	214,326
KREINER, META	A29	Subject Matter Expert Population Health	113	1,854	209,502
KRISHNAMOORTHY, RAJA	A30	Subject Matter Expert MPI	235	521	122,435
KRISTJANSON, KORBIN	A31	Subject Matter Expert MPI	235	521	122,435
LECLERC, NICK	A32	Subject Matter Expert MPI	235	521	122,435
LOGANATHAN, RAMESH	A33	Data Warehouse Database Administrator	126	1,998	251,748
MCNEIL, JEANNE	A34	Data Warehouse Project Manager	148	1,600	236,800
NADELLA, MALATHI	A35	Data Warehouse BI Analyst - Junior	126	1,998	251,748
OLSON, LAURA	A36	Data Warehouse Help Desk Analyst	126	1,806	227,556
RITTER-IRELAND, JENNY	A37	Data Warehouse BI Analyst - Senior	126	1,854	233,604
SABIR, MOHAMMAD	A38	Data Warehouse Developer - Senior	126	1,880	236,880
SCHUSTER, JOHN / TBD	A39	Data Warehouse Web Developer - Senior	108	1,854	200,232
SHAH, AMI	A40	Data Warehouse Web Developer - Senior	108	1,998	215,784
SHAH, KUNAL	A41	Data Warehouse Architect	130	1,998	259,740
SINGH, VIDHIKA	A42	Subject Matter Expert MPI	235	521	122,435
SNYDER, JOHN	A43	Data Warehouse BI Analyst - Senior	126	1,854	233,604
SORRELLS, ANGEL	A44	Data Warehouse BI Analyst - Senior	126	1,854	233,604
SRIGIRI, HAVILAH	A45	Data Warehouse Web Developer - Senior	108	1,998	215,784
SUSKANDLA, ANIL / TBD	A46	Data Warehouse Web Developer - Senior	108	1,833	197,964
TANNEERU, VISHAL	A47	Data Warehouse BI Report Developer	108	1,854	200,232
TATE, JEFF	A48	Subject Matter Expert CHAMPS	167	1,998	333,666
TRAN, VINCENT	A49	Subject Matter Expert MPI	235	521	122,435
TRIPATHI, VINAYAK	A50	Data Warehouse Developer - Senior	126	1,998	251,748
VAIDYA, SUMEET	A51	Subject Matter Expert MPI	235	521	122,435
VAN, KENTON DEREK	A52	Data Warehouse BI Analyst - Senior	126	1,854	233,604
WITHERS, BETH	A53	Data Warehouse Designer/Modeler	126	1,854	233,604
Subtotals for HEALTH Services:				81,945	10,784,949

Appendix A (CONTINUED)**Table 1 -part 2**

MDHHS Human Services					
BHIMIREDDY, SUDARSHAN	B01	Data Warehouse Developer - Senior BI	126	1984	249,984
DAVIS, JIM	B02	Data Warehouse Project Manager	148	1984	293,632
GAJULA, MADHU	B03	Data Warehouse Developer - Senior ETL	126	1984	249,984
GRANT, BRUCE	B04	Data Warehouse Developer - Senior ETL	126	1984	249,984
GUNDA, RAKESH	B05	Data Warehouse Developer - Senior ETL	126	1984	249,984
JOURDEN, MELISSA	B06	Data Warehouse Project Manager	148	1984	293,632
KHAN, MOHOMMOD	B07	Data Warehouse Developer - Senior ETL	126	1984	249,984
MAHADEVAN, MURALI	B08	Data Warehouse Business Objects Architect	130	1984	257,920
MANDAVELLI, VAMSI	B09	Data Warehouse Developer - Senior ETL	126	1984	249,984
MARTIN, NICHOLE	B10	Data Warehouse BI Analyst - Senior	126	1984	249,984
MUDDULURU, SWAROOP	B11	Data Warehouse Developer - Senior ETL	126	1984	249,984
NANDURI, SRIRAM	B12	Data Warehouse Database Administrator	126	1984	249,984
PAJJURI, UDAY	B13	Data Warehouse Developer - Senior BI	126	1984	249,984
PATEL, VIKASH	B14	Data Warehouse BI Analyst - Senior	126	1984	249,984
RITCHIE, LEE	B15	Data Warehouse Designer/Modeler	126	1984	249,984
THOKALA, SHIVA	B16	Data Warehouse Developer - Senior ETL	126	1984	249,984
Subtotals for HUMAN Services:				31,744	4,094,976
TOTALS:				113,689	14,879,925

Payment will be made on a Time and Materials basis. DTMB will pay Contractor upon receipt of properly completed invoice(s) which shall be submitted to the billing address on the State issued purchase order not more often than monthly. DTMB Accounts Payable area will coordinate obtaining Agency and DTMB Program Manager approvals. All invoices should reflect actual hours worked by Contractor, and must be approved by the Agency and DTMB Program Manager prior to payment.

The estimated yearly contract hours and dollars will not preclude the State from utilizing the hours and dollars on an actual basis in amounts that vary from the estimates.

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Appendix B

The table below was provided in Change Notice 33 as Attachment A and is unchanged. It is included here only for reference and convenience purposes. It provides not to exceed rates.

Position Type	Not To Exceed Hourly Rate ¹
Data Warehouse Project Manager	\$168.00
Data Warehouse Architect	\$188.00
Data Warehouse Data Designer/Modeler	\$163.00
Data Warehouse Developer Senior/Junior	\$158.00
Data Warehouse Business Intelligence Analyst Senior/Junior	\$158.00
Data Warehouse Database Administrator	\$163.00
Data Warehouse Business Intelligence Report Developer	\$158.00
Data Warehouse Help Desk Analyst	\$145.00
Data Warehouse Web Developer	\$125.00
Subject Matter Expert	\$350.00
Advanced Analytics Software Consultant	\$275.00
Principal Consultant	\$450.00

1. These are not to exceed rates that will be appropriately discounted if additional SOWs are issued.



STATE OF MICHIGAN CENTRAL PROCUREMENT SERVICES

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 **35**

to

Contract Number **071B1300138**

CONTRACTOR	OPTUM GOVERNMENT SOLUTIONS, INC.
	822 Centennial Way, Suite 100
	Lansing, MI 48917
	David Wieber
	517-327-2199
	david.wieber@optum.com
	CV0000961

STATE	Program Manager	Various	MULTI
	Contract Administrator	Matt Weiss	DTMB
		(517) 256-9895	
		weissm4@michigan.gov	

CONTRACT SUMMARY

PRE-QUAL PROGRAM DTMB DATA WAREHOUSE BUSINESS INTE

INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE
December 21, 2010	December 20, 2015	5 - 2 Year	December 20, 2019
PAYMENT TERMS		DELIVERY TIMEFRAME	
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING
<input type="checkbox"/> P-Card	<input type="checkbox"/> PRC	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

MINIMUM DELIVERY REQUIREMENTS

DESCRIPTION OF CHANGE NOTICE

OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
<input checked="" type="checkbox"/>	1-month	<input type="checkbox"/>		January 20, 2020
CURRENT VALUE	VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE		
\$134,192,866.00	\$1,356,911.75	\$135,549,777.75		

DESCRIPTION

Effective 12/20/2019, this Contract is hereby increased by \$1,356,911.75 the following amendment is hereby incorporated into the Contract to combine the previously separate Health Services and Human Services Statement of Works (SOWs) into a single SOW. This Contract is also extended by 1-month. The revised Contract expiration is 1/20/2020.

All other terms, conditions, specifications, and pricing remain the same. Per contractor, agency and DTMB procurement.

**Program Managers
for
Multi-Agency and Statewide Contracts**

AGENCY	NAME	PHONE	EMAIL
DTMB	Dave Fox	517-241-6483	FoxD@michigan.gov



**MICHIGAN DEPARTMENT OF TECHNOLOGY,
MANAGEMENT AND BUDGET
DATA WAREHOUSE (DW) AND BUSINESS INTELLIGENCE (BI) SERVICES WORK
REQUEST and STATEMENT OF WORK**

This Work Request and Statement of Work (collectively the “Work Request”) are being issued to Optum Government Solutions, Inc. (“Optum” or “Vendor” or “Contractor”) under Optum’s Contract (071B1300138) with the Michigan Department of Technology, Management and Budget, Procurement, as established under the Data Warehouse and Business Intelligence Program.

Project Title: Michigan Department of Health and Human Services Data Warehouse	Period of Coverage or Extension Period: 12/21/2019-1/20/2020
Requesting Agency: Michigan Department of Technology, Management, and Budget (DTMB)	
DTMB Program Manager: David Fox	Phone: 517-930-0972 Email: foxd@michigan.gov
Agency Program Manager: Cynthia Green-Edwards	Phone: 517-284-1035 Email: EdwardsC@michigan.gov
DTMB Contract Administrator: Matt Weiss	Phone: 517-256-9895 Email: weissm4@michigan.gov
Contractor Contract Administrator: Jeanne McNeil	Phone: 517-993-0913 Email: jeanne.mcneil@optum.com

BACKGROUND:

MDHHS has been using the data warehouse since 1994 to direct policy, detect fraud, identify potentially valuable new initiatives, reduce error rates, calculate rates and more.

MDHHS utilizes the data warehouse for multiple purposes including mission critical functions. It functions as the department's decision support system. MDHHS uses data from the warehouse for rate setting for hospitals and managed and long term care providers. It is used to manage the performance of its partners (managed care providers and others) as well as programs within MDHHS. The Department has an extensive analytics effort to ensure that funds are being spent most effectively, including detecting and prosecuting fraud, and assure that Medicaid beneficiaries are getting the best care possible. In support of departmental management, the data warehouse is used to analyze trends, report on all aspects of Medicaid Eligibility, Child Welfare, and Child Support, and provides critical support to the budgeting process. Beyond this, the data warehouse provides significant analytical support for epidemiology and other studies. In addition, MDHHS will be adding new data sources and increasing their collaboration with other agencies along with adding new analytical tools.

MDHHS has relied on State and Contractor staff to provide data warehouse support and business intelligence services. These services include: providing data warehouse Extract, Transform and Load (ETL) services, application development, web development, business intelligence model, reporting, query development, help desk support, training and data analysis.

Health Services Data Warehouse –

MDHHS will be adapting and expanding its use of the data warehouse as it continues to implement new functionality and expand ongoing work in its Medicaid Management Information System (MMIS), known as CHAMPS (Community Health Automated Medicaid Processing System). CHAMPS efforts underway include federally mandated projects such as the Promoting Interoperability Program, Electronic Visit Verification (EVV), and the Transformed Medicaid Statistical Information System (T-MSIS). The Department expects to utilize the data warehouse for Health Information Technology/Health Information Exchange initiatives, Medicaid statistical data analysis and managed care rate setting, and the Integrated Care Dual Eligibles Project. The Promoting Interoperability Program and Michigan Health Information Network are American Recovery and Reinvestment Act of 2009 (ARRA) initiatives to improve health care quality, cost, efficiency, and patient safety through electronic exchange of health information. An important requirement of these ARRA initiatives requires the use of clinical data to improve patient care outcomes, which will involve significant research efforts using de-identified data. It is anticipated that much of the data will be stored in the data warehouse. To store and use of this ARRA initiative data will require significantly increased data warehouse capabilities.

The Project Augmentation delivery process will continue to be used for the Health Services enhancement projects, through the partnering of the following State and Contractor roles and delivery process, where the "Project Augmentation" process is defined as:

Roles:

- DTMB Program Manager as I/T owner
- MDHHS Agency Program Manager as business owner
- Contractor Contract Administrator as business intelligence services provider, i.e., providing business and I/T expertise

Delivery Process:

- The MDHHS Project Management Governance specifies and approves each Health Services project
- The DTMB Program Manager and MDHHS Agency Program Manager, with input from the Contractor Contract Administrator, work together to clarify Health Services project priorities via the State's PMO process
- The Contractor Contract Administrator and Contractor's Project Managers direct all Contractor resources and specify the staff roles and allocation levels for each approved project

Human Services Data Warehouse –

MDHHS will be adapting and expanding its use of the data warehouse as it completes the acquisition and transition to a new Child Welfare application, currently known as MiSACWIS. Additionally, there will be an

increased need to set up and implement self-service reporting in all of the major programs (Eligibility, Child Welfare, and Child Support). There will also be a transition effort in ETL services to move from “home-grown” scripting and data loads to using a COTS/GUI interface with more built in tracking and auditing capabilities.

The Staff Augmentation delivery process will continue to be used for Human Services positions, where, the “Staff Augmentation” delivery process is defined as:

Roles:

- DTMB Program Manager as I/T owner
- MDHHS Agency Program Manager as business owner
- Contractor Contract Administrator as business intelligence services provider, i.e., providing business and I/T expertise

Delivery Process:

- The MDHHS Project Management Governance specifies each Human Services project to the DTMB Program Manager
- Contractor staffing resources work under the direction of the DTMB Program Manager who specifies Contractor staff roles, priorities, and specific project allocation levels
- Contractor provides staffing resources with the DTMB defined skillset to work alongside DTMB resources under the direction of the DTMB Program Manager.

Standards:

- Contractor staff will be managed by DTMB including project assignment, workload, and technical direction/implementation as determined by the DTMB Program Manager.
- Contractor staff will be located with the DTMB manager and team to which they are assigned, as determined by the DTMB Program Manager.
- Projects on which Contractor staff are working will be managed by State project managers supplied by DTMB/EPMO.

DTMB and MDHHS will phase out Project Augmentation delivery and move to Staff Augmentation delivery to be consistent across both Health and Human Services Data Warehouse program support. This transition will be done incrementally and be completed by the end of this contract year (i.e. 12/20/2020) pending contract renewal to 12/20/2020, with timelines determined by the DTMB Program Manager. Contractor movements from Project Augmentation to Staff Augmentation will be documented through a Change Notice to the Contract by submitting a Change Request to Contractor that shall describe the specifics associated with any move from Project Augmentation delivery to Staff Augmentation delivery. Such Change Request shall include, without limitation (a) the resources and scope of work that would be subject to such move, (b) the timing of the desired move and (c) any other changes to this Work Request. Contractor shall not withhold or delay providing a response to such Change Request but instead shall provide a Change Request Proposal to the State within ten (10) business days following receipt of the Change Request. Cost will be subject to the rates as defined in this Change Notice. Once the details of the Change Request Proposal or any modifications thereto have been agreed upon, DTMB and Contractor shall enter into a replacement Work Request.

Description of Services:

Michigan Department of Technology, Management and Budget (DTMB) has issued this Work Request to obtain the following positions to support, maintain and execute enhancement projects of various sizes for the MDHHS Data Warehouse:

For this extension, 2 new SIGMA DOIT1 requests will be initiated to issue one DOIT1 for \$983,258 (from Table 1 - part 1) to fund The Health Services Data Warehouse, and a separate DOIT1 for \$373,653 (from Table 1-part 2) to fund the Human Services Data Warehouse for 1 month. Period of coverage to be 12/21/2019 to 1/20/2020. Both parties agree that this Work Request forms an integral part of a Change Notice to the Contract that provides for a 1 month extension of the Term of the Contract through 1/20/20.

For Health Services Data Warehouse (52 resources = 39 full-time and 13 part-time):

- Four (4) Data Warehouse Project Manager
- Two (2) Data Warehouse Architect
- One (1) Data Warehouse Database Administrator

- Ten (10) Data Warehouse Developers Senior
- Zero (0) Data Warehouse Developers Junior
- One (1) Data Warehouse Designer/Modeler
- One (1) Data Warehouse Business Intelligence Report Developer
- Nine (9) Data Warehouse Business Intelligence Analysts Senior
- Two (2) Data Warehouse Business Intelligence Analysts Junior
- One (1) Data Warehouse Help Desk Analyst
- Eight (8) Data Warehouse Web Developers Senior
- Zero (0) Data Warehouse Web Developers Junior
- Thirteen (13) Subject Matter Experts

For Human Services Data Warehouse (16 full time resources):

- Two (2) Data Warehouse Subject Matter Expert – Child Welfare
- One (1) Data Warehouse Database Administrator
- Nine (9) Data Warehouse Developers Senior
- One (1) Data Warehouse Designer/Modeler
- Two (2) Data Warehouse Business Intelligence Analysts Senior
- One (1) Data Warehouse Business Objects Architect

This Work Request includes a total of sixty (68) Full Time Equivalents (FTEs), consisting of 55 Full-time and 13 part-time resources. The total number of FTEs may be increased or decreased throughout the life of this Work Request, based on department needs and available funding. The fifty-two (52) resources on the Health Services Data Warehouse and sixteen (16) resources on the Human Services Data Warehouse will continue to augment the Department of Technology, Management, and Budget (DTMB) Agency Services with development, support, maintenance and enhancements to critical projects for the Michigan Department of Health and Human Services (MDHHS) DW.

It is the State's intent to establish this Work Request for BI Services to be provided to DTMB, in support of MDHHS, for a time period defined above as the Extension Period.

The work performed via this Work Request will be on a time and materials basis.

PROJECT OBJECTIVE:

The objective of this Work Request is to assist DTMB with the development, support, maintenance and enhancement of MDHHS Data Warehouse applications, which is an on-going activity prompted by changes in federal and state regulations, evolving business needs, opportunities for improving business processes, continued software and hardware upgrades, and break fixes.

SCOPE OF WORK:

- The scope of this Work Request is to provide Data Warehouse Business Intelligence (BI) Services on an as needed basis to support, maintain, and execute enhancement projects of various sizes for the MDHHS Data Warehouse set forth in this Work Request.
- Develop and maintain Data Warehouse BI applications that support MDHHS's day-to-day business operations.
- Resources will become familiar with DTMB personnel roles, DTMB supporting MDHHS's business processes, and DTMB's State Unified Information Technology Environment (SUITE) and DTMB technical standards, controls, and procedures.

Required Skill Category Requested:

1. Data Warehouse Project Manager
2. Data Warehouse Architect
3. Data Warehouse Database Administrator
4. Data Warehouse Developer Senior
5. Data Warehouse Developer Junior

6. Data Warehouse Designer/Modeler
7. Data Warehouse Business Intelligence Report Developer
8. Data Warehouse Business Intelligence Analyst Senior
9. Data Warehouse Business Intelligence Analyst Junior
10. Data Warehouse Help Desk Analyst
11. Data Warehouse Web Developer Senior
12. Data Warehouse Web Developer Junior
13. Subject Matter Expert
14. Data Warehouse Business Objects Architect

TASKS:

REQUIRED TASKS

- The Contractor must attend security awareness training and any other relevant security and or confidentiality training requested by MDHHS and/or DTMB. Contractor staff must sign appropriate agreements or training certifications.

EXAMPLES OF ONGOING and UPCOMING CONTRACTOR TASKS

(these tasks may change based on direction from the State)

Health Services Data Warehouse

Contractors will provide support on a time and materials basis for the following Decision Support System (DSS) Advanced Planning Document (APD) Activities.

Detailed tasks for each Activity are listed in the APD for each fiscal year.

1. Develop Production Reports for the DW

- The Medicaid Enterprise relies on the DW for the majority of its production reporting, including reports needed for certification of federally funded source systems, extracts, and other production reports used to manage and evaluate MDHHS programs. This includes creation of new reports to align with new initiatives and/or program areas and enhancements to existing reports to correspond with source system changes. Users of these reports include, but are not limited to, MDHHS management and staff, the State legislature, federal agencies, counties, and providers.
- Production report development includes the following general tasks:
 - Map report data elements to corresponding data fields in the data warehouse
 - Conduct requirements gathering sessions to finalize requirements with MDHHS users
 - Develop, test and implement updated and new report versions

Examples of Specific Tasks include:

- Add or rewrite production reports in response to changes in CHAMPS, Michigan Statewide Automated Child Welfare Information System (MiSACWIS), Bridges, Michigan Child Support Enforcement System (MiCSES) and the corresponding data warehouse models. This includes reports needed for ongoing certification of CHAMPS, the T-MSIS extracts, and other production reports used to manage and evaluate Medicaid programs.
- Create and enhance production reports, queries and related data extracts as a result of:
 - New initiatives and programs (such as: Opioid Health Home; Section 298 of PA 107 of 2017 Behavioral Health Integration Pilots; GF Funding Methodology Reporting; nursing home Level of Care Determination [LOCD]; and Network Adequacy Reporting expansion)
 - Change in federal requirements (such as: Federal Section 1115 Pathway to Integration and Mosaic Waiver Implementation; and annual updates to CMS-416 and CMS-372 reports)
 - New activities/business requirements (such as: MMA/TBQ rewrite and Integrated Service Delivery; and reports as a result of Medicaid Eligibility and Enrollment changes)
- Enhance production reports to provide online access to electronic versions of reports
- Develop, test and implement additional performance measures as needed
- Create dashboards for display of measures summary data

- Expand T-MSIS to accommodate new federal requirements and new business requirements
- Generate and report measure rates to meet Medicaid business needs
- Develop new criteria and functionality for Performance Monitoring Reports to accommodate new business needs
- Create and/or update programs to support Payment Error Rate Measurement (PERM) Audit. (Create and submit data for CMS Review Cycle 2020 if requested.)
- Evaluate and implement additional reports needed to support the Medicaid Enterprise

2. Provide Updated Analytic, Reporting, Data Mining, and Web-Based Analytic Tools and Enhanced Analytic Capability

- The MDHHS vision continues to include the use of ad-hoc analytics, predictive analytics, Online Analytical Processing (OLAP), and data mining tools. The OLAP and data mining tools are needed to examine data from multiple perspectives, which will allow for the identification of emerging trends and cost savings. This allows MDHHS to answer complex questions by performing multi-dimensional analysis across data sets and programs and to drill up and down through successive layers of detail to uncover trends, relationships, and patterns for improved decision-making.
- Symmetry software will be used as part of an effort to improve utilization of administrative data for the purposes of quality of care monitoring, program reporting, risk assessment and coordination of care for beneficiaries, such as Healthy Michigan Plan, Medicaid, Children's Special Health Care Services and MI Health Link. The State will be able to more efficiently calculate and report quality of care measure rates for a wider selection of chronic and episodic conditions, as well as preventive activities (e.g., screenings) using evidence-based specifications produced and updated annually by national quality organizations. The State will also have the capability to use prospective analytics for the purposes of risk assessment.
- General Tasks in this activity include:
 - Upgrade Business Objects, BI Query, and Crystal Reports to support future needs of MDHHS. Utilize advance features of tool sets to include additional trusted data sources.

Examples of Specific Tasks include:

- For Symmetry Software:
 - Implement configuration and/or data input modifications as needed as a result of changes and refinements to business requirements
 - Expand result set to store additional results over time and to accommodate additional business needs
 - Develop additional queries to analyze results data and identify new areas of potential focus
 - Generate measure rates as requested for specific business needs
 - Transition additional measures to Symmetry, eliminating manually-generated, custom-coded measures
 - Explore and implement additional measures that add value to the Medicaid program
 - Assist in integrating beneficiary-level information into CareConnect360 and other applications
 - Perform miscellaneous ad hoc analysis as requested for specific business needs
 - Apply patch releases as needed to provide additional functionality and stay current with CMS (and other national standard) code sets and third party vendor support
- For BI Query:
 - Apply patch releases as needed to provide functionality needed by MDHHS and stay current with third party vendor support
- For Business Objects:
 - Apply patch releases as needed to provide additional functionality and stay current with third party vendor support
- Evaluate tools to align technology framework with MITA standards

3. **Identify and Load Additional Data Sets on the Data Warehouse**

- As new systems and data sources are developed that support the Medicaid Enterprise, they will be integrated with the data warehouse and existing MDHHS data. This data could be Medicaid-specific or could be non-Medicaid, but enhances the Medicaid program by increasing quality of care, improving outcomes, or reducing costs.
- The process to add these data sets includes: defining requirements, establishing a process to maintain history, developing load programs, establishing reconciliation processes with source systems, and integrating new data with existing data in the BI Query models.

Examples of Specific Tasks include:

- Add data needed to enhance the Medicaid Enterprise and to support:
 - New initiatives and programs, including:
 - Healthy Michigan Program (HMP3)
 - State Innovation Model (SIM)
 - Integrated Service Delivery (ISD) – e.g., add Success Plans, Needs Assessments from the ISD portal
 - Health Information Exchange (HIE)
 - Changes in Federal requirements
 - New activities and business requirements
- Add data to the Medicaid Enterprise, including:
 - Clinical Data and other data from the health information exchange, including continued analysis and development on Clinical Quality Measures to complete QRDA Category III summary data work, and expand to Category I detail data.
 - Admission, Discharge and Transfer (ADT) data – continue analysis of messages to determine which types and which content will be used for specific business purposes to benefit the Medicaid program (e.g., identify use cases and data needs, and implement corresponding solutions using this data; implement solutions to make the data available and usable to business users and applications)
 - Opioid-related data, including surveillance data and data needed for predictive indicators of high-risk situations and triggering of harm reduction strategies
 - Data related to Section 298 of PA 107 of 2017 Behavioral Health Integration Pilots
 - Data related to Federal Section 1115 Pathway to Integration and Mosaic Waiver
 - Electronic Visit Verification (EVV)-related data
 - Customer Service and Contract Management Database
 - Direct Care Worker Wage Data
 - State Hospital Census and Waitlist Data
 - Individual Placement and Support Data for Medicaid beneficiaries
 - Network Adequacy Monitoring-related data
 - Consolidated Clinical Document Architecture (CCDA) data related to Dual Eligible population, for incorporation into CareConnect360
 - FlexR data – the Flint Health Coalition is partnering with Michigan State University to create a registry for Flint Lead victims, and will need to integrate with MDHHS data; also includes Genesee Health Coalition
 - Data related to partnering opportunities with community based groups, such as Community Health Indicator Reports (CHIRS), Flint local groups
 - Social determinants of Health
 - Jail data for coordination and notification when beneficiaries with Substance Use Disorder (SUD) or behavioral health issues are detained (e.g., trigger CMH/PIHP activity to coordinate continuity of care)
 - MiPAD (Michigan Psychiatric Admission Data), to integrate with Medicaid and inpatient bed site data
 - Inpatient bed site data
 - Education data
 - STARLIMS data
 - HIV lab data
 - Level of Care Determination data from new/replacement source

- Integrated Care Bridge Record (ICBR) data. ICBR provides a comprehensive and detailed overview of the health of a member dually enrolled in Medicaid and Medicare and is shared between the care team members: Integrated Care Organizations (ICOs); Prepaid Inpatient Health Plans (PIHPs); and Integrated Care Team (ICT) to allow for person- centered care coordination. Storing the data in the data warehouse will provide a central location for retrieving the most recent and up-to-date member care plan.
- Care Plan Exchange for Children in Foster Care. Build on the ICBR infrastructure to facilitate exchange of electronic care plans between Eligible Providers and Medicaid Providers, for children in foster care (approximately 14,000). The care plans will include data extracted from CC360 (see Activity 5 for more information about CC360) and from the medical passport information housed in the Michigan Statewide Automated Child Welfare Information System (MiSACWIS).
- Newborn Screening data
- Michigan Disease Surveillance System (MDSS) data to improve disease tracking and monitoring of Medicaid beneficiaries through the integration of MDSS and the MDHHS data warehouse
- Military and Veterans Data
- Oral Health Initiatives data, including Michigan's Dental Registry (MiDR). MiDR data includes oral information and history of preventative oral health services provided to Medicaid patients
- Human Services data. Adding and/or establishing access to additional Human Services data through a data warehouse view (e.g., Poverty/Income, Race/Ethnicity)
- Detail-level Healthcare Effectiveness Data and Information Set (HEDIS) data from Medicaid health plans for use in evaluating performance measures
- Child Welfare Data, including Native American Tribal data and Statewide Automated Child Welfare Information System (SACWIS) data, including Juvenile Justice
- Cancer Registry data, including the implementation of Phase 1 of an automated load from the source system to the data warehouse to provide access to cancer case information on Medicaid beneficiaries and other MDHHS programs securely and electronically
- Corrections data
- Michigan Center for Educational Performance and Information (CEPI)/Education data
- Workforce Development Authority data
- Homelessness data
- CMH/ Active Care Relationship Service (ACRS) data
- Behavioral Health-related data
- Data sources needed for use by external systems that query data directly from the data warehouse, including the Core Fraud System and Third-Party Liability system (TED)
- Provider licensing data from the Department of Licensing and Regulatory Affairs for use in identifying and de-duplicating provider data
- Evaluate other data sources and add those that will benefit the Medicaid Enterprise.

4. Enhance Existing Data Loads in order to Stay Current with Corresponding changes to Source Systems, New Policies and Technologies

- As MDHHS rewrites source systems to align with new requirements and technology, the data warehouse will require corresponding enhancements in order to load and store new and updated data elements and provide query and reporting access to the data. Source system changes may be driven by federal or state initiatives. This activity also includes the development needed to update existing data warehouse load processes to include additional data for the Medicaid Enterprise, including adding source system data elements to an existing data warehouse load, even when that data was not newly added to the source system

Examples of Specific Tasks include:

- Rewrite existing data warehouse loads as a result of:
 - Source system rewrites and replacements
 - Source system additions and changes, including instances where additional data fields are available from an existing source system
- Add Maternal Infant Health Plan (MIHP) data as source system expands
- Expand Death Record load to move to real-time updates

- Develop automated process to load birth records from the Birth Registry System to replace current manual process. This will improve accuracy, efficiency and timeliness of data loads
- Develop automated process to load Michigan Childhood Lead Poisoning Surveillance (MiCLPS) data from the source system (replaced legacy source system with replacement source system, but process is not yet automated – direct feed will be implemented in FY19)
- Create reconciliation processes between the data warehouse and existing source systems to ensure accuracy and completeness of data in the warehouse
- Update and enhance GLP to keep current with changes to existing data warehouse jobs, evaluate opportunities for enhancements to improve efficiency and accuracy, and implement those that will benefit the Medicaid Enterprise
- Evaluate potential source system changes as a result of new policies and technologies, and implement those that will benefit the Medicaid Enterprise
- Source system updates to accommodate enhancements to new financial system (SIGMA)
- Evaluate other ETL Tools such as IBM DataStage to improve efficiency and standardization on tool sets with DTMB.

5. Develop Web Applications to Support Medicaid Programs and Processes

- This activity will develop and enhance data warehouse web applications to streamline processes in support of Medicaid programs, automate workflows, provide integrated data delivery, and provide tracking and reporting of Medicaid beneficiaries and programs.
- Users of these web applications include, but are not limited to: MDHHS; Medicaid Health Plans; Prepaid Inpatient Health Plans (PIHPs); Community Mental Health organizations (CMHs); and Integrated Care Organizations (ICOs).

Examples of Specific Tasks include:

- Design, develop, and implement new web applications and modules to support the Medicaid Enterprise
- Design, develop, and implement modifications to existing web applications to accommodate new business needs, such as adding data sets and new functionality. This also includes adding additional phased implementations, such as integration with Symmetry measures. Some specific examples include:
 - Beneficiary Monitoring Program (BMP):
 - Geocoding for Pharmacies
 - Addition of PIHPs and CMHs
 - Enhancements, such as addition of Symmetry measures (e.g., episodes, risks) for BMP research
 - Waiver Support Application (WSA):
 - Implementation of Brain Injury Waiver within WSA, once approved by CMS
 - Implementation of new policies/procedures in CWP and SED Waivers
 - CareConnect360 (CC360):
 - Expand CC360 functionality, including expanded triggers/notifications to alert care coordinators when certain events occur or specific criteria exists
 - Expand CC360 user access and implement corresponding security for additional areas, including Population Health staff and Opioid project staff.
 - Add data sets to CC360, such as Homelessness data, Medicare claims (currently only available to ICO care coordinators), immunizations, expanded ADT data elements, death detail (e.g., cause of death, date of death), ISD (e.g., Success Plans and Needs Assessments; see Activity 3), new summary/beneficiary level Symmetry data, CCDA data for Dual Eligible population, Opioid-related data, data to align with MHP/PIHP contract metrics (e.g., new non-FFS methods of payment), data for coordination with community based groups, jail data, Medical Passport data, and MIPAD data.
 - Create web services to be called by other applications; includes migrating existing CC360 code to web services modules
- Design, develop, and implement enhancements to align with new initiatives and programs, changes in Federal requirements, and new activities and business requirements, such as rate changes and criteria updates

- Develop and implement Disaster Recovery process for web applications
- Add data needed to support functionality within web applications such as Episodes, Risk, and Predictive Analytics
- Evaluate opportunities for new or enhanced web applications or modules and implement those that will benefit the Medicaid Enterprise, for instance, incorporation of new data added in the data warehouse, family support and family preservation opportunities, and comparisons across programs.

6. Create and Manage Metadata for the MMIS IT Architecture, and Provide BI-Administration Capability for Management of Security Data and Models

- Metadata and field mapping will provide information on the descriptions and uses of the data, flow of the data through the system, and relationship to the Community Health Automated Medicaid Processing System (CHAMPS) and other systems. These processes will also provide information on the transformation and cleansing procedures as well as an assessment of data integrity. This information will be especially useful to analytic staff that may not be familiar with the operational detail of the data.
- This Activity includes implementation of enhanced security measures and access processes to support policies, technologies and audit requirements, including password rules and expiration timeframes, data encryption, and enhanced Roles and Profiles. This work will leverage new capabilities that become available through upgrades to existing software.

Examples of Specific Tasks include:

- Develop and implement new capabilities as a result of the Teradata software releases
- Assess and implement Security solutions
- Create new roles/access/security for new initiatives and programs, changes in federal requirements, and new activities or business requirements
- Identify, design, develop, test and implement audit controls and solutions to address findings of data warehouse audits, including Information Security Improvement Plan (ISIP)
- Perform remediation activities related to completion of the System Security Plan
- Test and implement Disaster Recovery plan for data warehouse; update/develop new Disaster Recovery plans/processes based on Disaster Recovery Test
- Create new models as new data is added as a result of new initiatives and programs, changes in Federal requirements, and new activities or business requirements
- Evaluate and implement enhancements to data warehouse operability and access that will benefit the Michigan Enterprise

7. Provide Additional Data Integration across Program Areas and Continue to Enhance Architecture to Align with MITA Initiative

- This activity will enhance the data warehouse architecture by developing data exchanges between the data warehouse and MDHHS partner organizations such as health plans and the Michigan Health Information Network (MiHIN). By making additional data available to partner organizations, these secure data exchanges promote efficient and effective data integration and sharing for the purpose of improving outcomes for MDHHS beneficiaries.
- This activity will expand the use of the Cause-and-Effect Model to assess other events that may be contributing to successes or shortfalls in programs, interventions, and outcomes. This will also allow MDHHS to collaborate with other departments or agencies to improve outcomes. This also enhances architecture to align with the Medicaid Information Technology Architecture (MITA).
- Finally, this activity will develop and enhance solutions to integrate MDHHS data across program areas, data sources, and other departments and agencies to provide improved ability to identify cross-population, and therefore allow improved tracking and analysis of MDHHS beneficiaries. Examples include creation of BI Query models to integrate data across programs, creation of de-identified databases to allow reporting and analysis of data across programs, creation of event-based models to allow longitudinal reporting and analysis of data across programs, creation of data marts, and creation of Views to provide access to data across program areas. This also enhances architecture to align with

MITA.

- Note that this does not include changes to existing data loads needed to integrate or share data across programs, such as the addition of new data elements to an existing data load, which is covered in Activity 4, “Enhance Existing Data Loads”.

Examples of Specific Tasks include:

- Enhance the Cause-and-Effect model previously developed for State Homeless Analysis Data online Warehouse (SHADoW). This de-identified database of homeless client service activity allows authorized personnel at homeless and health and human service provider agencies to share client service delivery activity information. The data is used to analyze inter-organizational datasets for the purpose of investigating and understanding the relationship between public policy and various Medicaid programs in Michigan.
- Assess events that may be contributing to successes or shortfalls in programs, interventions, and outcomes. This allows MDHHS to collaborate with other departments and agencies to improve Medicaid outcomes.
- Expand integration of MDHHS Eligibility data with Michigan Child Support Enforcement System (MiCSES), MiChild Eligibility, Vital Records, Third-Party Liability (TPL), and Central Paternity Registry (CPR) to assure appropriate insurance coverage. This permits identification and source system data updates or corrections.
- Design, develop, and implement solutions to integrate data across program areas, data sources, and departments and agencies to improve the ability to identify cross-populations, improve health of Medicaid beneficiaries, identify needed services, and provide analytic ability. Examples include:
 - Opioid-related data, including surveillance data and data needed for predictive indicators of high-risk situations and triggering of harm reduction strategies
 - Data related to Section 298 of PA 107 of 2017 Behavioral Health Integration Pilots
 - Data related to Federal Section 1115 Pathway to Integration and Mosaic Waiver
 - Electronic Visit Verification (EVV)-related data
 - Customer Service and Contract Management data
 - Direct Care Worker Wage Data
 - State Hospital Census and Waitlist Data
 - Individual Placement and Support Data for Medicaid beneficiaries
 - Network Adequacy Monitoring-related data
 - CCDA data related to Dual Eligible population, for incorporation into CareConnect360
 - FlexR data – the Flint Health Coalition is partnering with Michigan State University to create a registry for Flint Lead victims, and will need to integrate with MDHHS data; also includes Genesee Health Coalition
 - Data related to partnering opportunities with community based groups, such as CHIRs, Flint local groups
 - Social determinants of Health
 - Jail data for coordination and notification when beneficiaries with SUD or behavioral health issues are detained (e.g., trigger CMH/PIHP activity to coordinate continuity of care)
 - MiPAD (Michigan Psychiatric Admission Data), to integrate with Medicaid and inpatient bed site data
 - Inpatient bed site data; link with SUD data
 - Education data
 - STARLIMS data
 - HIV lab data
 - Level of Care Determination data from new/replacement source
- Design, develop, and implement additional Address Cleansing functionality for data sources
- Design, develop, and implement new data marts or expansion of existing data marts, including:
 - Expansion of Measures data mart to store new results over time, and to accommodate additional business needs
 - Clinical data repository, for use in Medicaid projects
- Upgrade existing ETL processes to improve data load processes, reduce development and maintenance costs and risk, and minimize differences between data warehouse and source system data

- Expand use of MI Health Link geo mapping. This can have many uses, including validating the appropriate network of providers within a given time and distance.
- Evaluate and expand integrations with HIE (Health Information Exchange), including interactions with the MDHHS Data Hub and MiHIN (activities that are not covered under other APDs, Advanced Planning Documents). This includes the creation of a Department of Licensing and Regulatory Affairs (LARA) file containing Provider enrollment data to send to MiHIN for inclusion in the Health Directory
- Evaluate and implement integration solutions that will benefit the Medicaid Enterprise

8. Provide onsite analytic development for the various program models, and analytic tools

Examples of Specific Tasks include:

- Update CHAMPS model-specific training manuals
- Develop and deliver comprehensive training to educate end users on the use of the data based on updated CHAMPS and BRIDGES requirements
- Provide comprehensive training to help end users understand the business, and educate them on the relationship between the CHAMPS data and the Medicaid program. This will include development of materials for instructor-led classroom training as well as development of web-based training.
- Develop and deliver comprehensive training to educate developers on updated DW structures and the use of data based on CHAMPS and BRIDGES requirements
- Provide comprehensive training to help developers understand the business, and educate them on the relationship between the CHAMPS data and the Medicaid program
- Provide first-line Help Desk Support to answer end user and developer questions related to the newly defined data models
- Provide advanced analytic support and development at a level above the typical user's business and technical knowledge

9. Enhance the Data Warehouse as a Result of CHAMPS, Bridges and MiSACWIS in order to Stay Current with Corresponding Changes to Source Systems, New Policies and Technologies

- This activity will implement changes to database structures, models, views, reconciliation processes, and Extract, Transform, Load (ETL) processes for both Staging and Production tables, as a result of changes to the source systems. These changes will include derived fields and any work related to corresponding software upgrades. For example, the Community Health Automated Medicaid Processing System (CHAMPS) subsystems include:
 - Provider (PE)
 - Eligibility and Enrollment (EE)
 - Contracts Management (CM)
 - Claims and Encounters (CE)
 - Reference (BA)
 - Lookup Tables (LU)
 - Financials (OFIN)
 - Third Party Liability (TPL)
 - Master (MT)
 - Prior Authorization (PA)
 - Medicaid Electronic Health Record Incentive (EHR)
- The activity will also develop and enhance processes to extract data from the data warehouse to be used for on-going production data loads to source systems. These data are used for purposes such as adjudicating claims in CHAMPS, determining eligibility in Bridges, such as extracts for Waiver enrollments, mental health eligibility, and trusted data sources for eligibility determination.
- Finally, the activity will implement changes to the Eligible Months data mart as a result of changes to source systems.

Examples of Specific Tasks include:

- Design, develop, and implement enhancements to align with new initiatives and programs, changes in federal requirements, and new activities or business requirements, such as new Waivers, Healthy Michigan Plan enhancements, Dual Eligibles, Clinical Quality Measure Recovery and Registry Service (CQMRR), Juvenile Justice, Medical Passport, Level of Care Determination Passive Redetermination, Dental Choice, Provider Screening/Ownership, Electronic Visit Verification and Opioid Health Home. Source system updates to accommodate these changes result in corresponding changes to the data warehouse, including:
 - Data warehouse Load programs (ETL) and processes
 - Data warehouse views
 - Database structures
 - Data models
 - Data conversion
 - BI Query models
- Design, develop, and implement reconciliation programs to validate completeness and accuracy of data between CHAMPS and data warehouse (new subsystem). Also make required changes to existing reconciliation programs and create new reconciliation programs as needed.
- Develop and implement updates and expansions to Eligible Months Table to reflect changes in CHAMPS and Bridges, such as:
 - HMP3
- Additions and changes to Medicaid Benefit Plans
 - LOCD replacement
- Review and evaluation of existing data elements
 - Data mapping and implementation of identified enhancements
- Evaluate other changes related to this Activity, and implement those that benefit the Medicaid Enterprise

10. Enhance the Program Integrity Process

- Healthcare fraud significantly impacts the Medicaid program by using up valuable public funds needed to help vulnerable children and adults access health care. This activity will support the enhancement of the Program Integrity (PI) process through the design, development, and implementation of data warehouse solutions to support identification and investigation of fraud related to Medicaid and other MDHHS programs.
- This activity also includes integration with Michigan's Core Fraud System.

Examples of Specific Tasks include:

- Review and update newly developed queries by PI staff to improve efficiency and ensure data completeness and accuracy
- Expand database and processes to support PI, as needed to accommodate PI business needs
- Participate in ongoing project meetings to gather requirements for future design, development, and implementation solutions
- Create complex queries and analytics for use by PI staff for fraud identification and investigation
- Enhance or create new databases and load processes to store data received during investigations and link that data to Claims & Encounter data
- Design, develop and implement Ad Hoc reporting tables in the data warehouse for PI purposes
- Integrate further with i-Sight (case management system)
- Evaluate other Program Integrity-related activities and implement those that benefit the Medicaid Enterprise

11. Build Systems to Load and Access Pharmacy Data on the Data Warehouse

- Pharmacy data is loaded directly to the data warehouse and thus does not go through Michigan's MMIS, Community Health Automated Medicaid Processing System (CHAMPS). This includes the pharmacy claims processed by the Medicaid program's Pharmacy Benefit Manager (PBM), pharmacy encounters

submitted by Medicaid Health Plans and Prepaid Inpatient Health Plans (PIHPs), supporting data (National Drug Code, or 'NDC', CMS, rebates, etc.), Medicaid Managed Assistance/Territory Beneficiary Query (MMA/TBQ) processes, extracts to Health Plans, and other corresponding activities.

- This activity includes all the work related to bringing the data into the data warehouse (e.g., creating database structures, models, views, data load programs, adjudication logic, error/return processing), integrating it with other MDHHS data, particularly CHAMPS, and creating queries, reports, extracts and applications to support the Pharmacy program.

Examples of Specific Tasks include:

- Design, develop, and implement modifications to align with new initiatives and programs, changes in federal requirements, and new activities or business requirements
- Evaluate other opportunities for improvements to Pharmacy processes and implement those that will benefit the Medicaid Enterprise

12. Develop Web-Based Security Application

- The Database Security Application (DSA) foundation provides an automated web-based workflow and corresponding database for requesting and approving access to MDHHS systems such as data warehouse, FileNet, and Community Health Automated Medicaid Processing System (CHAMPS).
- This Activity includes:
 - Enhancements to technical framework
 - Creation of new “forms” within DSA for requesting access to MDHHS systems
 - Enhancements and additional functionality to existing forms
 - Development of training modules, both web-based and training manuals
 - Development of other necessary end user training materials

Examples of Specific Tasks include:

- Design, develop, and implement additional forms within DSA for requesting access to additional MDHHS systems, such as:
 - Health Services Data Warehouse Developer Access
 - Health Services Data Warehouse Expedited Access
 - Michigan Statewide Automated Child Welfare Information System (MiSACWIS) Data Warehouse
 - MiSACWIS source system
 - Bridges
- Add functionality and implement modifications to existing forms within DSA, such as:
 - Automated provisioning for WSA forms
 - Develop additional backup functionality
 - Develop new Admin role functionality to accommodate growth and expand outside of Compliance
- Integrate user information from non-DSA provisioning systems/databases with data in DSA. This will provide MDHHS with a complete picture of an individual's access across systems, via a single source application.
- Integrate DSA Issue Tracks to JIRA system, to allow more sophisticated task tracking
- Development to accommodate new access controls/security requirements in source systems
- Development to accommodate access to additional data sets and/or additional source system roles
- Develop process to compare approved level of access in DSA with actual access in source system
- Develop process to manage security of employee notifications from Human Resources (departures, position transfers, new hires) and integration with the Human Resource application. Actions include terminations of access, alerts to system owners, notifications to former and new managers, etc.
- Develop processes to integrate DSA into additional systems, so that when a new user logs into a system, DSA is automatically invoked from that system, rather than the user having to log into DSA separately to submit a request for access
- Evaluate other DSA-related opportunities and implement those that will benefit the Medicaid Enterprise

13. Develop and Configure the Master Person Index (MPI) and Provider Index (PI), and retire Unique Client Identifier (UCI)

- IBM InfoSphere will be used to build the Master Person Index (MPI) and the Provider Index (PI). IBM InfoSphere accepts incoming data and uses logic, rules, and algorithms to compare the incoming data with existing records. The comparisons produce scores that indicate which records are likely to represent the same entity. IBM InfoSphere then links incoming and existing records that meet or exceed a specified threshold.
- IBM InfoSphere will be configured for multiple indices: beneficiaries, providers, health plans, and other health care entities.
- Prior to using IBM InfoSphere, MDHHS used the Unique Client Identifier (UCI), which was developed in 2001 using custom code from the US Census. The UCI links person-level records from one database to another by evaluating the available data elements such as name, address, IDs (beneficiary, client, and consumer) to determine if a match exists. When a match exists, a UCI is assigned that is used in all the databases. Once linked, they remain linked unless manually removed.
- Although UCI is being replaced with IBM InfoSphere, a Commercial Off-the-Shelf (COTS) product, MDHHS is still using UCI to validate the MPI. However, MDHHS is planning the transition to fully retire UCI.
- There are two primary methods for Data Sources to interface with MPI:
 - Batch process through the Enterprise Data Warehouse (EDW) – facilitates secure data sharing with minimal need for sending data between parties (data can be shared via service account access)
 - Real-time through the Health Services Enterprise Service Bus (ESB) – allows users to control their interactions with MPI and provides real-time sharing opportunities
- Adding a new Data Source to MPI includes the following activities:
 - Establish appropriate Data Sharing Agreements
 - Establish connections to the ESB or EDW and MPI
 - Configure source in MPI
 - Initial data load
 - Initial data analytics
 - Onboard Source Data Stewards and Owners to MIDSP
 - Work described in this Activity regarding integration with other systems is limited to development at the MPI/PI and funding is requested in this APD. Corresponding effort at the other system will be described and the funding requested in a separate APD, appropriate for that system.

Examples of Specific Tasks include:

- Expand Service Offerings. The following MPI service offerings extend the existing platform to centralize the data matching process for MDHHS. This simplifies data sharing, allowing different areas of MDHHS to more easily collaborate. The expanded service offerings provide additional integration options for source systems, improve the quality of data within the MPI, and facilitate better sharing between MDHHS and other organizations. Expanded service offerings include:
 - Complete Algorithm Review and Enhancement to meet additional business needs identified in Phase 1
 - Develop new MPI functionality to support:
 - Merges and unmerges
 - Other performance improvements
- Onboard new Data Sources and Users. Each additional data source improves linking and matching for Medicaid and contributes to providing a centralized, integrated 360-degree view of an individual. Additional MPI data sources planned for FY19-FY20 include:
 - Public/Behavioral Health Systems. This will allow the Medicaid Program to identify which beneficiaries are also included in other registries, in order to analyze trends and provide targeted outreach. Public/Behavioral Health Systems data to be added includes:
 - Michigan Disease Surveillance System (MDSS)
 - Maternal Infant Health Program (MIHP) – [Initiate Integration Planning]
 - HIV Systems
 - HIV Laboratory Management System (HIVLIMS)

- Enhanced HIV/AIDS Reporting System (EHARS)
- Michigan Drug Assistance Program (MIDAP)
- Develop Strategic Plan for MDHHS vision for Managing Provider Information, to give input into planning for a Provider Index (PI)
- MPI Distribution of Death Notices – Develop a new death notice service for the Master Person Index (MPI). This service will notify systems, who contribute their population to the MPI and subscribe to the service, when a certified death record links (or unlinks) to one of system's records in the MPI.
- Continue development and implementation of governance structure and supporting documentation
- Monitor algorithms and system configuration, recommend and implement enhancements for performance improvement of InfoSphere
- Continue migration from UCI to MPI as data sources are added to MIDSP
- Onboard additional new sources to use MIDSP (e.g., Vital Records (non-death))
- Develop and deploy additional MIDSP workflows for Potential Overlays and Review Identifier Tasks
- Create MIDSP reports to monitor Data Steward and Data Owner Activities
- Develop and deploy additional MIDSP features to improve Data Steward usability
- Complete MPI Algorithm analyses, reviews, and updates
- Develop an Enterprise MPI service model utilizing a cost allocation method between Medicaid and non-Medicaid applications
- Education (CEPI) – to help coordinate outreach programs aimed at school children; this includes cases such as outreach for free/reduced lunch, and linking a school's student population to the immunization history in the Immunization Registry, for immunization outreach
- Evaluate other integrations with MPI and PI and implement those that add value to the Medicaid Enterprise

14. Enhance DW Operability and Access

- Analysis and development to optimize query and system performance will reduce DW usage costs by improving efficiency and reducing storage space. Analysis of CHAMPS DW usage will be performed to determine areas for improvement (e.g., rewrite queries, add statistics, and add/remove indexes to align with user access to data, compress databases). Solutions will then be identified, developed and implemented to address the identified areas for improvement.
- Also includes patch releases as needed to provide functionality needed by MDHHS and to stay current with third party vendor supported hardware and software including Teradata.

Examples of Specific Tasks include:

- Develop code to analyze databases and queries, identify potential areas for enhancement, develop and implement solutions
- Develop and implement changes required to meet audit requirements
- Test and implement Disaster Recovery Plan for data warehouse
- Test and implement enhancements to accommodate Teradata software upgrades and patch releases
- Evaluate and implement enhancements to data warehouse operability and access that will benefit the Medicaid enterprise

15. Develop Queries and Extracts to Support the Medicaid Enterprise

- The data warehouse is a critical component of Medicaid and other MDHHS programs. It is the primary source of information for business operations, actuarial functions and day-to-day queries.
- It is also the primary source of information for audits, research, lawsuits, Freedom of Information Act (FOIA) requests, and other similar requests for data. These requests typically require response within a short timeframe and require knowledge of both Medicaid and the data warehouse.
- General Tasks include:
 - Develop and update queries and BI Query reports

- Develop and update data extracts

Examples of Specific Tasks include:

- Develop code to extract data for:
 - Integrated Service Delivery (ISD)
 - Public Act 107 requests, which require that data be available for 3 years
 - Actuarial extracts to Milliman for specific requests outside of the monthly production extract. For example, non-routine rate-setting and risk identification purposes, or specific populations or data sets
 - Extracts to provide information used to analyze impacts of new initiatives, identify participating populations, assess utilization and gaps in services, evaluate programs and processes (e.g., extracts to Altarum for evaluating Dental services, and for FFS/Encounters, for collaboration with community based groups for coordination of care efforts, for opioid project, for new waivers, and for Section 298 of PA 107 of 20176 Behavioral Health Integration Pilots)
 - Extracts in response to Audits
 - Responding to requests for Freedom of Information Act (FOIA) information
 - Responding to requests from the Legislature
- Evaluate other requests for extracts and information, and provide responses as required

16. <Intentionally blank>

17. Management of the MDHHS Data Warehouse/Decision Support Effort

- Provides strategic planning and management at various levels, from a task level through Activity levels and as part of a departmental-level oversight effort.

18. Design, Development, and Installation of the MDHHS Business Glossary and Metadata Management Roadmap

- Data assets are a critical component of Medicaid and other MDHHS programs. The Data Warehouse is the primary source of information for business operations, actuarial functions and day-to-day queries.

- General Tasks include:

- Develop and implement high-level structure for MDHHS Data
- Develop and Establish Business Glossary for Medicaid Area, expanding to Department- wide inventory, catalog, and classification of data assets

Examples of Specific Tasks include:

- Phase 1: Initiate and Establish Solution
 - Medicaid
 - Complete configuration of the IBM InfoSphere tool
 - Build Business Glossary (Terms, Definitions, and Data Elements) for Medicaid Area
 - Provide training and orientation for ongoing business glossary build-out
 - Complete Data Classification of data assets within the Medicaid Area
 - Develop Interface maps from MDHHS source systems to the data warehouse, including transformation rules, frequency of updates, and data dictionaries (Complementary, non-duplicative work related to Metadata is included in Decision Support System IAPDU Activity 6, "Create and Manage Metadata for MMIS IT Architecture, and BI-Administration Capability for Management of Security, Data, and Models.")
 - MDHHS (not funded by this Activity)
 - Provide Training and Orientation for ongoing Data Classification for other areas
- Phase 2: Mature Solution and Ensure Adoption
 - Medicaid
 - Build-out Technical Metadata for Medicaid
 - MDHHS (not funded by this Activity)
 - Build-out Business Metadata for other business areas
 - Build and expand Business Glossary into additional Business Areas (e.g., Child Support, Child Welfare, Eligibility)

- Provide training and orientation for ongoing business glossary build-out
- Support department-wide data classification
- Establish Department-wide adoption of tool
 - Repeatable Framework for MDHHS to manage and maintain tool
 - Train and orient department for ongoing development and maintenance
- Phase 3: Establish Steady-State (not funded by this Activity)
 - MDHHS
 - Continue adding more Business Areas (e.g., Eligibility, Child Welfare)
 - Embed Business Glossary Solution into MDHHS IT lifecycle for projects, programs, and operations

19. Data Warehouse Modernization – on hold for FY20; to be prioritized in FY21

Human Services Data Warehouse

Contractors will provide support on a time and materials basis for the following activities.

1. Renovation and replacement of Child Welfare application (MiSACWIS)
2. Federal and State Reporting, including court ordered reporting
3. Run production reporting on the data warehouse
4. Provide updated analytic, reporting, data mining, and web-based analytic tools to enhance the analytic capability of the staff
5. Identify and load additional data sets on the data warehouse
6. Changes to existing data loads in order to stay current with enhancements to source systems: MICIS data sets
7. Provide onsite analytic development for the various program models, and analytic tools
8. Enhance the data warehouse as a result of BRIDGES, Child Support, Child Welfare changes.
9. Develop Queries and Reports to support BRIDGES, Child Support, Child Welfare Programs
10. Design, Development, and Installation of the MDHHS Business Glossary and Metadata Management Roadmap
11. Data Warehouse Modernization – on hold for FY20; to be prioritized in FY21

IT Classifications/Skills Set and Tasks:

The requirement is that the individual must possess the skills, knowledge, and experience required to perform the duties effectively and efficiently at the level specified in the work request. Below are standard role descriptions, each with an example list of responsibilities. All listed responsibilities may not be required for a specific position.

- **Data Warehouse Project Manager**

Data warehouse project manager manages the integration and/or development and delivery of very large and complex deliverables directly to the customer. This position provides the primary interface between the Contractor, the State and third-party providers.

- Establishes and manages the project plan, according to SUITE standards, including the development schedule, resource requirements and integration efforts of third-party products. Periodically reports progress to State management.
- Motivates and directs project team; sets goals, objectives and priorities; assigns and reviews work.
- Acts as the primary interface with the DTMB on issues regarding the project deliverable. Makes sure customer reviews are held with the customer user community and obtains sign-off on status reports and requirements.
- Works with DTMB to ensure approved methods, processes and tools are consistently used.
- Is accountable for meeting project schedule and results as well as for the State customer satisfaction and quality of the deliverables.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.
 - Facilitate user groups to encourage self-support among end user and developers
 - Facilitate requirements sessions and discussions with end users/business owners to gather information needed to understand business needs

- o Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs. Assists DTMB and MDHHS with documentation for managing the data warehouse such as presentations, reports and Advanced Planning Documentation (APD) to be submitted to CMS for funding.

Required Experience

- Bachelor's degree or equivalent technical study
- 5+ Years Project Manager or Team Lead Experience.
- 5+ Years Data Warehouse Business Intelligence / Experience.
- 3+ Years Teradata DW Experience.
- The following knowledge/experience may also be required for some roles:
 - o SQL Assistant experience
 - o Business Objects Training experience
 - o Business Objects report development
 - o Medicaid, Child Welfare, Public Assistance Eligibility & Benefit Determination, or Families & Children (US Department of Health & Human Services) knowledge.
 - o Teradata Utilities experience
 - o SUITE Methodology experience

- **Data Warehouse Architect**

Data warehouse architect designs total solutions involving multiple systems for large organizations. Participates/leads in the construction of models and pilot programs with senior level managers.

- Conducts model and pilot programs to test proposals or develop solutions to problems. Develops measurement criteria to evaluate programs and projects and develops or reviews estimates on technical aspects of projects.
- Responsible for data warehouse database design and providing technical direction to modelers, data analysts, ETL developers, and database administrators.
- Develops design proposals to meet DTMB and MDHHS needs
- Approves integrated systems design proposals for technical content.
- Monitors the implementation for technical correctness so that MDHHS needs are met.
- Identifies, analyzes and evaluates alternative design solutions.

Required Experience

- Bachelor's degree or equivalent technical study
- 6+ Years Data Warehouse Architect and Modeling Experience.
- Teradata Version 15/16 (or higher) Experience.
- Teradata Utilities Experience.
- 2+ Years Data Warehouse Administrator Experience.

- **Data Warehouse Business Objects Architect**

Is responsible for the availability, security, and usefulness of the MDHHS BO environment. This may include tasks such as:

- Verification of all BO user's login accessing MDHHS BO universes.
- Monitoring the MDHHS BO environment assuring that it is running with optimal performance.
- Testing the availability of all universe connections to respective DW databases.
- Verifying user activities and BO module activities from Web Intelligence Console.
- Troubleshooting any issues with reports (Technical support to End Users).
- Regular BO repository maintenance like Cleaning Orphaned Connection/Universe/Documents Scan / repair and compact to all repository errors and domain testing.
- Running integrity checks on all MDHHS BO universes to ensure through parsing (Syntax/Semantic checking).
- New BO universe development and modification.
- Data mapping to new tables in the universes.

- BO resource allocation like linking universe and documents to users and user groups.
- Meeting with BO users to discuss supporting issues.
- Help with end user training.
- Is expected to be able to work with agency requestors to define and develop new reports, and provide training and technical support to both DTMB developers and end user query developers. Their report development tasks may include:
 - Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - Develop and present training classes for end user developers to help learn how to most effectively use the DW platform and the BI tools available to them to support their own data needs where possible.
 - Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the DW.
 - Provide one-on-one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- Bachelor's degree or equivalent technical study
 - 10+ Years BO Administrator experience
 - 5+ Years Business Objects Universe Development experience
 - BO Version 4.2 SP4 or higher
 - BO WEBi and InfoView Training experience
 - 5+ Years BO Report Developer
 - Crystal Reports experience
- **Data Warehouse Database Administrator**
DW database administrator (DBA) is responsible for the availability, safety and usefulness of the MDHHS data warehouse databases.
 - Working in conjunction with system administrators, perform server configuration to ensure that the entire database system is capable of providing the services needed.
 - Performance monitoring to identify bottlenecks and places where throughput can be improved.
 - Security administration to ensure that the database cannot be accessed by unauthorized parties or damaged by anyone.
 - Configure access to the data warehouse and communication between the warehouse and other servers.
 - Physical database design translates the logical database design to work optimally for the specific database environment.
 - Working with State DW developers and Compliance staff to establish standards and guidelines for access to MDHHS data warehouse databases.
 - Collaborate with DTMB to provide data/database integrity for software installation and updates; and backup and restore, including:
 - o Software installation and database management system upgrades
 - o Software upgrades so that the database is in compliance with critical security patches, or, software upgrades deemed necessary by the State.
 - Work with State DW developers and clients to optimize their queries.

Required Experience

- Bachelor's degree or equivalent technical study
- 4+ Teradata Database Administrator Experience.
- 2+ Teradata Version 15/16 (or higher) Experience.
- Teradata Utilities Experience.
- Teradata Manager Experience.
- SQL Assistant Experience.
- Linux/Unix Experience.
- Oracle Experience.

- **Data Warehouse Developer Senior/Junior)**

Data warehouse developers perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other MDHHS applications. In addition, they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Interact with Business Users and Subject-Matter Experts from the Michigan Department of Health and Human Services (MDHHS) to gather and document technical requirements and processes.
- Identify the key metrics that are to be reported from the MDHHS Data Warehouse using Business Intelligence (BI) tools.
- Create mapping and migration analysis documents.
- Develop the ETL (Extract, Transform and Load) scripts using Teradata Utilities (TPT, Bteq, FExports, MLOAD, Stored procedures and Data Marts) for Loading the Data from Source system to Target system by applying business rules as per the requirements
- Analyze MDHHS data warehouse needs and then design, test, and develop SQL Code/Reports software to meet those requirements
- Collaborate with Teradata DBAs, Data Modelers, Business Analysts and Business users to design and develop Teradata SQL code and Business objects reports.
- Design and develop data marts using Teradata SQL to be used in BI reporting to meet MDHHS needs.
- Design & develop the batch flow using Unix Shell Scripts to load data from Operational System to the MDHHS Data Warehouse.
- Perform Unit Testing and provide support during System Testing and User Acceptance Testing. Resolve the issues/defects identified during Testing.
- Performance tuning and optimization of ETL (Extract, Transform and Load).
- Design, develop, implement and maintain new reporting functionality and analytic applications across multiple business units using various business intelligence tools.
- Identify, design and develop the strategic reports that are to be reported from the MDHHS Data Warehouse using Business Intelligence (BI) tool.
- Create data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- SQL development
- Train developers and end-users in how best to design queries for a specific database.

DW Developer – Senior: Required Experience

- Bachelor's degree or equivalent technical study
- 6+ Years SQL Development Experience.
- Teradata Version 15/16 (or higher) Experience
- ETL Development using Teradata Utilities and Linux Experience.
- 6 Years Teradata Utilities experience
- 3 Years SQL and Performance Tuning
- Excellent written and oral communication skills
- Mentoring co-workers
- The following knowledge/experience may also be required for some roles:
 - o 3 Years SQL Assistant experience
 - o 3 Years Unix Shell Scripting experience
 - o Business Analyst experience

Data Warehouse Developer Junior

Data warehouse developers perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other MDHHS applications. In addition, they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Creating data warehouse-based applications including reporting, dashboards and other information analysis and delivery systems.
- Perform extract, transform, and load activities to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.

- Work with developers and end user query developers to design and improve database queries.

DW Developer - Junior: Required Experience

- 2+ Years SQL Development Experience.
- Teradata Utilities Experience.
- SQL Assistant Experience.

- **Data Warehouse Designer/Modeler**

Data warehouse designer is responsible for the database modeling and design for an efficient data warehouse objects structure. This involves defining the tables, keys and relationships that will allow an application to retrieve and update data correctly and efficiently.

- Will work with State and contract staff to ensure that the MDHHS DW models support the data, reporting, and analytic needs required for MDHHS.
- Working with end users and developers to understand the data needs of MDHHS clients.
- Documenting the data warehouse data involves including definitions, constraints and access needs.
- Creating and maintaining data warehouse logical designs, including Entity Relationship diagrams, which illustrate what data will be stored, how it is organized, how it can be retrieved (keys) and how it relates to other data in the database.
- Creating and maintaining data warehouse data definition language (DDL) that can be used to create and update the database.
- Working with Data Warehouse DBA and ETL developers, modify the logical design to create a physical design most suited to the database environment and the applications that will use it.
- Work with Data Warehouse ETL developers and DBA to create and maintain database design standards.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their report development related tasks may include:
 - Working with end user requestors to understand their data needs and create and implement solutions for those needs.
 - Develop and present training classes for end user developers to help them learn how to most effectively use the DW platform and the BI tools available to them to support their own data needs, where possible.
 - Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solutions using the DW.
 - Provide one-on-one support for developers and end users to assist them in accomplishing their data reporting needs.
- Perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other Agency applications. Their development related activities may include tasks such as:
 - Creating data warehouse-based applications including reporting, dashboards and other information analysis and delivery systems.
 - Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
 - SQL development.
 - Work with developers and end user query developers to design and improve database queries.
 - Train developers in how best to design queries for a specific database.

Required Experience

- Bachelor's degree or equivalent technical study
- 5+ Years Data Warehouse Modeling Experience.
- 5+ Years of SQL Development.
- Data Warehouse Architect Experience.

- **Data Warehouse Business Intelligence Report Developer**

Data Warehouse Business Intelligence Report Developer is expected to be able to work with agency requestors to define and develop new reports, and provide training and technical support to both DTMB

developers and end user query developers.

- Working with end user requestors to understand their data needs and create and implement solutions to those needs.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
- Develop and present training classes for DTMB developers to better understand how to use the data warehouse development tools to create and implement reporting solution using the data warehouse.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 5+ Years of Business Objects Report Development Experience.
- 5+ Years of SQL Development.
- Business Analyst Experience may be required.
- Excellent written and oral communication skills

- **Data Warehouse Business Intelligence Analyst (Senior/Junior)**

Data warehouse business intelligence/analyst works with end users to provide information in a number of different ways.

- Running JAD sessions to understand and collect business requirements, develop use cases and determine what data is needed and how it is likely to be used.
- Helping translate business requirements into technical specifications, e.g., ETL and report requirements.
- Analyzing data requests from various customers to define/determine requirements for modifications and enhancements to existing data warehouse/business intelligence systems.
- Creating ad-hoc queries to answer specific user questions.
- Helping design and specify data warehouse business solutions.
- Creating data warehouse-based applications including reporting, dashboards and other information analysis and delivery systems.
- Supporting end user to enable them to create their own queries and reports as needed.
- Identify data problems and work with developers to correct them.
- Working with developers and customers to assist in establishing test plans and data; validation of program/reporting functions; and preparation of necessary forms and documentation for implementation.
- Configuring data models and structures, e.g., business intelligence rules, and applications settings according to design specifications and departmental standards.
- Analyzing and recommending process improvements.
- Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
- Organize and run user groups to encourage self-support among end user and DTMB query and other data warehouse application developers.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
 - o Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - o Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
 - o Develop and present training classes for DTMB developers to better understand how to use the data warehouse development tools to create and implement reporting solution using the data warehouse.
 - o Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

DW BI Analyst – Senior: Required Experience

- Bachelor's degree or equivalent technical study

- 6+ Years Project Lead / Data Warehouse BI Analyst Experience.
- Training Experience.
- SQL Assistant Experience.
- Medicaid, child welfare or other specialty experience may be desired.

DW BI Analyst – Junior: Required Experience

- 2+ Years Project Lead / Data Warehouse BI Analyst Experience.
- Medicaid, child welfare or other specialty experience may be desired.

- **Data Warehouse Help Desk Analyst**

DW help desk staff provide first line support for end users and developers.

- Manages MDHHS Data Warehouse mailbox.
- Assesses user identified issues and provides guidance for resolution.
- Directs unresolved problems and reports to appropriate staff, if necessary.
- Tracks and analyzes problem occurrences and resolutions.
- Conducts data warehouse user group training.
- Develops training materials.
- Assists with query/report development.
- Provides user assistance with data warehouse tool(s), model/database, business knowledge and recommendations for efficiency and solutions to meet user business needs.

Required Experience

- 3+ Years of Data Warehouse Help Desk Analyst Experience.
- Experience in supporting the end users in accessing the data warehouse and effectively utilize the desktop tools.

- **Data Warehouse Web Developer (Senior/Junior)**

A DW Web Developer is responsible for designing and developing web-based applications that interact with and utilize the data warehouse to provide MDHHS users with highly interactive, easy to use web-based data warehouse applications.

- Learning the customer's business process and working with others to define customer requirements specifications by participating in meetings, analysis and documentation preparation
- Defining and developing applications that rely on unique web-based technology and tools, and that will conform to standards defined by DTMB for user interface and usage of the data warehouse.
- Defining the web application user interface, business rules, database access and data warehouse access, and determining any data sources that need to be imported into the data warehouse for web application operation.
- Producing technical specification documents and designs (e.g., process flows, screen mock-ups, component logic) to review the web application with the user, and conducting JAD sessions to revise and finalize technical specifications.
- Prototyping of web application pages for user review and approval.
- Producing accurate and complete data mapping documents
- Performing user acceptance testing with users and DTMB to confirm that new web applications perform per specifications, and making adjustments to the web application as required
- Helping maintain a development and staging environment for the development and testing of enhancements and updates to the web application.
- Problem-solving, troubleshooting and identifying/executing resolution actions
- Assisting with creation of help documents and procedures manuals
- Assisting with creation of presentation materials for technical review meetings, approval sessions and application demonstrations

DW Web Developer – Senior: Required Experience

- Bachelor's degree or equivalent technical study

- 5+ Years of Data Warehouse Web Developer Experience.
- Web development may include: HTML, JavaScript; JQuery; Javascript libraries and plugins; CSS Libraries like Bootstrap; Ajax; ASP.NET with Webforms and Model View Controller (MVC); Visual Studio; SQL Server and the development and maintenance of relational databases integrated with Visual Studio web applications; RESTful services; Web APIs; Crystal Reports; integration to SQL Server or Teradata RDBMS; Telerik Control Toolkit; web app interface with LDAP, Microsoft SharePoint, Business Objects and FileNet; Internet Information Services (IIS) configuration and management; networking using TCP/IP; tools for web prototyping like Protoshare; version control software (Subversion, GitHub); unit testing tools; agile development methodology.
- Medicaid, child welfare or other specialty may be desired

DW Web Developer – Junior: Required Experience

- 2+ years of data warehouse web developer experience
- Experience with a subset of the technologies listed above for DW Web Developer - Senior

- **Subject Matter Expert (SME)**

A Subject Matter Expert (SME) will be responsible for providing specialized, in-depth knowledge of a business area(s) such as Medicaid, Master Person Index/Provider Index, Pharmacy, ICD-10, HEDIS, Metadata Management, and technology solutions.

- Leading or actively participating in workgroups with the need for specialized knowledge.
- Providing guidance on how their area of expertise can resolve an organizational need, and actively participates in all phases of a project/initiative by sharing their knowledge, expertise and ideas.
- Defining technology and business solutions based on thorough understanding of business processes and policies.
- Reviewing, helping re-engineer, or creating new processes and policies.
- Evaluating and defining technology requirements and solutions.
- Defining business needs, and identifying and recommending the most appropriate solutions.
- Providing documentation such as forms, manuals, correspondence, and procedures
- Understanding, articulating, and implementing best practices related to their area of expertise.
- In some cases, will work with end users to provide information in many ways. This may include tasks such as:
 - o Running Joint Application Design (JAD) sessions to understand what data is needed and how it is likely to be used.
 - o Creating ad-hoc queries to answer specific user questions.
 - o Program design and specification.
 - o Creating DW based applications including reporting, dashboards and other information analysis and delivery systems.
 - o Supporting end user to enable them to create their own queries and reports as needed.
 - o Identify data problems and work with developers to correct them.
 - o Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
 - o Organize and run user groups to encourage self-support among end user and DTMB query and other BI application developers
- In some cases, the SME will also be expected to be able to work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
 - o Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - o Develop and present training classes for end user developers to help learn how to most effectively use the DW platform and the BI tools available to them to support their own data needs where possible.
 - o Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the DW.
 - o Provide one-on-one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- Experience requirements will vary depending on area of expertise being requested. Current SMEs must have expertise in Medicaid, technology solutions, MPI/PI, metadata management, population health and/or business objects dashboards.

DELIVERABLES:

The deliverables and tasks agreed to in the resulting Contract shall comply with the following approval process:

APPROVAL OF DELIVERABLES, IN GENERAL:

(a) All Deliverables (Physical Deliverables, Written Deliverables, and Service Deliverables) require formal written approval by the State, in accordance with the following procedures. Formal approval by the State requires that the Deliverable be confirmed in writing by the State to meet its specifications, which will include the successful completion of Testing, to be led by the State with the support and assistance of Contractor. The parties acknowledge that the approval process set forth herein will be facilitated by ongoing consultation between the parties, visibility of interim and intermediate Deliverables and collaboration on key decisions.

(b) The State's obligation to comply with any State Review Period is conditioned on the timely delivery of Deliverables being reviewed.

(c) Prior to commencement of its review or testing of a Deliverable, the State may inspect the Deliverable to confirm that all components of the Deliverable have been delivered without material deficiencies. If the State determines that the Deliverable has material deficiencies, the State may refuse delivery of the Deliverable without performing any further inspection or testing of the Deliverable. Otherwise, the review period will be deemed to have started on the day the State and Contractor receive the Deliverable and agree that the Deliverable is ready for use and, where applicable, Contractor has provided certification to that effect.

(d) The State will approve in writing a Deliverable upon confirming that it conforms to and, performs in accordance with, its specifications without material deficiency. The State may, but shall not be required to, conditionally approve in writing a Deliverable that contains material deficiencies if the State elects to permit Contractor to rectify them post-approval. In any case, Contractor will be responsible for working diligently to correct within a reasonable time at Contractor's expense all deficiencies in the Deliverable that remain outstanding at the time of State approval.

(e) If, after three (3) opportunities (the original and two repeat efforts), Contractor is unable to correct all deficiencies preventing Final Acceptance of a Deliverable, the State may: (i) demand that Contractor cure the failure and give Contractor additional time to cure the failure at the sole expense of Contractor; or (ii) keep any resulting Contract(s) in force and do, either itself or through other parties, whatever Contractor has failed to do, in which event Contractor shall bear any excess expenditure incurred by the State in so doing beyond the Contract(s) price for such Deliverable and will pay the State an additional sum equal to ten percent (10%) of such excess expenditure to cover the State's general expenses provided the State can furnish proof of such general expenses; or (iii) terminate the particular Statement of Work for default, either in whole or in part by notice to Contractor provided Contractor is unable to cure such breach. Notwithstanding the foregoing, the State shall not use, as a basis for exercising its termination rights under this Section, deficiencies discovered in a repeat State Review Period that could reasonably have been discovered during a prior State Review Period.

(f) The State, at any time and in its reasonable discretion, may halt the testing or approval process if such process reveals deficiencies in or problems with a Deliverable in a sufficient quantity or of a sufficient severity as to make the continuation of such process unproductive or unworkable. In such case, the State may return the applicable Deliverable to Contractor for correction and re-delivery prior to resuming the testing or approval process.

PROCESS FOR APPROVAL WRITTEN DELIVERABLES:

The State Review Period for Written Deliverables will be the number of days set forth in the applicable Statement of Work/Purchase Order following delivery of the final version of the Deliverable (failing which the State Review Period, by default, shall be five (5) Business Days for Written Deliverables of one hundred (100) pages or less and ten (10) Business Days for Written Deliverables of more than one hundred (100) pages). The duration of the State Review Periods will be doubled if the State has not had an opportunity to review an interim draft of the Written Deliverable prior to its submission to the State. The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor

will correct the described deficiencies and within five (5) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF SERVICE DELIVERABLES:

The State Review Period for approval of Service Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) Business Days for a Service Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF PHYSICAL DELIVERABLES:

The State Review Period for approval of Physical Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) continuous Business Days for a Physical Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

ACCEPTANCE CRITERIA:

PROJECT CONTROL AND REPORTS:

Contractor must submit a monthly progress report to DTMB Program Manager throughout the life of this project. The report may be submitted with the billing invoice. Each monthly progress report must contain the following information:

- **Hours:** Indicate the number of hours expended during the past month, and the cumulative total to date for the project.
- **Tasks accomplished:** Indicate what projects have been worked on, and what was completed during the current reporting period.

AGENCY RESPONSIBILITIES:

- Provide access to State networks, servers, software license (as appropriate), etc. needed for Contractor to perform tasks required for this agreement
- For all work performed at State owned or leased buildings:
 - Provide contractor staff access to telephone and copying equipment
 - Provide contractor staff computer hardware and software, unless it is mutually deemed unnecessary
- The State's responsibilities for Project Augmentation and Staff Augmentation are listed on pages 2-4

LOCATION OF WHERE THE WORK IS TO BE PERFORMED:

All Project Augmentation services described in this Work Request will continue to be performed at Vendor locations or approved remote work locations, as previously agreed upon between the DTMB Project Manager and Vendor until altered through a Contract Change Notice.

With input from DHHS and Contractor, the work for all Staff Augmentation services described in this Work Request is to be performed, completed, and managed at locations determined by the DTMB Program Manager. Work location will be in State owned or leased buildings as determined by the DTMB Program Manager, but may be at Vendor location if agreed upon by both parties (DTMB & Contractor), with the expectation that personnel will be available, on hand and able to complete emergency tasks. DTMB does allow telecommuting/working remotely. This is determined on an individual basis and is at DTMB Program Manager discretion in accordance with DTMB Policy. In addition, onsite support may be needed and will be identified at such time.

EXPECTED CONTRACTOR WORK HOURS AND CONDITIONS:

Contractor must provide services during normal working hours (Monday through Friday, 7:00 a.m. to 6:00 p.m. ET.) and possible night and weekend hours depending on position and project requirements. 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. Contractor's staff working at State offices shall observe the same standard holidays as State employees.

The State does not compensate for holiday pay.

No overtime will be permitted, i.e., Contractor will not be paid any different hourly rate if the number of hours exceeds forty (40) in any given week.

SPECIFIC AGENCY STANDARDS:

- Contractor will provide the State with all process, standards, project, and technical documentation they utilize to meet MDHHS business requests. This includes documentation for closed projects, maintenance documentation, and project status/tracking information.
- Contractor will provide all code, scripts, and technical work completed or utilized on behalf of the State of Michigan in a timely fashion meeting DTMB timelines.
- Contractor staff will be subject to skills assessments at the discretion of the State.
- Contractor's staff providing Staff Augmentation services may be utilized across programs within the MDHHS to support Data Warehouse Business Intelligence projects as needed, at the discretion of the DTMB Program Manager. Project Aug. resources may be utilized across programs within the MDHHS to support Data Warehouse Business Intelligence projects as needed, at the discretion of the DTMB Program Manager but requiring a Contract Change Notice.
- Contractor will cross-train with SOM staff to provide knowledge transfer and transition of work from Contractor staff to State staff.
- Contractor will follow DTMB guidelines and practices for project completion, SUITE documentation, technical documentation, and any other work performed on behalf of the SOM.
- Contractor staff will utilize the portfolio management tool, Clarity.
- Contractor staff will be subject to SOM/DTMB IT policies, procedures, and standards.

RIGHT TO OWNERSHIP:

State intends to own the Software at the end of the Contract

- Ownership of Work Product by State. All Deliverables shall be owned by the State and shall be considered works made for hire by the Contractor for the State. The State shall own all United States and international copyrights, trademarks, patents or other proprietary rights in the Deliverables.
- Vesting of Rights. The Contractor agrees to assign, and upon creation of each Deliverable automatically assigns, to the State, ownership of all United States and international copyrights, trademarks, patents, or

other proprietary rights in each and every Deliverable, whether or not registered by the Contractor, insofar as any such Deliverable, by operation of law, may not be considered work made for hire by the Contractor for the State. From time to time upon State's request, the Contractor and/or its personnel shall confirm such assignment by execution and delivery of such assignments, confirmations of assignment, or other written instruments as the State may request. The State shall have the right to obtain and hold in its own name all copyright, trademark, and patent registrations and other evidence of rights that may be available for Deliverables.

- STATE MUST RECEIVE FAIR MARKET VALUE FOR THE LICENSE – (This must be reviewed and negotiated by the DTMB Procurement Buyer)

PAYMENT SCHEDULE:

Payment will be made on a time and materials basis (hourly based) and will be paid monthly. The State will pay Contractor upon receipt of properly completed invoices which shall be submitted to the billing address on the State issued purchase order not more often than monthly. DTMB's Accounts Payable area will coordinate obtaining the DTMB Program Manager approvals. All invoices should reflect the actual work hours completed by payment date, and must be approved by the DTMB Program Manager prior to payment. The invoices shall describe and document to the State's satisfaction a description of the work performed, the progress of the project, and fees.

All invoices must contain the State of Michigan issued purchase order number.

Payment shall be considered timely if made by the State within forty-five (45) days after receipt of properly completed invoices.

EXPENSES:

The State will NOT pay for any travel time or travel expenses, including hotel, mileage, meals, parking, etc.

PRICING SUMMARY

Pricing for the Extension Period is set forth in Appendix A below.

MODIFICATIONS

For an agreement of this size, changes to staffing (resources and/or subcontracting companies) may normally occur. Contractor will provide the State a staffing letter specifying any such changes and the State will provide written approval for acceptance. Contractor will also work with the State to complete the State's approval process for new subcontracting companies, as needed.

Other types of changes will be implemented, as needed, via (i) acceptance letters; or (ii) a simple amendment (e.g., typically 1- or 2-pages) that describes the change and requires State's written approval for acceptance.

ADDITIONAL TIME & MATERIALS LABOR RATES FOR PROFESSIONAL SERVICES:

To the extent the parties agree that certain specific services must be provided on a time and materials basis, such services must be provided within the not to exceed hourly rates as revised in Change Notice 33, Revised Cost Table - Attachment A, included here as Appendix B for reference. Future amendments to this Work Request may utilize this rate structure, as agreed between the Contractor and State.

Additionally, the Contractor may utilize the rates in order to provide the State with a not to exceed time and materials price. Prices quoted herein will be used for change, addition, and / or deletion of work associated with this Work Request. The Estimated Hours is provided below as an estimate only and is not meant to preclude or limit the State from requesting a resource/staffing mix for future projects that exceeds or reduces the hours estimate for a specific Staffing Category.

Attachment A

Appendix A

Table 1 -part 1

Assigned Resource	Position Ref	Position	Contract Year 12/21/19 - 1/20/20		
			Hourly Rate	Est. Max Hours	Estimated Dollars
MDHHS Health Services					
BAUMAN, AMY	A01	Data Warehouse Project Manager	148	154.50	22,866.00
BLAIR, CORINNE	A02	Subject Matter Expert MPI	235	43.42	10,202.92
BOAK, KATHY	A03	Data Warehouse Developer - Senior	140	153.75	21,525.00
BONAM, SUDHAKAR	A04	Data Warehouse Developer - Senior	140	166.50	23,310.00
BRAR, BIRINDER	A05	Data Warehouse BI Analyst - Senior	140	166.50	23,310.00
BUSH, STEPHEN	A06	Data Warehouse Developer - Senior	140	154.50	21,630.00
CAREY, TIM	A07	Data Warehouse Project Manager	148	166.50	24,642.00
CARTER, TYSON	A08	Subject Matter Expert MPI	235	43.42	10,202.92
CHERUKURI, SAI	A09	Data Warehouse Web Developer - Senior	120	166.50	19,980.00
CHIKYALA, DHEERAJ	A10	Data Warehouse Developer - Senior	140	166.50	23,310.00
CHITIBOMMA, RAVI	A11	Data Warehouse Developer - Senior	140	154.50	21,630.00
CHITTEM, KIRAN	A12	Data Warehouse Web Developer - Senior	120	166.50	19,980.00
CHRISTIANSEN, JEREMY	A13	Data Warehouse Developer - Senior	140	80.42	11,258.33
COBURN, DEB	A14	Data Warehouse BI Analyst - Senior	140	159.92	22,388.33
CONNOR, RONALD	A15	Subject Matter Expert MPI	235	43.42	10,202.92
DAMEGUNTA, DEEPAK / TBD	A16	Data Warehouse Web Developer - Senior	120	152.75	18,330.00
DE WINKLE, NATHAN	A17	Data Warehouse BI Analyst - Senior	140	154.50	21,630.00
FOTH, CASEY	A18	Subject Matter Expert MPI	235	43.42	10,202.92
FRIAR, BETH	A19	Data Warehouse BI Analyst - Senior	140	155.50	21,770.00
GAJBHIMKAR, SRIKANTH	A20	Data Warehouse Web Developer - Senior	120	166.50	19,980.00
GEORGE, AMY	A21	Data Warehouse Project Manager	148	82.67	12,234.67
GREGG, BILL	A22	Data Warehouse Developer - Senior	140	158.67	22,213.33
HOMER, DANIEL	A24	Data Warehouse Developer - Senior	140	154.50	21,630.00
HULL, BARRY	A25	Data Warehouse Architect	144	166.50	23,976.00
IFTODY, SEAN	A26	Subject Matter Expert MPI	235	43.42	10,202.92
JADOON, FAHD	A27	Data Warehouse BI Analyst - Senior	140	166.50	23,310.00
KAMINSKE, CHRISTIAN / TBD	A28	Data Warehouse BI Analyst - Junior	140	141.75	19,845.00
KREINER, META	A29	Subject Matter Expert Population Health	125	154.50	19,312.50
KRISHNAMOORTHY, RAJA	A30	Subject Matter Expert MPI	235	43.42	10,202.92
KRISTJANSON, KORBIN	A31	Subject Matter Expert MPI	235	43.42	10,202.92
LECLERC, NICK	A32	Subject Matter Expert MPI	235	43.42	10,202.92
LOGANATHAN, RAMESH	A33	Data Warehouse Database Administrator	140	166.50	23,310.00
MCNEIL, JEANNE	A34	Data Warehouse Project Manager	148	133.33	19,733.33
NADELLA, MALATHI	A35	Data Warehouse BI Analyst - Junior	140	166.50	23,310.00
OLSON, LAURA	A36	Data Warehouse Help Desk Analyst	140	150.50	21,070.00
RITTER-IRELAND, JENNY	A37	Data Warehouse BI Analyst - Senior	140	154.50	21,630.00
SABIR, MOHAMMAD	A38	Data Warehouse Developer - Senior	140	156.67	21,933.33
TBD	A39	Data Warehouse Web Developer - Senior	120	154.50	18,540.00
SHAH, AMI	A40	Data Warehouse Web Developer - Senior	120	166.50	19,980.00
SHAH, KUNAL	A41	Data Warehouse Architect	144	166.50	23,976.00
SINGH, VIDHIKA	A42	Subject Matter Expert MPI	235	43.42	10,202.92
SNYDER, JOHN	A43	Data Warehouse BI Analyst - Senior	140	154.50	21,630.00
SORRELLS, ANGEL	A44	Data Warehouse BI Analyst - Senior	140	154.50	21,630.00
SRIGIRI, HAVILAH	A45	Data Warehouse Web Developer - Senior	120	166.50	19,980.00
SUSKANDLA, ANIL / TBD	A46	Data Warehouse Web Developer - Senior	120	152.75	18,330.00
TANNEERU, VISHAL	A47	Data Warehouse BI Report Developer	120	154.50	18,540.00
TATE, JEFF	A48	Subject Matter Expert CHAMPS	185	166.50	30,802.50
TRAN, VINCENT	A49	Subject Matter Expert MPI	235	43.42	10,202.92
TRIPATHI, VINAYAK	A50	Data Warehouse Developer - Senior	140	166.50	23,310.00
VAIDYA, SUMEET	A51	Subject Matter Expert MPI	235	43.42	10,202.92
VAN, KENTON DEREK	A52	Data Warehouse BI Analyst - Senior	140	154.50	21,630.00
WITHERS, BETH	A53	Data Warehouse Designer/Modeler	140	154.50	21,630.00
Subtotals for HEALTH Services:				6,829	983,258.42

Appendix A (CONTINUED)**Table 1 -part 2**

MDHHS Human Services					
BHIMIREDDY, SUDARSHAN	B01	Data Warehouse Developer - Senior BI	140	165.33	23,146.67
DAVIS, JIM	B02	Data Warehouse Project Manager	148	165.33	24,469.33
GAJULA, MADHU	B03	Data Warehouse Developer - Senior ETL	140	165.33	23,146.67
GRANT, BRUCE	B04	Data Warehouse Developer - Senior ETL	140	165.33	23,146.67
GUNDA, RAKESH	B05	Data Warehouse Developer - Senior ETL	140	165.33	23,146.67
JOURDEN, MELISSA	B06	Data Warehouse Project Manager	148	165.33	24,469.33
KHAN, MOHOMMOD	B07	Data Warehouse Developer - Senior ETL	140	165.33	23,146.67
MAHADEVAN, MURALI	B08	Data Warehouse Business Objects Architect	144	165.33	23,808.00
MANDAVELLI, VAMSI	B09	Data Warehouse Developer - Senior ETL	140	165.33	23,146.67
MARTIN, NICHOLE	B10	Data Warehouse BI Analyst - Senior	140	165.33	23,146.67
MUDDULURU, SWAROOP	B11	Data Warehouse Developer - Senior ETL	140	165.33	23,146.67
NANDURI, SRIRAM	B12	Data Warehouse Database Administrator	140	165.33	23,146.67
PAJJURI, UDAY	B13	Data Warehouse Developer - Senior BI	140	165.33	23,146.67
PATEL, VIKASH	B14	Data Warehouse BI Analyst - Senior	140	165.33	23,146.67
RITCHIE, LEE	B15	Data Warehouse Designer/Modeler	140	165.33	23,146.67
THOKALA, SHIVA	B16	Data Warehouse Developer - Senior ETL	140	165.33	23,146.67
Subtotals for HUMAN Services:				2,645	373,653.33
TOTALS:				9,474	1,356,911.75

Payment will be made on a Time and Materials basis. DTMB will pay Contractor upon receipt of properly completed invoice(s) which shall be submitted to the billing address on the State issued purchase order not more often than monthly. DTMB Accounts Payable area will coordinate obtaining Agency and DTMB Program Manager approvals. All invoices should reflect actual hours worked by Contractor, and must be approved by the Agency and DTMB Program Manager prior to payment.

The estimated yearly contract hours and dollars will not preclude the State from utilizing the hours and dollars on an actual basis in amounts that vary from the estimates.

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Appendix B

The table below was provided in Change Notice 33 as Attachment A and is unchanged. It is included here only for reference and convenience purposes. It provides not to exceed rates.

Position Type	Not To Exceed Hourly Rate ¹
Data Warehouse Project Manager	\$168.00
Data Warehouse Architect	\$188.00
Data Warehouse Data Designer/Modeler	\$163.00
Data Warehouse Developer Senior/Junior	\$158.00
Data Warehouse Business Intelligence Analyst Senior/Junior	\$158.00
Data Warehouse Database Administrator	\$163.00
Data Warehouse Business Intelligence Report Developer	\$158.00
Data Warehouse Help Desk Analyst	\$145.00
Data Warehouse Web Developer	\$125.00
Subject Matter Expert	\$350.00
Advanced Analytics Software Consultant	\$275.00
Principal Consultant	\$450.00

1. These are not to exceed rates that will be appropriately discounted if additional SOWs are issued.

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT & BUDGET
PROCUREMENT

525 W. ALLEGAN STREET
 LANSING, MI 48933

P.O. BOX 30026
 LANSING, MI 48909

CHANGE NOTICE NO. 34
 to
 CONTRACT NO. 071B1300138
 between
 THE STATE OF MICHIGAN
 and

NAME & ADDRESS OF CONTRACTOR	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing MI, 48917	David Wieber	David.wieber@optum.com
	PHONE	CONTRACTOR'S TAX ID NO. (LAST FOUR DIGITS ONLY)
	517-993-0929	*****4101

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
PROGRAM MANAGER / CCI	DTMB	Susan Nordyke	517-373-9784	nordykes@michigan.gov
CONTRACT ADMINISTRATOR	DTMB	Terry Mead	517-284-7035	meadt@michigan.gov

CONTRACT SUMMARY			
DESCRIPTION: Dtmb Data Warehouse Business Intelligence (Bi)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5 - 2 Year	December 20, 2019
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS			
N/A			

DESCRIPTION OF CHANGE NOTICE				
EXERCISE OPTION?	LENGTH OF OPTION	EXERCISE EXTENSION?	LENGTH OF EXTENSION	REVISED EXP. DATE
<input type="checkbox"/>		<input type="checkbox"/>		
CURRENT VALUE	VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE		
\$124,475,662.00	\$ 9,717,204.00	\$134,192,866.00		

DESCRIPTION:

Effective March 28, 2016:

- This contract is amended to add \$9,717,204.00 in order to merge nine Optum resources from the Department of Human Services (DHS) Work Request to the attached revised Department of Health and Human Services (DHHS) Work Request, Statement of Work, and Cost Tables. These funds will cover these nine resources from 2/25/2016 – 12/20/2019 for ongoing Data Warehouse Business Intelligence development, support, maintenance and enhancement. This will increase the number of Full-Time Equivalents from 37 to 46 resources.
- Infomerica Inc. is added as a subcontractor.

All other terms, conditions, specifications and pricing remain the same. Per contractor and agency agreement, and DTMB Procurement approval.



822 Centennial Way, Suite 100 | Lansing, MI 48917 | phone: (517) 993-0929 | www.optum.com

February 16, 2016

Ms. Cynthia Green-Edwards
Director, Office of Medicaid Health Information Technology
Michigan Department of Health and Human Services
400 S. Pine St. Capitol Commons Building
Lansing, MI 48933

**RE: RESPONSE TO BUSINESS INTELLIGENCE (BI) WORK REQUEST AND STATEMENT OF WORK FOR
MDHHS DATA WAREHOUSE PROJECT UNDER CONTRACT No. 071B1300138**

Dear Ms. Green-Edwards:

Thank you for your continued interest in working with Optum Government Solutions, Inc. ("Optum") in regards to the Data Warehouse Business Intelligence (BI) services that we are currently providing to the State of Michigan ("the State") via our BI Services Contract No. 071B1300138 and Michigan Department of Health and Human Services (MDHHS) Work Request (collectively, "the Contract").

The State and Optum signed the MDHHS Work Request on October 30, 2015 (the "Original MDHHS Work Request"). Optum is now pleased to respond to your request for a proposal (the "Optum Response") including a revised MDHHS Work Request ("Revised MDHHS Work Request") and a rate quote for a services extension of the Department of Human Services ("DHS") Work Requests, further described below, to cover the period starting from February 25, 2016 (the "Extension Period Start Date") and ending December 20, 2019 (the "Extension Period End Date"). The slightly less than 4-year timeframe from the Extension Period Start Date through the Extension Period End Date will be defined as the "Extension Period".

The DHS Work Requests (collectively, the "Original DHS Work Requests"), as set forth below along with the associated Optum staff names, will be merged into the Original MDHHS Work Request as part of the Revised MDHHS Work Request and Statement of Work ("SOW") presented in Attachment A – Revised MDHHS Work Request below.

1. ITB-TH-00001 – Data Warehouse Database Administrator – Mohommod Khan
2. ITB-TH-00003 – Data Warehouse Architect – Ray Desmeules
3. ITB-TH-00004 – Data Warehouse Modeler – Lee Ritchie
4. ITB-TH-00005 – Data Warehouse Business Intelligence Analyst Senior – Jim Davis
5. ITB-TH-00006 – Data Warehouse Project Manager – Melissa Jourden
6. ITB-TH-00007 – Data Warehouse Developer Senior – Bruce Grant and Swaroop Muddulurus
7. ITB-TH-00008 – Data Warehouse Database Administrator to serve as BO Administrator –
Murali Mahadevan
8. ITB-TH-00016 – Data Warehouse ETL Developer Senior – Madhu Gajula

Optum is pleased to provide this Response and if the State accepts, it would become part of the overall contract for such services, supplementing the terms of the Contract.

Optum Response

Optum has provided a Revised MDHHS Work Request, below as Attachment A, which includes, along with the hourly rates quote for the Original MDHHS Work Request, the hourly rates for the additional Optum staffing being moved from the Original DHS Work Requests to this Revised MDHHS Work Request for the Extension Period as part of Table 1 and Table 2.

Acceptance of this Optum Response

In order to accept this Optum Response, it is our understanding that the State would complete two actions on or before February 24, 2016:

1. Change Notice: The State would issue a Change Notice to Contract 071B1300138 referencing this letter and date of the letter;
2. Purchase Order (PO):
 1. The State will issue a new or revised PO to include the added positions for Contract Year 1 from Table 1 and Table 2; (with the understanding that subsequent PO(s) or PO extensions would be issued prior to the start of each successive Contract Year in the MDHHS Work Request term prior to the commencing of the applicable Contract Year,) or,
 2. The State will issue a PO to include the added positions from Table 1 and Table 2 from the Revised MDHHS Work Request covering the Contract Years included in the Extension Period.

Should you have any questions, please do not hesitate to contact me. Thank you again for the opportunity to work with you and your project team.

Sincerely,



Point of Contact:

David Wieber
Michigan Director of Operations
Optum Government Solutions, Inc.
Phone Number: (517) 993-0929
Email Address: David.Wieber@optum.com


Paul Miller (Feb 17, 2016)

Signer:

Paul Miller
VP, Finance
Optum Corporate.

cc: Susan Nordyke
Jessica Van Winkle
Kristi Broessel

Attachment A - Revised MDHHS Work Request



MICHIGAN DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET DATA WAREHOUSE (DW) AND BUSINESS INTELLIGENCE (BI) SERVICES WORK REQUEST and STATEMENT OF WORK

This Work Request and Statement of Work (collectively the "Work Request") are being issued to Optum Government Solutions, Inc. ("Optum" or "Vendor" or "Contractor") under Optum's Contract (071B1300138) with the Michigan Department of Technology, Management and Budget, Procurement, as established under the Data Warehouse and Business Intelligence Program.

Project Title: Michigan Department of Health and Human Services Data Warehouse	Period of Coverage or Extension Period 12/21/2015-12/20/2019
Requesting Agency: Michigan Department of Health and Human Services (MDHHS)	Request Date: 12/15/2015
Agency Project Manager: Cynthia Green-Edwards	Phone: 517-241-9998
DTMB Project Manager: Andrew Mason	Phone: 517-898-6815
DTMB Contract Administrator: Barb Suska	Phone: 517-335-4067

Required Skill Categories Requested:

- o Data Warehouse Project Manager
- o Data Warehouse Architect
- o Data Warehouse Database Administrator
- o Data Warehouse Developer Senior
- o Data Warehouse Developer Junior
- o Data Warehouse Designer/Modeler
- o Data Warehouse Business Intelligence Report Developer
- o Data Warehouse Business Intelligence Analyst Senior
- o Data Warehouse Business Intelligence Analyst Junior
- o Data Warehouse Help Desk Analyst
- o Data Warehouse Web Developer
- o Data Warehouse Subject Matter Expert

BACKGROUND:

MDHHS has been using the data warehouse since 1994 to direct policy, detect fraud, identify potentially valuable new initiatives, reduce error rates, calculate rates and more.

MDHHS utilizes the data warehouse for multiple purposes including mission critical functions. It functions as the department's decision support system. MDHHS uses data from the data warehouse for supporting:

- Rate setting for hospitals and managed and long term care providers
- Managing the performance of its partners (managed care providers and others)
- Managing the performance of programs within MDHHS
- Extensive analytics to ensure that funds are being spent most effectively
- Detecting and prosecuting fraud
- Assuring that Medicaid beneficiaries are getting the best care possible
- Analyzing trends in support of departmental management
- Reporting on all aspects of Medicaid
- The MDHHS budgeting process
- Reporting to the Legislature
- Significant analytical support for epidemiology and other studies
- Eligibility Determination for MDHHS services
- Critical child welfare reporting to Federal oversight and County staff
- Required reporting for the Healthy Michigan program related to the ACA
- Integrated Care between MCP and PIHP entities
- Case/Social Worker workload management
- Case Worker management and performance
- Auditor General's Office and their auditing efforts
- The Food Assistance program
- The PATH (Partnership, Accountability, Training, Hope) program

MDHHS will be adapting and expanding its use of the data warehouse as it completes the implementation of ongoing work in its Medicaid Management Information System (MMIS), known as CHAMPS (Community Health Automated Medicaid Processing System). CHAMPS efforts underway include federally mandated projects such as Electronic Health Records (EHR) Incentive Program, ICD-10 and Health Reform. In addition, MDHHS will be adding new data sources and increasing their collaboration with other agencies along with adding new analytical tools. The Department expects to utilize the data warehouse for Health Information Technology/Health Information Exchange initiatives, as well as for the state's Medicaid Eligibility and Enrollment Initiative (Medicaid Compliance Program), Integrated Care Dual Eligibles Project and the Enterprise Fraud Application. The Medicaid Electronic Health Record (EHR) Incentive Payment Program and Michigan Health Information Network are American Recovery and Reinvestment Act of 2009 (ARRA) initiatives to improve health care quality, cost, efficiency, and patient safety through electronic exchange of health information. An important requirement of these ARRA initiatives requires the use of clinical data to improve patient care outcomes which will involve significant research efforts using de-identified data. It is anticipated that much of the data will be stored in the data warehouse. To store and use of this ARRA initiative data will require significantly increased data warehouse capabilities.

MDHHS is also the agency recognized by the U.S. Department of Health and Human Services (DHHS), Administration for Children and Families (ACF) as responsible for administering federal Child Welfare programs under Titles IV-B and IV-E of the Social Security Act. The MDHHS mission includes a commitment to ensuring that children and youth served by the public systems are safe; to promote, improve and sustain a higher quality of life while enhancing their wellbeing; and to have permanent and stable family lives. The State's Child Welfare program located within MDHHS is state-supervised and administered.

MDHHS also has ongoing responsibilities associated with the Patient Protection and Affordable Care Act ("ACA") which was signed into law in March 2010. The ACA created reforms in both the private insurance market and in Medicaid programs. The ACA required the establishment of insurance exchanges in each state that allow

consumers of health insurance to obtain information about health insurance plans, purchase health insurance, and enroll in an insurance plan. Michigan partnered with the Federal government on Exchange activities and the State of Michigan Federal Partnership Exchange (FPE) implemented Michigan specific functionality in partnership with the Federal government to provide Michigan residents with a variety of health insurance options as required by the ACA. The FPE utilizes user and data services provided by the Federal government through a Federal Data Hub. These services include user portal functionality, data validation, and initial eligibility assessment. The State of Michigan implemented secure interfaces and data services to link existing State systems and data determination services internally to each other and externally to the Federal Data Hub. Michigan also developed a Medicaid Adjusted Gross Income (MAGI)/CHIP Eligibility Determination Service. This service was connected to the Federal Data Hub and the existing Medicaid Enrollment and Medicaid Processing systems in order to provide a universal determination service based on a single set of rules and provides all business partners with determination results simultaneously regardless of the system which initiates the request.

In 2014, MDHHS implemented a new Statewide Automated Child Welfare Information System called MiSACWIS. Currently, there are still critical MiSACWIS data that must be designed and loaded into the MDHHS data warehouse to support additional reporting and data integration needs for the success of MDHHS. MDHHS will be adapting and expanding its use of the data warehouse as it completes the implementation and continues to make modifications to MiSACWIS. In addition, MDHHS will be adding new data sources and capabilities into MiSACWIS, such as the Juvenile Justice requirements which will drive additional data warehouse enhancements and reporting needs from the MDHHS business staff.

The project may also include building upon and enhancing the extensive MDHHS data warehouse to help support the increasing demands for more sophisticated reporting.

MDHHS has relied on Contractor staff to provide data warehouse support and business intelligence services. These services include: providing data warehouse Extract, Transform and Load (ETL) services, application development, web development, business intelligence model, reporting, query development, help desk support, training and data analysis.

Brief Description of Services to be provided:

MDHHS, with assistance of the Michigan Department of Technology, Management and Budget (DTMB), has issued this Work Request to obtain the following positions to support, maintain and execute enhancement projects of various sizes for the MDHHS Data Warehouse:

- Four (4) Data Warehouse Project Manager
- Four (4) Data Warehouse Architect
- Two (2) Data Warehouse Database Administrator
- Ten (10) Data Warehouse Developers Senior
- Two (2) Data Warehouse Developers Junior
- Two (2) Data Warehouse Designer/Modeler
- One (1) Data Warehouse Business Intelligence Report Developer
- Three (3) Data Warehouse Business Intelligence Analysts Senior
- Seven (7) Data Warehouse Business Intelligence Analysts Junior
- One (1) Data Warehouse Help Desk Analyst
- Seven (7) Data Warehouse Web Developers Senior
- One (1) Data Warehouse Web Developers Junior
- Two (2) Data Warehouse Subject Matter Experts

This Work Request includes a total of forty-six (46) Full Time Equivalents (FTEs). The total number of FTEs may be increased or decreased throughout the life of this Work Request, based on department needs and available funding.

It is the State's intent to establish this Work Request for BI Services to be provided to MDHHS for a time period defined above as the Extension Period. The Work Request may be renewed for three (3) two (2) year periods at pricing to be negotiated between the Vendor and the State.

It is anticipated the Work Request will begin on December 21, 2015. The work performed via this Work Request will be on a time and materials basis.

PROJECT OBJECTIVE:

The objective of this Work Request is to assist MDHHS with the development, support, maintenance and enhancement of MDHHS Data Warehouse applications, which is an on-going activity triggered by changes in federal and state regulations, evolving business needs, opportunities for improving business processes, continued software and hardware upgrades, and break fixes.

SCOPE OF WORK:

- The scope of this Work Request is to provide Data Warehouse Business Intelligence (BI) Services on an as needed basis to support maintain and execute enhancement projects of various sizes for the MDHHS Data Warehouse set forth in this Work Request.
- Develop and maintain Data Warehouse BI applications that support MDHHS's day-to-day business operations.
- Resources will become familiar with DTMB personnel roles, DTMB supporting MDHHS's business processes, and DTMB's State Unified Information Technology Environment (SUITE) and MDHHS Management policies and procedures.

TASKS:

REQUIRED TASKS

- The Vendor must attend orientation, security awareness training and any other relevant security and or confidentiality training requested by MDHHS and/or DTMB. Vendor staff must sign appropriate agreements or training certifications.

EXAMPLES OF ONGOING and UPCOMING CONTRACTOR TASKS

(these tasks may change based on direction from the State)

1. Run production reporting on the data warehouse

The Medicaid enterprise relies on the data warehouse for the majority of its production reporting, including reports needed for certification of federally-funded source systems, extracts, and other production reports used to manage and evaluate MDHHS programs. This includes: creation of new reports to align with new initiatives and/or program areas; and enhancements to existing reports to correspond with source system changes. Users of these reports include but are not limited to MDHHS management and staff, the State legislature, Federal agencies, counties and providers.

Tasks include:

- Complete development of production reports in response to changes in CHAMPS data warehouse model. This includes reports needed for ongoing certification of CHAMPS, the Medicaid Statistical Information System (MSIS) extracts, and other production reports used to manage and evaluate Medicaid programs. Users of these reports include but are not limited to MDHHS Medicaid management and staff, the State legislature, Federal agencies, counties and providers. Tasks include:
 - Map existing report data elements to corresponding updated fields in the CHAMPS data warehouse.
 - Conduct Joint Application Design (JAD) sessions to finalize requirements with MDHHS users.
 - Develop, test, and implement the updated version of the reports, including:
 - State and federal reports

- Centers for Medicare & Medicaid Services (CMS)-372s for Children's Waiver, Elderly and Disabled Waiver, Habilitation Supports Waiver and Serious Emotional Disturbance
 - MSIS
 - CMS-416 report and Early and Periodic Screening, diagnostic, and Treatment (EPSDT) letters
- Rewrite production reports to align with ICD-10, Integrated Care Dual Eligibles Project, and Medicaid Eligibility and Enrollment changes.
- Provide input as a pilot state for T-MSIS. Work with CMS Developers to refine T-MSIS requirements, record layouts and data definitions. Develop extract processes to align with defined T-MSIS requirements, create internal system documentation, test files internally and with CMS, and implement approved processes.
- Develop Data Quality Improvement Program (DQIP) reports from the CHAMPS data warehouse for distribution to Medicaid Health Plans to provide feedback on performance related to their contracts with MDHHS.
- Provide training and support to Department of Technology, Management and Budget (DTMB) staff to facilitate report development and maintenance.
- Provide on-site expertise to incorporate newly-developed processes into the Business Objects environment, coordinate activities with the Consolidated Print Center, and integrate tools used to support data warehouse reporting.
- Complete development of production reports in response to changes and new requirements in the MiSACWIS, BRIDGES, and/or MiCSES data warehouse models. Users of these reports include but are not limited to MDHHS management and staff, the State legislature, Federal agencies, counties and providers.
- Develop, rewrite, and/or make modifications to production reports to meet requirements of the Healthy Michigan legislation and related Medicaid Compliance Program (MCP).
- Develop, rewrite, and/or make modifications to production reports to meet requirements of ASCAP (Adult Services Comprehensive Assessment Program), TANF, EBT, MSHDA, as well as other Child Development and Family Services programs.

2. Provide updated analytic, reporting, data mining, and web-based analytic tools to enhance the analytic capability of the staff

MDHHS vision continues to include the use of ad-hoc analytic, On Line Analytical Processing (OLAP) and data mining tools. The OLAP and data mining tools are needed to examine our data from multiple perspectives, which will allow identification of emerging trends and cost savings. This allows the ability to answer complex questions by performing multidimensional analysis across data sets and programs; and to drill up and down through successive layers of detail to uncover trends, relationships, and patterns for improved decision making.

Tasks include:

- Provide services related to administration and potential upgrades of MDHHS's BI Query Reporting environment due to more recent versions of the software offered by the manufacturer.
- Provide services related to administration and potential upgrades of MDHHS's Business Objects environment due to more recent versions of the software offered by the manufacturer.

Note: Both BI Query and Business Objects Crystal Reporting Software licensing will continue to be provided by the State via other contract vehicles.

3. Identify and load additional data sets on the data warehouse

As new systems and data sources are developed that support MDHHS programs, and expansions are made to existing source systems, they will be loaded to the data warehouse to be integrated with existing MDHHS data.

The process to add these data sets includes: defining requirements; establishing a process to maintain historical data; developing load programs; integrating new data with existing data in the BI Query model; and training MDHHS users. The new data may also be included in MPI to allow integration with other program data (see separate activity for that portion of the work).

Tasks include:

- Add Maternal and Infant Health Program (MIHP) Infant Screener and Maternal Summary data plus additional data elements from new development to the Maternal Screener, in order to enhance MDHHS's ability to evaluate the program, evaluate effectiveness of interventions, and assess outcomes.
- Add Children's Waiver data from multiple sources (including Paradox database that is no longer supported) for purposes of enrollment and CMS-372 reporting.
- Add Human Services data needed for Medicaid reporting required by CMS, and/or establish MDHHS access to the Human Services data through a data warehouse View (e.g., Poverty/Income, Race/Ethnicity).
- Add 'trusted data sources' as they are identified as part of the ACA Eligibility Project and Enterprise Fraud Application.
- Add detail-level HEDIS data from Medicaid Health Plans. This will be used to evaluate performance measures as part of the CMS Adult Quality Measures grant, along with other initiatives.
- Add Veterans data to be incorporated into the Master Person Index to link to existing data sets.
- Add Buy-In source data for comparison to Medicare identified on the eligibility records. This will be used to ensure completeness of the MMA submissions.
- Add EMBRS data from mental health hospitals when source implementations are complete.
- Add Hospital and Long Term Care Cost Report data that currently resides in a system managed by Hewlett Packard (HP).
- Add T-MSIS submission file tables and corresponding data to the data warehouse for use in maintaining MSIS history, analysis and resubmission to CMS as necessary.
- Add Michigan Disease Surveillance System (MDSS) data. MDSS enables physicians and clinical laboratories to electronically report the occurrence or suspected occurrence of disease, conditions or infection required by the Michigan Communicable Disease Reporting Rule. Case reporting and management depends on the integration of data from multiple sources (e.g., laboratory results; patient information; disease condition, onset, symptoms, and hospitalization dates; and medication, treatment and clinical history). MDHHS has an opportunity to improve disease tracking and monitoring of Medicaid beneficiaries through the integration of MDSS and the MDHHS Data Warehouse.
- Add Newborn Screening data. This data was previously loaded to the data warehouse, but source system has been re-written, and corresponding data warehouse load processes are needed to capture data from the new system.
- Add Third Party Recovery data. Existing Medicaid payment recovery systems pull data from the warehouse for purposes of determining amounts to be recovered, but actual amounts recovered are not currently loaded back to the data warehouse. The addition of the recovery amounts to the data warehouse will provide a more complete and accurate representation of Medicaid payment amounts.
- Evaluate other data sources and add those that will benefit Michigan's Medicaid program or are needed to support reporting requirements.
- Add Provider Licensing data from the Department of Licensing and Regulatory Affairs for use in identifying and de-duplicating provider data.
- Add All Payers Claims Database.
- Add Health Risk Assessment (HRA) data from Enrollment Broker, Medicaid Health Plans and Integrated Care Organizations (ICOs).
- Add clinical and other data from the health information exchange, such as Electronic Quality Measures; and Admission, Discharge and Transfer (ADT) data.
- Add new SACWIS data including Juvenile Justice data.
- Add new Workforce Development Authority data.
- Add Statewide training data.

- Creation of new data warehouse artifacts to support the integration of State of Michigan trusted data sources into both the Federal Data Hub and the MAGI Medicaid calculation engines.

4. Changes to existing data loads to stay current with enhancements to source systems

As source systems are rewritten to align with new requirements and technology, corresponding enhancements are required to the data warehouse in order to load and store new data elements and provide query and reporting access to the data. Source system changes may be driven by federal or state initiatives, new policies, new technologies, or ongoing releases to existing source systems.

Tasks include:

- Develop, test and implement data warehouse enhancements as a result changes to source systems, including:
 - OASIS
 - Nursing Home
 - MDS
 - CSHCS
 - WIC (Women, Infants and Children)
 - MCIR (Michigan Care Improvement Registry)
 - Home Help Payments
 - Home Help Assessments
 - MIHP
 - Vital Records
 - ASCAP
 - MAGI

5. Develop web applications to support MDHHS programs and processes

Develop and enhance web applications in support of MDHHS programs – to streamline processes, automate workflows, provide integrated data delivery, and provide tracking and reporting of MDHHS beneficiaries and programs. These web applications are used by MDHHS management and staff, and MDHHS partner organizations (e.g., Medicaid Health Plans, Prepaid Inpatient Health Plans, Native American Tribal Organizations).

Tasks include:

- Develop, test and implement web applications to support the following waivers:
 - Children's Support Waiver (CSW)
 - Children with Serious Emotional Disturbance Waiver (SEDW),
 - Autism
 - Enhancements to the Habilitation Supports Waiver (HSW) application
 - Integrated Care Organization (ICO) Waiver
- These web applications will provide:
 - Automated workflow to process enrollment of waiver beneficiaries (including capture of demographic data not available in BRIDGES)
 - Tracking and reporting of waiver beneficiaries
 - Management and tracking of waiver "slots"
 - Integration with existing systems (e.g., BRIDGES, Statewide Automated Child Welfare Information System [SACWIS])
 - An interface to CHAMPS to provide data needed to process waiver payments.
- Add data for the following home and community based services waivers to be used by the corresponding web applications proposed to support the waivers:
 - CSW
 - SED
- Develop, test and implement an enhanced web-based application for MDHHS's Managed Care

Compliance Review Tool to replace the existing Access-based Compliance Review Tool application (the Tool). This will allow health plans and MDHHS to update and access information through the web, rather than having to send the Access database back and forth to update information. The Tool summarizes all of the requirements of the Medicaid Comprehensive Health Plan contract, and State and Federal regulations, including fraud and abuse. MDHHS conducts an annual compliance review of the designated criteria within the Tool. This Tool is used to document the Health Plans' compliance with contract requirements as identified in each criterion.

- Develop, test and implement web applications to support
 - Beneficiary Monitoring Program
 - Integrated Care/Data Analytics
 - MDHHS Automated processes and workflow (e.g., NDC Crosswalk)

6. Create and manage METADATA for the MMIS IT Architecture, and provide BI-Administration capability for security and model management.

Metadata and field mapping will provide information on the descriptions and uses of the data, flow of the data through the system, relationship to CHAMPS and other systems, as well as the transformation and cleansing procedures. This information will be especially useful to analytic staff that may not be familiar with the operational detail of the data.

Enhanced security and access procedures will be implemented to support new policies, technologies and audit findings, and to leverage new capabilities that become available through upgrades to existing software.

Tasks include:

- Map records to data warehouse fields, including transformation rules and frequency of updates throughout the process (e.g., 837 records, National Council for Prescription Drug Programs (NCPDP), corresponding fields in CHAMPS screens, and use in reports).
- Create business definitions/data dictionary for each data element in the new CHAMPS data model.
- Create and/or modify BI-Query models or Business Objects universes to allow user-access to pre-defined data sets based on access approved through the security process. For example, access may include combinations such as the following:
 - Identified/Linked
 - De-identified/Linked
 - Identified/Linked & Unlinked
 - De-identified/Linked & Unlinked
- Implement updates to roles and profiles (levels of security) for user access to the new CHAMPS data model.
- Implement updates to strong password rules.
- Develop interface maps for both CHAMPS and the data warehouse.
- Create web-based application that contains all of the mapping documentation and allows users to look up definitions and/or data relationships.
- Map records to data warehouse fields, including transformation rules and frequency of updates throughout the process for other MDHHS applications and reports.
- Develop interface maps for other MDHHS applications and the data warehouse.

7. Provide additional data integration across program areas and continue to enhance architecture to align with MITA initiative

Enhance data warehouse architecture by developing data exchanges between the data warehouse and MDHHS partner organizations (e.g., health plans). By making additional data available to partner organizations, these secure data exchanges promote efficient and effective data integration and sharing for purposes of improving outcomes for MDHHS beneficiaries.

Expand the use of the Common Citizen and Events Models to assess other events that may be contributing to successes or shortfalls in programs, interventions and outcomes. This will also allow MDHHS to collaborate

with other departments/agencies to improve outcomes.

Integrate MDHHS data with data from other departments/agencies to provide improved ability to identify cross-population, and therefore allow improved tracking and analysis of MDHHS beneficiaries.

Tasks include:

- Enhance architecture to align with MITA by developing data exchanges between the data warehouse and health plans. By making additional data available to health plans, these secure data exchanges promote efficient and effective data integration and sharing for purposes of improving health care outcomes for Medicaid beneficiaries. These data exchanges are adaptable and will be used to help drive the Michigan Health Information Exchange (HIE) initiatives.
- Expand the use of Medicaid and other MDHHS data in the Common Citizen and Events Models to assess other events that may be contributing to successes or shortfalls in programs, interventions and outcomes. This will also allow MDHHS to collaborate with other departments/agencies to improve Medicaid outcomes.
- Integrate Medicaid and other MDHHS data with Corrections data to provide improved ability to identify the cross-population of Medicaid beneficiaries and prisoners, and therefore allow improved tracking and analysis of Medicaid beneficiaries.
- Integrate the data warehouse with other tool sets (e.g., Oracle, Access, ETL tools) to provide the ability to link to data that resides in source systems outside the data warehouse.
- Add new development to migrate data loads to the state's standard COTS ETL tool (DataStage) to improve data load processes, reduce risk and development/maintenance costs, and minimize differences between data warehouse and source system data.
- Evaluate and purchase tools to align technology framework with Medicaid Information Technology Architecture (MITA) standards (foster integrated, cross-functional business in order to improve administration of Michigan's Medicaid and other MDHHS programs).
- Establish processes and integrate data sets across state agencies for use with the Enterprise Fraud Application (COTS product).

8. Provide onsite analytic development for the various program models, and analytic tools

Provide comprehensive training to educate new data warehouse users on the use of the data. Provide comprehensive training to help users understand the business, and educate them on the relationship between the data and MDHHS programs. Develop and update user queries and reports for newly defined business needs. Assist end users with updating queries as new data is added, to streamline their business processes by incorporating new data and understanding how it helps them (e.g., Measures).

Tasks include:

- Update CHAMPS and other MDHHS application's model-specific training manuals.
- Develop and deliver comprehensive training to educate end users on the use of the data based on updated CHAMPS, BRIDGES, and other MDHHS application requirements.
- Provide comprehensive training to help end users understand the business, and educate them on the relationship between the CHAMPS data and the Medicaid program. This will include development of materials for instructor-led classroom training as well as development of web-based training.
- Develop and deliver comprehensive training to educate developers on updated data warehouse structures and the use of data based on CHAMPS, BRIDGES, and other MDHHS application requirements.
- Provide comprehensive training to help developers understand the business, and educate them on the relationship between the CHAMPS data and the Medicaid program.
- Provide first-line Help Desk Support to answer end user and developer questions related to the newly defined data models.
- Provide advanced analytic support and development at a level above the typical user's business and technical knowledge.
- Provide Business Objects training and support for development staff, related to developing production reports on the data warehouse.

9. Enhance the data warehouse as a result of core application changes - CHAMPS, BRIDGES, SACWIS and CSES

Implement data warehouse changes as a result of changes to the source systems. Includes changes to: database structures; models; views; universes; ETL (data load programs). Also includes derived fields and any work related to corresponding software upgrades.

Tasks include:

- Conduct Technical JAD sessions along with the States application development and/or vendor development teams to redefine data extract layouts for updates to MDHHS core application data sets, as well as relationships between tables, referential integrity, key fields, etc.
- Conduct User JADs for updates to MDHHS core application Production data models – to define usage requirements, data definitions, and alignment with the MDHHS core application screens.
- Complete development of various data structures to accommodate updates to MDHHS core applications data, based on input from JADs.
- Develop new data mart(s) to incorporate a single logic set for accessing MDHHS core application data (e.g., single field for billing provider for all claim types) to simplify data access for end users and developers.
- Develop new BI Query Views and Business Objects universes for the data warehouse using the new data mart.
- Add and modify Metadata to reflect MDHHS core application changes.
- Rewrite data warehouse structure and load programs as a result of changes being implemented in CHAMPS. As approved in the CHAMPS APD-Us, these changes include CHAMPS Change Requests (e.g., addition of new fields and new functionality) that result in a corresponding change to the data warehouse, as well as additional data warehouse testing during the approved CHAMPS implementation extensions.
- To ensure compliance with new Managed Care Organization (MCO) Drug Rebates mandated by Health Care Reform (PPACA – Patient Protection and Affordable Care Act) that went into effect 3/23/10, the following work is required:
 - Create, test and implement new process to provide an interface file to the State's PBM Pharmacy Benefits Management Services (PBM) (Magellan Medicaid Administration, Inc.) containing the MCO Drug claims (NCPDP encounters and Institution/Professional encounters for physician administered drug products) and MCO provider reference data. This data will then be used by the PBM to invoice manufacturers for CMS Federal Drug Rebates.
 - Utilize the NDC (National Drug Code):HCPCS (Healthcare Common procedure Coding System) crosswalk reference table to establish encounter edits and reports for purposes of ensuring the physician administered encounter claims are formatted properly for rebate invoicing.
- The following require redesign to accommodate CHAMPS data warehouse changes:
 - MMA Part D submission files.
 - Eligible Months tables.
- Develop data warehouse structure and load programs to accommodate implementation of meaningful use processing in CHAMPS.
- Develop and update end user queries and reports to use updated models representing MDHHS core application data.
- Expand Situational Data in the data warehouse. Situational data (fields not used directly to adjudicate a claim) are currently received from CHAMPS in a single, continuous, variable-size field, making it unusable by end users. This data will be parsed and stored in a format that makes it usable.
- Expand the data warehouse to accommodate ICD-10.
- Expand the data warehouse to include data needed to support electronic health record (EHR) (e.g., additional provider data, NLR data).
- Expand the data warehouse to include Prior Authorization data from CHAMPS.
- Expand the data warehouse to accommodate ACA Eligibility Initiatives, HIE and Health Insurance Exchange (HIX).

- Expand the data warehouse to accommodate Integrated Care Dual Eligibles Project.
- Expand the data warehouse to accommodate Juvenile Justice data from SACWIS.

10. Enhance the Enterprise Fraud Solution

Develop and implement data warehouse views and/or extract processes needed for the Enterprise Fraud Solution in order to support fraud and abuse efforts related to MDHHS programs.

Tasks include:

- Develop new views and/or extract process needed to support the Enterprise Fraud Solution.
- Enhance Audit programs as a result of CHAMPS changes including ICD-10 and Health Care Reform.
- Support the Office of Inspector General's need for MDHHS program and transaction data

11. Load Pharmacy data directly to the data warehouse

Pharmacy data is loaded directly to the data warehouse (rather than via CHAMPS). This includes all the work related to bringing the data into the data warehouse (creating database structures, models, views, data load programs, adjudication logic, error/return processing), integrating it with other MDHHS data, particularly CHAMPS, and creating queries, reports and applications to support the Pharmacy program. Pharmacy data being loaded includes data directly from the MDHHS Pharmacy Benefits Manager, pharmacy encounters from Medicaid Health Plans, and corresponding pharmacy data such as National Drug Code (code), and Maximum Allowable Costs (MAC).

Tasks include:

- Enhance the PBM data load process to include pharmacy paid claims enhancements. An example is the addition of data needed to further monitor and target outreach for purposes of increasing E-Prescribing in Michigan, and to collect information related to meaningful use.
- Load Pharmacy provider enrollment file from the State's PBM to the data warehouse.
- Rewrite NCPDP Encounter load programs to align with CHAMPS ICD-10 updates and PBM data.
- Rewrite the Medicaid Health Plan Point-of-Sale (POS) pharmacy carve-out claim utilization extract to pull data from the new CHAMPS structure. This weekly process creates a file containing pharmacy carve-out claims for beneficiaries enrolled in each plan. The Medicaid Health Plans use the claim data for utilization and disease management programs.

12. Develop Web-Based Security Application

The Database Security Application (DSA) has been developed and implemented to provide an automated web-based workflow and corresponding database for requesting and approving access to MDHHS systems (e.g., Data Warehouse, FileNet, CHAMPS). New "forms" will be created within DSA for requesting access to additional MDHHS systems. Integration with Tivoli to allow automated provisioning. Work also includes providing end-user training and creating training modules (both web-based and training manuals).

Tasks include:

- Develop enhancements to the Data Warehouse Security form/process in the web-based security application.
- Develop the Security form/process for access to additional Medicaid applications, such as:
 - BRIDGES
 - SOLQ
 - Buy-In
 - MCIR (Immunization Registry)
 - Lead
 - Home Help
 - MIHP
 - CSHCS

- Third Party Electronic Database (TED)
- Level of Care Determination
- CMS 1915(c) Waiver web site.
- Ambulatory Payment Classification (APC) web site (WebStrat)
- Teradata Access for Applications
- Master Person Index
- Expand to other state agencies for access to their applications
- Access to Waiver web applications
- Developer Access to Teradata
- Access to the Enterprise Fraud Application
- Data Exchange Gateway (DEG)
- Access to Monitoring programs
- Develop the Security form/process for access to non-Medicaid MDHHS applications.
- Integrate CHAMPS Customer Relationship Management (CRM subsystem) user information with DSA user database. This will provide MDHHS with a complete picture of an individual's access across systems, via a single source application.
- Develop process to view an individual's approved/denied status across systems.
- Develop process to compare approved level of access in DSA with actual access in source system.
- Develop process to manage security of employee notifications from Human Resources (departures, position transfers, new hires) and/or integration with the Human Resource application. Actions include terminations of access, alerts to system owners, notifications to former and/or new managers, etc.
- Develop approval process for access to Medicaid data stored in the Cloud (Cloud Computing).
- Enhance the DSA application using modularized functionality providing an interface for rapid form development and implementation.

13. Enhance Data Warehouse Operability and Access

Analysis and development to optimize query and system performance will reduce data warehouse usage costs by improving efficiency and reducing storage space. Analysis of data warehouse usage will be performed to determine areas for improvement (e.g., rewrite queries, add statistics, and add/remove indexes to align with user access to data, compress databases). Solutions will then be identified, developed and implemented to address the identified areas for improvement.

Develop application to audit MDHHS data warehouse usage. This application would provide web-based access to stored information such as identification of which users accessed which data and frequency of access.

Tasks include:

- Develop code to analyze databases and queries, identify potential areas for enhancement, develop and implement solutions.
- Develop web-based data warehouse audit application.
- Develop, test and implement solutions for encryption of data at rest and in flight.
- Test and implement enhancements to accommodate future Teradata hardware and software upgrades

14. Develop Queries and Reports to support MDHHS Programs

The MDHHS data warehouse is a critical component in the administration of MDHHS programs. As such, it is frequently used as a source of information for audits, research, lawsuits, FOIA, and other similar requests for data. These requests typically require response within a short timeframe and require knowledge of both MDHHS programs and the data warehouse in order to provide required results within the defined timeframe.

Tasks include:

- Develop code to extract data as requested for CER.

- Develop code to extract data as needed for audits, research, lawsuits, FOIA, and other similar requests.
- Develop code to extract data for use in proof-of-concept of Prospective Payment editing and other similar requests.

15. Develop and Configure the Master Person Index/Provider Index

MDHHS has developed and is using the Master Person Index (MPI) and Provider Index (PI) to link person-level records from one database to another by evaluating the available data elements such as name, address, IDs – beneficiary, client, consumer – to determine if a match exists. When a match exists, the records are linked as a single “entity”. MDHHS will continue to enhance MPI and PI with additional data sets, expanded functionality, hardware upgrades to support increased usage, upgrades to stay current with software releases, and corresponding updates to Governance processes.

Tasks include:

- Install and configure new hardware and software.
- Upgrade software for version releases.
- Integrate the software with other existing systems.
- Develop a Provider Index within the COTS product.
- Expand Master Person Index to include new data sources, real-time access, query functionality, golden record identifiers, etc.
- Develop householding functionality within the COTS product.
- Establish governance processes relate to use of the COTS product.
- Develop new data warehouse functionality to correspond with updates to MPI/PI.
- Monitor algorithms and system configuration and make recommendations for performance improvement.

16. Provide Data Warehouse Assistance to other States that may use “MMIS as a Service”

As other states potentially move to MMIS as a Service (MAAS) – which Illinois is currently doing with the IMPACT project – corresponding data warehouse development is required in order to load and store data elements from MAAS, integrate the data with other data sources, provide query and reporting access to the data, and support applications and activities based on that data. Leveraging the Michigan data warehouse team’s established knowledge and expertise related to the MAAS (CHAMPS) data warehouse will reduce development cost, decrease risk, and provide consistency across state data warehouse implementations. The Michigan data warehouse team will provide consultation and technical assistance to development teams in other states who are implementing a MAAS data warehouse.

Tasks include:

- Provide documentation from Michigan’s MAAS data warehouse structure (e.g., database models, table definitions, ETL code and supporting documentation, metadata, view definitions, data warehouse query models if applicable)
- Facilitate knowledge transfer sessions with development teams in other states to help them understand the MAAS data warehouse structure, job processes, and business definitions of the data elements.
- Assist with development of MAAS data warehouse tables and jobs for implementation in other states.

IT Classifications/Skills Set and Tasks:

The requirement is that the individual must possess the skills, knowledge, and experience required to perform the duties effectively and efficiently at the level specified in the work request.

1. Data Warehouse Project Manager

Data warehouse project manager manages the integration and/or development and delivery of very large

and complex deliverables directly to the customer. This position provides the primary interface between the Contractor, the State and third party providers.

- Establishes and manages the project plan, according to SUITE standards, including the development schedule, resource requirements and integration efforts of third party products. Periodically reports progress to State management.
- Motivates and directs project team; sets goals, objectives and priorities; assigns and reviews work.
- Acts as the primary interface with the State on issues regarding the project deliverable. Makes sure customer reviews are held with the customer user community and obtains sign-off on status reports and requirements.
- Makes sure approved methods, processes and tools are consistently used.
- Is accountable for meeting project schedule and results as well as for the State customer satisfaction and quality of the deliverables.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.
- Assists the MDHHS Agency Project Manager with documentation for managing the data warehouse such as presentations, reports and Advanced Planning Documentation (APD) to be submitted to CMS for funding.

Required Experience

- 5+ Years Project Manager or Team Lead Experience.
- 5+ Years Data Warehouse Experience.
- 3+ Years Teradata DW Experience.
- Medicaid Experience desired.

2. Data Warehouse Architect

Data warehouse architect designs total solutions involving multiple systems for large organizations. Solutions may use third party hardware and software. Participates/leads in the construction of models and pilot programs with senior level managers.

- Conducts model and pilot programs to test proposals or develop solutions to problems. Develops measurement criteria to evaluate programs and projects and develops or reviews estimates on technical aspects of projects.
- Responsible for data warehouse database design and providing technical direction to modelers, data analysts, ETL developers, and database administrators.
- Develops design proposals to meet MDHHS needs
- Approves integrated systems design proposals for technical content.
- Monitors the implementation for technical correctness so that MDHHS needs are met.
- Identifies, analyzes and evaluates alternative design solutions.

Required Experience

- 6+ Years Data Warehouse Architect and Model Experience.
- Teradata Version 13/14 Experience.
- Teradata Utilities Experience.
- 2+ Years Data Warehouse Administrator Experience.

3. Data Warehouse Database Administrator

Database administrator (DBA) is responsible for the availability, safety and usefulness of the MDHHS data warehouse databases.

- Working in conjunction with system administrators, perform server configuration to ensure that the

entire database system is capable of providing the services needed.

- Performance monitoring to identify bottlenecks and places where throughput can be improved.
- Security administration to ensure that the database cannot be accessed by unauthorized parties or damaged by anyone.
- Configure access to the data warehouse and communication between the warehouse and other servers.
- Physical database design translates the logical database design to work optimally for the specific database environment.
- Working with MDHHS data warehouse developers to establish standards and guidelines for access to MDHHS data warehouse databases.
- Collaborate with DTMB to provide data/database integrity for software installation and updates; and backup and restore, including:
 - o Software installation and database management system upgrades
 - o Software upgrades so that the database is in compliance with critical security patches, or, software upgrades deemed necessary by the State.
- Work with MDHHS data warehouse developers and MDHHS clients to optimize their queries.

Required Experience

- 4+ Teradata Database Administrator Experience.
- 2+ Teradata Version 13/14 Experience.
- Teradata Utilities Experience.
- Teradata Manager Experience.
- SQL Assistant Experience.
- Linux Experience.
- Oracle Experience.

4. Data Warehouse Developer Senior

Data warehouse developers perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other MDHHS applications. In addition they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.
- Work with developers and end user query developers to design and improve database queries.
- Train developers in how best to design queries for a specific database.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.

Required Experience

- 6+ Years SQL Development Experience.
- Business Analyst Experience.
- SQL and Performance Tuning Experience.
- Teradata Version 13/14 Experience
- SQL Assistant Experience.
- ETL Development using Teradata Utilities and Linux Experience.

5. Data Warehouse Developer Junior

Data warehouse developers perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other MDHHS applications. In addition they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.
- Work with developers and end user query developers to design and improve database queries.
- Train developers in how best to design queries for a specific database.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.

Required Experience

- 2+ Years SQL Development Experience.
- Teradata Utilities Experience.
- SQL Assistant Experience.

6. Data Warehouse Designer/Modeler

Data warehouse designer is responsible for the database modeling and design for an efficient data warehouse objects structure. This involves defining the tables, keys and relationships that will allow an application to retrieve and update data correctly and efficiently.

- Working with end users and developers to understand the data needs of MDHHS clients.
- Documenting the MDHHS data warehouse data involves including definitions, constraints and access needs.
- Creating and maintaining MDHHS data warehouse logical designs, including Entity Relationship diagrams, which illustrate what data will be stored, how it is organized, how it can be retrieved (keys) and how it relates to other data in the database.
- Creating and maintaining MDHHS data warehouse data definition language (DDL) that can be used to create and update the database.
- Working with the MDHHS Data Warehouse DBA and ETL developers, modify the logical design to create a physical design most suited to the database environment and the applications that will use it.
- Work with MDHHS Data Warehouse ETL developers and DBA to create and maintain database design standards.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their report development related tasks may include:
- Perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other Agency applications. Their development related activities may include tasks such as:
 - o Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
 - o Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
 - o SQL development.
 - o Work with developers and end user query developers to design and improve database queries.
 - o Train developers in how best to design queries for a specific database.

Required Experience

- 5+ Years Data Warehouse Modeling Experience.
- 5+ Years of SQL Development.
- Data Warehouse Architect Experience.

7. Data Warehouse Business Intelligence Report Developer

Data warehouse Business Intelligence Report Developer is expected to be able to work with agency requestors to define and develop new reports, and provide training and technical support to both DTMB developers and end user query developers.

- Working with end user requestors to understand their data needs and create and implement solutions to those needs.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
- Develop and present training classes for DTMB developers to better understand how to use the data warehouse development tools to create and implement reporting solution using the data warehouse.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 5+ Years of Business Objects Report Development Experience.
- 5+ Years of SQL Development.
- Business Analyst Experience.

8. Data Warehouse Business Intelligence Analyst Senior

Data warehouse business intelligence/analyst works with end users to provide information in a number of different ways.

- Running JAD sessions to understand and collect business requirements, develop use cases and determine what data is needed and how it is likely to be used.
- Creating ad-hoc queries to answer specific user questions.
- Program design and specification.
- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Supporting end user to enable them to create their own queries and reports as needed.
- Identify data problems and work with developers to correct them.
- Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
- Organize and run user groups to encourage self-support among end user and DTMB query and other data warehouse application developers.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
 - o Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - o Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
 - o Develop and present training classes for DTMB developers to better understand how to use the data warehouse development tools to create and implement reporting solution using the data warehouse.
 - o Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 6+ Years Project Lead/Data Warehouse BI Analyst Experience.
- Training Experience.
- SQL Assistant Experience.
- Medicaid experience desired.

9. Data Warehouse Business Intelligence Analyst Junior

Data warehouse business intelligence/analyst works with end users to provide information in a number of different ways.

- Running JAD sessions to understand and collect business requirements, develop use cases and determine what data is needed and how it is likely to be used.

- Creating ad-hoc queries to answer specific user questions.
- Program design and specification.
- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Supporting end user to enable them to create their own queries and reports as needed.
- Identify data problems and work with developers to correct them.
- Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
- Organize and run user groups to encourage self-support among end user and DTMB query and other data warehouse application developers.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
 - o Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - o Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
 - o Develop and present training classes for DTMB developers to better understand how to use the data warehouse development tools to create and implement reporting solution using the data warehouse.
 - o Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 2+ Years Project Lead/Data Warehouse BI Analyst Experience.
- Medicaid experience desired.

10. Data Warehouse Help Desk Analyst

Help desk staff provide first line support for end users and developers.

- Manages MDHHS Data Warehouse mailbox.
 - Assesses user identified issues and provides guidance for resolution.
 - Directs unresolved problems and reports to appropriate staff, if necessary.
 - Tracks and analyzes problem occurrences and resolutions.
- Conducts data warehouse user group training.
- Develops training materials.
- Assists with query/report development.
- Provides user assistance with data warehouse tool(s), model/database, business knowledge and recommendations for efficiency and solutions to meet user business needs.

Required Experience

- 3+ Years of Data Warehouse Help Desk Analyst Experience.
- Experience in supporting the end users in accessing the data warehouse and effectively utilize the desktop tools.

11. Web Developer

A Web Developer is responsible for designing and developing web-based applications that interact with and utilize the data warehouse to provide MDHHS users with highly interactive, easy to use web-based data warehouse applications.

- Defining and developing applications that rely on unique web-based technology and tools, and that will conform to standards defined by DTMB for user interface and usage of the data warehouse.
- Defining the web application user interface, business rules, database access and data warehouse access, and determining any data sources that need to be imported into the data warehouse for web application operation.
- Producing technical specification documents to review the web application with the user, and conducting JAD sessions to revise and finalize technical specifications.

- Prototyping of web application pages for user review and approval.
- Producing accurate and complete data mapping documents
- Performing user acceptance testing with users and DTMB to confirm that new web applications perform per specifications, and making adjustments to the web application as required
- Maintaining a development and staging environment for the development and testing of enhancements and updates to the web application.

Required Experience

- 5+ Years of Data Warehouse Web Developer Experience.
- Web development: HTML, JavaScript, Asp.net, Visual Studio.

12. Subject Matter Expert (SME)

A Subject Matter Expert (SME) will be responsible for providing specialized, in-depth knowledge of a business area(s) such as Medicaid, Master Person Index/Provider Index, Pharmacy, ICD-10, HEDIS, Metadata Management, and technology solutions.

- Leading or actively participating in work-groups with the need for specialized knowledge.
- Providing guidance on how their area of expertise can resolve an organizational need, and actively participates in all phases of a project/initiative by sharing their knowledge, expertise and ideas.
- Defining technology and business solutions based on thorough understanding of business processes and policies.
- Reviewing, helping re-engineer, or creating new processes and policies.
- Evaluating and defining technology requirements and solutions.
- Defining business needs, and identifying and recommending the most appropriate solutions.
- Providing documentation such as forms, manuals, correspondence, and procedures
- Understanding, articulating, and implementing best practices related to their area of expertise.

Required Experience

- Experience requirements will vary depending on area of expertise being requested. Current SMEs must have expertise in Medicaid, technology solutions, MPI/PI, metadata management, and business objects dashboards.

DELIVERABLES:

The deliverables and tasks agreed to in the resulting Contract shall comply with the following approval process:

APPROVAL OF DELIVERABLES, IN GENERAL:

(a) All Deliverables (Physical Deliverables, Written Deliverables, and Service Deliverables) require formal written approval by the State, in accordance with the following procedures. Formal approval by the State requires that the Deliverable be confirmed in writing by the State to meet its specifications, which will include the successful completion of Testing, to be led by the State with the support and assistance of Contractor. The parties acknowledge that the approval process set forth herein will be facilitated by ongoing consultation between the parties, visibility of interim and intermediate Deliverables and collaboration on key decisions.

(b) The State's obligation to comply with any State Review Period is conditioned on the timely delivery of Deliverables being reviewed.

(c) Prior to commencement of its review or testing of a Deliverable, the State may inspect the Deliverable to confirm that all components of the Deliverable have been delivered without material deficiencies. If the State determines that the Deliverable has material deficiencies, the State may refuse delivery of the Deliverable without performing any further inspection or testing of the Deliverable. Otherwise, the review period will be deemed to have started on the day the State and Contractor receive the Deliverable and agree that the Deliverable is ready for use and, where applicable, Contractor has provided certification to that effect.

(d) The State will approve in writing a Deliverable upon confirming that it conforms to and, performs in accordance with, its specifications without material deficiency. The State may, but shall not be required to, conditionally approve in writing a Deliverable that contains material deficiencies if the State elects to permit Contractor to rectify them post-approval. In any case, Contractor will be responsible for working diligently to correct within a

reasonable time at Contractor's expense all deficiencies in the Deliverable that remain outstanding at the time of State approval.

(e) If, after three (3) opportunities (the original and two repeat efforts), Contractor is unable to correct all deficiencies preventing Final Acceptance of a Deliverable, the State may: (i) demand that Contractor cure the failure and give Contractor additional time to cure the failure at the sole expense of Contractor; or (ii) keep any resulting Contract(s) in force and do, either itself or through other parties, whatever Contractor has failed to do, in which event Contractor shall bear any excess expenditure incurred by the State in so doing beyond the Contract(s) price for such Deliverable and will pay the State an additional sum equal to ten percent (10%) of such excess expenditure to cover the State's general expenses provided the State can furnish proof of such general expenses; or (iii) terminate the particular Statement of Work for default, either in whole or in part by notice to Contractor provided Contractor is unable to cure such breach. Notwithstanding the foregoing, the State shall not use, as a basis for exercising its termination rights under this Section, deficiencies discovered in a repeat State Review Period that could reasonably have been discovered during a prior State Review Period.

(f) The State, at any time and in its reasonable discretion, may halt the testing or approval process if such process reveals deficiencies in or problems with a Deliverable in a sufficient quantity or of a sufficient severity as to make the continuation of such process unproductive or unworkable. In such case, the State may return the applicable Deliverable to Contractor for correction and re-delivery prior to resuming the testing or approval process.

PROCESS FOR APPROVAL WRITTEN DELIVERABLES:

The State Review Period for Written Deliverables will be the number of days set forth in the applicable Statement of Work/Purchase Order following delivery of the final version of the Deliverable (failing which the State Review Period, by default, shall be five (5) Business Days for Written Deliverables of one hundred (100) pages or less and ten (10) Business Days for Written Deliverables of more than one hundred (100) pages). The duration of the State Review Periods will be doubled if the State has not had an opportunity to review an interim draft of the Written Deliverable prior to its submission to the State. The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within five (5) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF SERVICE DELIVERABLES:

The State Review Period for approval of Service Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) Business Days for a Service Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF PHYSICAL DELIVERABLES:

The State Review Period for approval of Physical Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) continuous Business Days for a Physical Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to

approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

ACCEPTANCE CRITERIA:

PROJECT CONTROL AND REPORTS:

A monthly progress report must be submitted to MDHHS and DTMB Project Managers throughout the life of this project. The report may be submitted with the billing invoice. Each monthly progress report must contain the following information:

- **Hours:** Indicate the number of hours expended during the past month, and the cumulative total to date for the project.
- **Tasks accomplished:** Indicate what projects have been worked on, and what was completed during the current reporting period.

SPECIFIC AGENCY STANDARDS:

Agency standards, if any, in addition to DTMB standards.

PAYMENT SCHEDULE:

Payment will be made on a time and materials basis (hourly based). The State will pay Contractor upon receipt of properly completed invoices which shall be submitted to the billing address on the State issued purchase order not more often than monthly. The State's Accounts Payable area will coordinate obtaining Agency Project Manager and The State Project Manager approvals. All invoices should reflect the purchase order, actual work completed by payment date, and must be approved by the Agency Project Manager and DTMB Project Manager prior to payment. The invoices shall describe and document to the State's satisfaction a description of the work performed the progress of the project, and fees

Payment shall be considered timely if made by the State within forty-five (45) days after receipt of properly completed invoices.

EXPENSES:

The State will NOT pay for any travel expenses, including hotel, mileage, meals, parking, etc.

PRICING SUMMARY

Pricing for the Extension Period is set forth in Table 1 below:

ADDITIONAL TIME & MATERIALS LABOR RATES FOR PROFESSIONAL SERVICES:

To the extent the parties agree that certain specific services must be provided on a time and materials basis, such services must be provided at the Labor Rates (Not to Exceed Hourly Rate cost column) in Table 2 below. Future amendments to this Work Request may utilize this rate structure, as agreed between the Contractor and State. Additionally the Contractor may utilize the rates in order to provide the State with a not to exceed time and materials price. Prices quoted herein will be used for change, addition, and / or deletion of work associated with this Work Request. The Estimated Hours is provided below as an estimate only and is not meant to preclude or limit the State from requesting a resource/staffing mix for future projects that exceeds the hours estimate for a specific Staffing Category as long as the Total Additional Professional Services Cost is not exceeded.

The MDHHS Project Manager is:

Cynthia Green-Edwards
Director, Office of Medicaid Health Information Technology
Michigan Department of Health and Human Services (MDHHS)
500 Pine Street, Capitol Commons Center
Lansing, Michigan 48933
517-241-9998
EDWARDSC@michigan.gov

The DTMB Project Manager is:

Andrew Mason
Director, Client Service Division
Michigan Department of Technology Management and Budget (DTMB)
Agency Services – Department of Health and Human Services (MDHHS)
300 East Michigan Avenue, Chandler Building
Lansing, MI
517-898-6815
MasonA5@michigan.gov

The DTMB Contract Administrator for this project is:

Barb Suska
Michigan Department of Technology, Management and Budget
DTMB Purchasing Operations – Constitution Hall Building – 1st Floor
525 West Allegan Street
Lansing, MI 48933
517-335-4067
Email: suskab2@michigan.gov

AGENCY RESPONSIBILITIES:

- The State may discontinue the services of any Vendor supplied staff with two weeks' notice without cause at any time.
- The State will provide access to networks, servers, software license (as appropriate), etc. needed for Vendor to perform tasks required for this Work Request.

LOCATION OF WHERE THE WORK IS TO BE PERFORMED:

The work is to be performed, completed, and managed at locations determined by the Vendor, but with the expectation that personnel will be available, on hand and able to complete emergency tasks. In addition, onsite support may be needed and will be identified at such time.

EXPECTED CONTRACTOR WORK HOURS AND CONDITIONS:

Contractor(s) must provide services during normal working hours (Monday through Friday, 7:00 a.m. to 6:00 p.m. ET.) and possible night and weekend hours depending on position and project requirements. 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. Contractor(s) shall observe the same standard holidays as State employees. The State does not compensate for holiday pay. Contractor(s) will not be reimbursed for travel expenses or travel time. No overtime will be permitted.

RIGHT TO OWNERSHIP:

State intends to own the Software at the end of the Contract

- Ownership of Work Product by State. All Deliverables shall be owned by the State and shall be considered works made for hire by the Contractor for the State. The State shall own all United States and international copyrights, trademarks, patents or other proprietary rights in the Deliverables.
- Vesting of Rights. The Contractor agrees to assign, and upon creation of each Deliverable automatically assigns, to the State, ownership of all United States and international copyrights, trademarks, patents, or other proprietary rights in each and every Deliverable, whether or not registered by the Contractor, insofar as any such Deliverable, by operation of law, may not be considered work made for hire by the Contractor for the State. From time to time upon State's request, the Contractor and/or its personnel shall confirm such assignment by execution and delivery of such assignments, confirmations of assignment, or other written instruments as the State may request. The State shall have the right to obtain and hold in its own name all copyright, trademark, and patent registrations and other evidence of rights that may be available for Deliverables.
- STATE MUST RECEIVE FAIR MARKET VALUE FOR THE LICENSE – (This must be reviewed and negotiated by the DTMB Procurement Buyer)

TABLE 1

Resource Name	Position	Contract Year											
		Contract Year 1 Hourly Rate	Contract Year 1 Est Max Hours	Contract Year 1 Estimate Dollars	Contract Year 2 Hourly Rate	Contract Year 2 Est Max Hours	Contract Year 2 Estimate Dollars	Contract Year 3 Hourly Rate	Contract Year 3 Est Max Hours	Contract Year 3 Estimate Dollars	Contract Year 4 Hourly Rate	Contract Year 4 Est Max Hours	Contract Year 4 Estimate Dollars
Jeanne Barnstead	DW Project Manager	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632
Monty Bleier	DW BI Analyst Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Connie Blair	Subject Matter Expert MPI	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880
Sudhakar Bonam	DW Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Kathy Book	DW Help Desk Analyst	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Tim Carey	DW Project Manager	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632
Tyson Carter	Subject Matter Expert MPI	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880
Sai Chenkuri	DW Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Cheera Chikala	DW Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Ravi Chittoor	DW Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Kiran Chittim	DW Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Jeremy Christiansen	DW Architect	\$ 144.00	1,984	\$ 285,696	\$ 144.00	1,984	\$ 285,696	\$ 144.00	1,984	\$ 285,696	\$ 144.00	1,984	\$ 285,696
Deb Coburn	DW BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Deepak Damugunta	DW Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Nathan De Winkle	DW BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Chris Bias	Subject Matter Expert MPI	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880
Ernesto Ferro	Subject Matter Expert MPI	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880
Casey Roth	Subject Matter Expert MPI	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880
Ben Pinar	DW BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Amy George	DW Project Manager	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632
Daniel Homer	DW Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Zahnu Isam	Subject Matter Expert MPI	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880
Bidon Jahnie	Subject Matter Expert MPI	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880
Chi Young Kim	Subject Matter Expert MPI	\$ 272.00	155	\$ 45,968	\$ 272.00	155	\$ 45,968	\$ 272.00	155	\$ 45,968	\$ 272.00	155	\$ 45,968
Raja Krishnamoorthy	Subject Matter Expert MPI	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880
Nick Leclerc	Subject Matter Expert MPI	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880
Mary Jo Mail	DW BI Analyst Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
James McEvoy	DW Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Melathi Nadella	DW BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Laura Olson	DW Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Uday Rajuri	DW Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Anjan Pattnayak	DW BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Anush Peddala	DW Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Siva Peddela	DW Database Administrator	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Rama Prabhu	DW BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Tom Rothan	DW Designer/Modeler	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Mohammad Sabir	DW Developer Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
John Schuster	DW Architect	\$ 144.00	1,984	\$ 285,696	\$ 144.00	1,984	\$ 285,696	\$ 144.00	1,984	\$ 285,696	\$ 144.00	1,984	\$ 285,696
Ami Shah	DW Web Developer Junior	\$ 85.00	1,984	\$ 168,640	\$ 85.00	1,984	\$ 168,640	\$ 85.00	1,984	\$ 168,640	\$ 85.00	1,984	\$ 168,640
Kunal Shah	DW Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
John Snyder	DW BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Anil Suskanda	DW Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Vishal Tanneeru	DW BI Report Developer	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Jeff Tate	Subject Matter Expert Champs	\$ 185.00	1,984	\$ 367,040	\$ 185.00	1,984	\$ 367,040	\$ 185.00	1,984	\$ 367,040	\$ 185.00	1,984	\$ 367,040
Vincent Tran	Subject Matter Expert MPI	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880
Vinayak Tripathi	DW Developer Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Jeremy Valcourt	Subject Matter Expert MPI	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880	\$ 272.00	155	\$ 44,880
Arun Varde	DW Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Jim Davis	DW Project Manager	\$ 148.00	1,653	\$ 244,644	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632
Ray Desroches	DW Architect	\$ 144.00	1,653	\$ 238,032	\$ 144.00	1,324	\$ 190,656						
TBD Replacement	DW Architect				\$ 144.00	660	\$ 95,040	\$ 144.00	1,984	\$ 285,696	\$ 144.00	1,984	\$ 285,696
Madhu Gajula	DW Developer Senior	\$ 140.00	1,653	\$ 231,420	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Bruce Grant	DW Developer Senior	\$ 140.00	1,653	\$ 231,420	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Melissa Jourden	DW Project Manager	\$ 148.00	1,653	\$ 244,644									
TBD Replacement	DW BI Analyst Senior				\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Mohammad Khan	DW Database Administrator	\$ 140.00	1,653	\$ 231,420	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Murali Mahadevan	DW Architect BO	\$ 144.00	1,653	\$ 238,032	\$ 144.00	1,984	\$ 285,696	\$ 144.00	1,984	\$ 285,696	\$ 144.00	1,984	\$ 285,696
Swaroop Mudduluru	DW Developer Senior	\$ 140.00	1,653	\$ 231,420	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Lee Ritchie	DW Designer/Modeler	\$ 140.00	1,653	\$ 231,420	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Totals by Year			88,286	\$12,387,888		81,284	\$12,798,800		81,284	\$12,798,800		81,284	\$12,798,800
Totals Hours				362,077									
Totals Dollars				\$60,778,088									

TABLE 2

Position	Contract Year											
	Contract Year 1 Hourly Rate	Contract Year 1 Est Max Hours	Contract Year 1 Estimate Dollars	Contract Year 2 Hourly Rate	Contract Year 2 Est Max Hours	Contract Year 2 Estimate Dollars	Contract Year 3 Hourly Rate	Contract Year 3 Est Max Hours	Contract Year 3 Estimate Dollars	Contract Year 4 Hourly Rate	Contract Year 4 Est Max Hours	Contract Year 4 Estimate Dollars
Data Warehouse Project Manager	\$148.00	1,984	\$293,632	\$148.00	1,984	\$293,632	\$148.00	1,984	\$293,632	\$148.00	1,984	\$293,632
Data Warehouse Architect	\$144.00	1,984	\$285,696	\$144.00	1,984	\$285,696	\$144.00	1,984	\$285,696	\$144.00	1,984	\$285,696
Data Warehouse Database Administrator	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760
Data Warehouse Developer Junior/Senior	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760
Data Warehouse Designer/Modeler	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760
Data Warehouse BI Report Developer	\$120.00	1,984	\$238,080	\$120.00	1,984	\$238,080	\$120.00	1,984	\$238,080	\$120.00	1,984	\$238,080
Data Warehouse BI Analyst Junior/Senior	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760
Data Warehouse Help Desk Analyst	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760
Data Warehouse Web Developer Senior	\$120.00	1,984	\$238,080	\$120.00	1,984	\$238,080	\$120.00	1,984	\$238,080	\$120.00	1,984	\$238,080
Subject Matter Expert MPI	\$272.00	1,984	\$539,648	\$272.00	1,984	\$539,648	\$272.00	1,984	\$539,648	\$272.00	1,984	\$539,648
Data Warehouse Project Manager	\$148.00	1,653	\$244,644	\$148.00	1,653	\$244,644	\$148.00	1,653	\$244,644	\$148.00	1,653	\$244,644
Data Warehouse Developer Junior/Senior	\$140.00	1,653	\$231,420	\$140.00	1,653	\$231,420	\$140.00	1,653	\$231,420	\$140.00	1,653	\$231,420
Data Warehouse BI Analyst Junior/Senior	\$140.00	1,653	\$231,420	\$140.00	1,653	\$231,420	\$140.00	1,653	\$231,420	\$140.00	1,653	\$231,420
Data Warehouse Designer/Modeler	\$140.00	1,653	\$231,420	\$140.00	1,653	\$231,420	\$140.00	1,653	\$231,420	\$140.00	1,653	\$231,420
Totals by Year		28,462	\$3,922,840		27,778	\$4,110,848		27,778	\$4,110,848		27,778	\$4,110,848
Total Additional Prof. Services Hours and Cost by Year:		108,780										
Total Additional Professional Services Cost:			\$18,266,384									

Original Total for 4-Year Extension Period Costs from Table 1 and Table 2: \$52,996,608.00

New Total for 4-Year Extension Period Costs from Table 1 and Table 2: \$67,033,452.00

New Table 1 Cost: \$9,717,204.00

New Table 2 Costs: \$4,319,640.00

Total New Table 1 and Table 2 Costs: \$14,036,844.00

Note: The above estimated contract year hours and related dollars as well as the total hours and related total dollars in both Tables 1 and 2 are for planning and budgetary purposes. Optum shall be authorized to perform and bill and the State shall be entitled to receive and pay for those hours of Services mutually agreed upon as being necessary to provide the Services set forth in Attachment B and applicable projects covering the scope in Attachment B during the term of the agreement.

The estimated yearly contract hours and dollars will not preclude the State from utilizing the hours and dollars on an actual basis in amounts that vary from the estimates.



822 Centennial Way, Suite 100 | Lansing, MI 48917 | phone: (517) 993-0467 | www.optum.com

November 24, 2015

Mr. Ryan Hanna
Section Manager – Data Warehousing Support
Systems Development Division
Customer Service for MDHHS
Department of Technology, Management and Budget
9th Floor, Grand Tower Building
235 S. Grand Ave
Lansing, MI 48933

**RE: REVISED LETTER FOR SWAROOP MUDDLURUS EMPLOYER INFOMERICA AS AN APPROVED
SUBCONTRACTOR UNDER THE OPTUM GOVERNMENT SOLUTIONS BI SERVICES CONTRACT NO.
071B1300138**

Dear Ryan:

Optum Government Solutions, Inc. ("Optum") has been supplying Mr. Swaroop Muddulurus as a Data Warehouse Developer Senior to the State of Michigan ("the State") as part of Work Request number ITB-TH-00007 ("the Work Request") via the BI Services Contract No. 071B1300138 ("the Contract") since July of 2011.

Optum's original response to the Work Request in 2011 identified Mr. Muddulurus' supplier as Ramsoft System, Inc. and in our letter dated September 16, 2015 regarding this matter, Optum identified Infomerica Inc. as Mr. Muddulurus' new employer. Optum was subsequently notified by Infomerica Inc. on November 11, 2015 that Infomerica Inc. has secured the services of Mr. Muddulurus through a written, second tier subcontract with his employer Perk Systems, Inc. that contains applicable terms and conditions based on the requirements of the Optum-State of Michigan Contract 071B1300138 and the DHS Work Request awarded to Optum under such Contract.

In order to confirm Infomerica Inc. as an approved subcontractor from Optum under the Contract effective September 21, 2015, the State will need to issue a Contract Change Notice that references this letter.

Should you have any questions, please do not hesitate to contact me. Thank you again for the opportunity to work with you and your project team.

Sincerely,

David C. Wieber
Director of Michigan Operations
Optum Government Solutions

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT & BUDGET
PROCUREMENT

525 W. ALLEGAN STREET
LANSING, MI 48933

P.O. BOX 30026
LANSING, MI 48909

CHANGE NOTICE NO. **33**
to
CONTRACT NO. **071B1300138**
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	PHONE	CONTRACTOR'S TAX ID NO. (LAST FOUR DIGITS ONLY)
	(517) 993-0929	4101

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
PROGRAM MANAGER / CCI	DTMB	Susan Nordyke	(517) 373-9784	nordykes@michigan.gov
CONTRACT ADMINISTRATOR	DTMB	Terry Mead	(517) 284-7035	meadt@michigan.gov

CONTRACT SUMMARY			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS		DELIVERY TIMEFRAME	
N/A		N/A	
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			X Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS			
N/A			

DESCRIPTION OF CHANGE NOTICE				
EXERCISE OPTION?	LENGTH OF OPTION	EXERCISE EXTENSION?	LENGTH OF EXTENSION	REVISED EXP. DATE
X	4 years	<input type="checkbox"/>		December 20, 2019
CURRENT VALUE		VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE	
\$71,479,054.00		\$52,996,608.00	\$124,475,662.00	

DESCRIPTION: Services for Business Intelligence (BI) Work Request and Statement of Work for MDHHS Data Warehouse Project under Contract No. 071B1300138
Effective October 29, 2015, the State exercises 2 2-year options (4 years) and adds \$52,996,608 to the contract per the attached Statement of Work and Revised Optum Response dated October 30, 2015. This includes the attached Revised Cost Table A, which replaces in whole the existing Cost Table – Attachment A in the Contract. It also provides Optum's revised Work Request as Attachment B, and includes reduced hourly rates for the 4 year extension presented in Table 1 and Table 2. Optum also offers that these reduced rates in Table 1 and Table 2 will become effective November 1, 2015. All other terms, conditions, specifications, and pricing remain the same, per Contractor and Agency agreement, DTMB Procurement approval.



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October 30, 2015

Ms. Cynthia Green-Edwards
Director, Office of Medicaid Health Information Technology
Michigan Department of Health and Human Services
400 S. Pine St. Capitol Commons Building
Lansing, MI 48933

RE: THIRD REVISED RESPONSE TO BUSINESS INTELLIGENCE (BI) WORK REQUEST AND STATEMENT OF WORK FOR MDHHS DATA WAREHOUSE PROJECT UNDER CONTRACT No. 071B1300138

Dear Ms. Green-Edwards:

Thank you for your continued interest in working with Optum Government Solutions, Inc. ("Optum") in regards to the Data Warehouse Business Intelligence (BI) services that we are currently providing to the State of Michigan ("the State") via our BI Services Contract No. 071B1300138 and Work Request ITB-TH-DW-0014 (collectively, "the Contract").

As you know, the State originally asked Optum for a change to the Contract in the form of a revised Work Request and a rate quote for services extension of four (4) or six (6) years. In response to this request for change, Optum initially provided an Optum Response dated June 1, 2015 and then also provided a Revised Optum Responses on October 7, 2015 and October 26, 2015 (collectively, the "Prior Optum Responses"). Subsequently, the State has requested revisions and Optum is pleased to provide the State with this third revised response ("Third Revised Optum Response") that supersedes and replaces the Prior Optum Responses.

This Third Revised Optum Response includes a revised MDCH Work Request which as a result of Executive Order No. 2015 – 4 shall be referred to as the Michigan Department of Health and Human Services (MDHHS) Work Request given the State's consolidation of MDCH and DHS into MDHHS ("Revised MDHHS Work Request") and a rate quote for a services extension of four (4) years to cover the period starting from December 21, 2015 (the "Extension Period Start Date") and ending December 20, 2019 (the "Extension Period End Date"). The timeframe from the Extension Period Start Date through the Extension Period End Date will be defined as the "Extension Period". Optum is pleased to provide this Third Revised Optum Response and if the State accepts, it would become part of the overall contract for such services, supplementing the terms of the Contract.

Third Revised Optum Response

Revised MDHHS Work Request

1. Optum has provided a Revised MDHHS Work Request, included below as Attachment B, which includes an hourly rate quote for the Extension Period for the Revised MDHHS Work Request.
2. Hourly rates for a 4-year extension are presented as part of Table 1 and Table 2.
3. Optum is additionally offering to the State that the rates proposed for the Revised MDHHS Work Request Extension Period in Table 1 and Table 2 will become effective in 2015 on the 1st day of the month following the date that the State fully approves the Optum Revised

Response via a Contract Change Notice adding the funding for the Extension Period and extending the Contract Term through the Extension Period End Date.

BI Services Base Contract

1. Given that Optum is offering pricing beyond the current Contract term end date of December 20, 2015 for the Extension Period, the State will need to extend the Contract term end date through the Extension Period End Date as part of accepting this Optum Response.
2. Optum is also presenting a Revised Cost Table – Attachment A which will replace in whole the existing Cost Table – Attachment A in the Contract with effect as of the date described in the third numbered paragraph under the heading "Revised MDHHS Work Request" and continuing through the Extension Period End Date.

Acceptance of this Optum Response

In order to accept this Third Revised Optum Response, it is our understanding that the State would complete two actions on or before December 21, 2015:

- A. The State would issue a Change Notice to Contract 071B1300138 referencing the following items:
 1. This letter and date of the letter;
 2. The Estimated Revised Aggregate Contract Value would be increased by (a) the total amounts of Table 1 and Table 2 from this Third Revised Optum Response; and
 3. The Contract is extended through the Extension Period End Date.
- B. The State would also either:
 1. Issue a purchase order for the Contract Year 1 totals from Table 1 and Table 2; (with the understanding that subsequent purchase orders would be issued prior to the start of each successive Contract Year in the Work Request term prior to the commencing of the applicable Contract Year,) or,
 2. Issue a purchase order for (a) the total amount of Table 1 and Table 2 from the Revised MDHHS Work Request covering the Contract Years included in the Extension Period for the Revised MDHHS Work Request.

Should you have any questions, please do not hesitate to contact me. Thank you again for the opportunity to work with you and your project team.

Sincerely,



Point of Contact:

David Wieber
Michigan Director of Operations
Optum Government Solutions, Inc.
Phone Number: (517) 993-0929
Email Address: David.Wieber@optum.com


Paul Miller (Oct 30, 2015)

Signer:

Paul Miller
VP, Finance
Optum Corporate.

Revised Cost Table – Attachment A

Position Type	Not To Exceed Hourly Rate ¹
Data Warehouse Project Manager	\$168.00
Data Warehouse Architect	\$188.00
Data Warehouse Data Designer/Modeler	\$163.00
Data Warehouse Developer Senior/Junior	\$158.00
Data Warehouse Business Intelligence Analyst Senior/Junior	\$158.00
Data Warehouse Database Administrator	\$163.00
Data Warehouse Business Intelligence Report Developer	\$158.00
Data Warehouse Help Desk Analyst	\$145.00
Data Warehouse Web Developer	\$125.00
Subject Matter Expert	\$350.00
Advanced Analytics Software Consultant	\$275.00
Principal Consultant	\$450.00

1. These are not to exceed rates that will be appropriately discounted as individual SOWs are issued.

Attachment B - Revised MDHHS Work Request



**MICHIGAN DEPARTMENT OF TECHNOLOGY,
MANAGEMENT AND BUDGET
DATA WAREHOUSE (DW) AND BUSINESS INTELLIGENCE (BI) SERVICES
WORK REQUEST and STATEMENT OF WORK**

This Work Request and Statement of Work (collectively the "Work Request") are being issued to Optum Government Solutions, Inc. ("Optum" or "Vendor" or "Contractor") under Optum's Contract (071B1300138) with the Michigan Department of Technology, Management and Budget, Procurement, as established under the Data Warehouse and Business Intelligence Program.

Project Title: Michigan Department of Health and Human Services Data Warehouse	Period of Coverage or Extension Period 12/21/2015-Extension Period End Date
Requesting Agency: Michigan Department of Health and Human Services (MDHHS)	Request Date: 5/18/2015
Agency Project Manager: Cynthia Green-Edwards	Phone: 517-241-9998
DTMB Project Manager: Andrew Mason	Phone: 517-898-6815
DTMB Contract Administrator: Barb Suska	Phone: 517-335-4067

Required Skill Category Requested:

- o Data Warehouse Project Manager
- o Data Warehouse Architect
- o Data Warehouse Database Administrator
- o Data Warehouse Developer Senior
- o Data Warehouse Developer Junior
- o Data Warehouse Designer/Modeler
- o Data Warehouse Business Intelligence Report Developer
- o Data Warehouse Business Intelligence Analyst Senior
- o Data Warehouse Business Intelligence Analyst Junior
- o Data Warehouse Help Desk Analyst
- o Data Warehouse Web Developer
- o Data Warehouse Subject Matter Expert

BACKGROUND:

MDHHS has been using the data warehouse since 1994 to direct policy, detect fraud, identify potentially valuable new initiatives, reduce error rates, calculate rates and more.

MDHHS utilizes the data warehouse for multiple purposes including mission critical functions. It functions as the department's decision support system. MDHHS uses data from the warehouse for rate setting for hospitals and managed and long term care providers. It is used to manage the performance of its partners (managed care providers and others) as well as programs within MDHHS. The Department has an extensive analytics effort to ensure that funds are being spent most effectively, including detecting and prosecuting fraud, and assure that Medicaid beneficiaries are getting the best care possible. In support of departmental management, the data warehouse is used to analyze trends, report on all aspects of Medicaid, and provide critical support to the budgeting process. Beyond this, the data warehouse provides significant analytical support for epidemiology and other studies.

MDHHS will be adapting and expanding its use of the data warehouse as it completes the implementation of ongoing work in its Medicaid Management Information System (MMIS), known as CHAMPS (Community Health Automated Medicaid Processing System). CHAMPS efforts underway include federally mandated projects such as Electronic Health Records (EHR) Incentive Program, ICD-10 and Health Reform. In addition, MDHHS will be adding new data sources and increasing their collaboration with other agencies along with adding new analytical tools. The Department expects to utilize the data warehouse for Health Information Technology/Health Information Exchange initiatives, as well as for the state's Medicaid Eligibility and Enrollment Initiative (Medicaid Compliance Program), Integrated Care Dual Eligibles Project and the Enterprise Fraud Application. The Medicaid Electronic Health Record (EHR) Incentive Payment Program and Michigan Health Information Network are American Recovery and Reinvestment Act of 2009 (ARRA) initiatives to improve health care quality, cost, efficiency, and patient safety through electronic exchange of health information. An important requirement of these ARRA initiatives requires the use of clinical data to improve patient care outcomes which will involve significant research efforts using de-identified data. It is anticipated that much of the data will be stored in the data warehouse. To store and use of this ARRA initiative data will require significantly increased data warehouse capabilities.

MDHHS has relied on Contractor staff to provide data warehouse support and business intelligence services. These services include: providing data warehouse Extract, Transform and Load (ETL) services, application development, web development, business intelligence model, reporting, query development, help desk support, training and data analysis.

Brief Description of Services to be provided:

MDHHS, with assistance of the Michigan Department of Technology, Management and Budget (DTMB), has issued this Work Request to obtain the following positions to support, maintain and execute enhancement projects of various sizes for the MDHHS Data Warehouse:

- Three (3) Data Warehouse Project Manager
- Two (2) Data Warehouse Architect
- One (1) Data Warehouse Database Administrator
- Seven (7) Data Warehouse Developers Senior
- Two (2) Data Warehouse Developers Junior
- One (1) Data Warehouse Designer/Modeler
- One (1) Data Warehouse Business Intelligence Report Developer
- Two (2) Data Warehouse Business Intelligence Analysts Senior
- Seven (7) Data Warehouse Business Intelligence Analysts Junior
- One (1) Data Warehouse Help Desk Analyst
- Seven (7) Data Warehouse Web Developers Senior
- One (1) Data Warehouse Web Developers Junior
- Two (2) Data Warehouse Subject Matter Experts

This Work Request includes a total of thirty seven (37) Full Time Equivalents (FTEs). The total number of FTEs may be increased or decreased throughout the life of this Work Request, based on department needs and available funding.

It is the State's intent to establish this Work Request for BI Services to be provided to MDHHS for a time period defined above as the Extension Period. The Work Request may be renewed for three (3) two (2) year periods at pricing to be negotiated between the Vendor and the State.

It is anticipated the Work Request will begin on December 21, 2015. The work performed via this Work Request will be on a time and materials basis.

PROJECT OBJECTIVE:

The objective of this Work Request is to assist MDHHS with the development, support, maintenance and enhancement of MDHHS Data Warehouse applications, which is an on-going activity triggered by changes in federal and state regulations, evolving business needs, opportunities for improving business processes, continued software and hardware upgrades, and break fixes.

SCOPE OF WORK:

- The scope of this Work Request is to provide Data Warehouse Business Intelligence (BI) Services on an as needed basis to support maintain and execute enhancement projects of various sizes for the MDHHS Data Warehouse set forth in this Work Request.
- Develop and maintain Data Warehouse BI applications that support MDHHS's day-to-day business operations.
- Resources will become familiar with DTMB personnel roles, DTMB supporting MDHHS's business processes, and DTMB's State Unified Information Technology Environment (SUITE) and MDHHS Management policies and procedures.

TASKS:

REQUIRED TASKS

- The Vendor must attend orientation, security awareness training and any other relevant security and or confidentiality training requested by MDHHS and/or DTMB. Vendor staff must sign appropriate agreements or training certifications.

EXAMPLES OF ONGOING and UPCOMING CONTRACTOR TASKS

(these tasks may change based on direction from the State)

1. Run production reporting on the data warehouse

Tasks include:

- Complete development of production reports in response to changes in CHAMPS data warehouse model. This includes reports needed for ongoing certification of CHAMPS, the Medicaid Statistical Information System (MSIS) extracts, and other production reports used to manage and evaluate Medicaid programs. Users of these reports include but are not limited to MDHHS Medicaid management and staff, the State legislature, Federal agencies, counties and providers. Tasks include:
 - Map existing report data elements to corresponding updated fields in the CHAMPS data warehouse.
 - Conduct Joint Application Design (JAD) sessions to finalize requirements with MDHHS users.
 - Develop, test, and implement the updated version of the reports, including:

- State and federal reports
- Centers for Medicare & Medicaid Services (CMS)-372s for Children's Waiver, Elderly and Disabled Waiver, Habilitation Supports Waiver and Serious Emotional Disturbance
- MSIS
- CMS-416 report and Early and Periodic Screening, diagnostic, and Treatment (EPSDT) letters
- Rewrite production reports to align with ICD-10, Integrated Care Dual Eligibles Project, and Medicaid Eligibility and Enrollment changes.
- Provide input as a pilot state for T-MSIS. Work with CMS Developers to refine T-MSIS requirements, record layouts and data definitions. Develop extract processes to align with defined T-MSIS requirements, create internal system documentation, test files internally and with CMS, and implement approved processes.
- Develop Data Quality Improvement Program (DQIP) reports from the CHAMPS data warehouse for distribution to Medicaid Health Plans to provide feedback on performance related to their contracts with MDHHS.
- Provide training and support to Department of Technology, Management and Budget (DTMB) staff to facilitate report development and maintenance.
- Provide on-site expertise to incorporate newly-developed processes into the Business Objects environment, coordinate activities with the Consolidated Print Center, and integrate tools used to support data warehouse reporting.

2. Provide updated analytic, reporting, data mining, and web-based analytic tools to enhance the analytic capability of the staff

MDHHS vision continues to include the use of ad-hoc analytic, On Line Analytical Processing (OLAP) and data mining tools. The OLAP and data mining tools are needed to examine our data from multiple perspectives, which will allow identification of emerging trends and cost savings. This allows the ability to answer complex questions by performing multidimensional analysis across data sets and programs; and to drill up and down through successive layers of detail to uncover trends, relationships, and patterns for improved decision making.

Tasks include:

- Provide services related to potential upgrades of MDHHS's BI Query Reporting environment due to more recent versions of the software offered by the manufacturer.
- Provide services related to potential upgrades of MDHHS's Business Objects Crystal Reporting environment due to more recent versions of the software offered by the manufacturer.

Note: Both BI Query and Business Objects Crystal Reporting Software licensing will continue to be provided by the State via other contract vehicles.

3. Identify and load additional data sets on the data warehouse

As new systems and data sources are developed that support the administration of the Medicaid program, and expansions are made to existing source systems, they will be loaded to the data warehouse to be integrated with existing MDHHS data. This data could be Medicaid-specific, or could be non-Medicaid but provides a longitudinal view of beneficiaries and populations that could effect changes in Medicaid policy.

The process to add these data sets includes: defining requirements/which data tables/fields to include; determining whether or not to maintain history; developing load programs (using state standard Extract, Transform, Load (ETL) tool where possible); integrating new data with existing data in the BI Query model; and training MDHHS users.

Tasks include:

- Add Maternal and Infant Health Program (MIHP) Infant Screener and Maternal Summary data plus additional data elements from new development to the Maternal Screener, in order to enhance

MDHHS's ability to evaluate the program, evaluate effectiveness of interventions, and assess outcomes.

- Add Children's Waiver data from multiple sources (including Paradox database that is no longer supported) for purposes of enrollment and CMS-372 reporting.
- Add Human Services data needed for Medicaid reporting required by CMS, and/or establish MDHHS access to the Human Services data through a data warehouse View (e.g., Poverty/Income, Race/Ethnicity).
- Add 'trusted data sources' as they are identified as part of the ACA Eligibility Project and Enterprise Fraud Application.
- Add detail-level HEDIS data from Medicaid Health Plans. This will be used to evaluate performance measures as part of the CMS Adult Quality Measures grant, along with other initiatives.
- Add Veterans data to be incorporated into the Master Person Index to link to existing data sets.
- Add Buy-In source data for comparison to Medicare identified on the eligibility records. This will be used to ensure completeness of the MMA submissions.
- Add EMBRS data from mental health hospitals when source implementations are complete.
- Add Hospital and Long Term Care Cost Report data that currently resides in a system managed by Hewlett Packard (HP).
- Add T-MSIS submission file tables and corresponding data to the data warehouse for use in maintaining MSIS history, analysis and resubmission to CMS as necessary.
- Add Michigan Disease Surveillance System (MDSS) data. MDSS enables physicians and clinical laboratories to electronically report the occurrence or suspected occurrence of disease, conditions or infection required by the Michigan Communicable Disease Reporting Rule. Case reporting and management depends on the integration of data from multiple sources (e.g., laboratory results; patient information; disease condition, onset, symptoms, and hospitalization dates; and medication, treatment and clinical history). MDHHS has an opportunity to improve disease tracking and monitoring of Medicaid beneficiaries through the integration of MDSS and the MDHHS Data Warehouse.
- Add Newborn Screening data. This data was previously loaded to the data warehouse, but source system has been re-written, and corresponding data warehouse load processes are needed to capture data from the new system.
- Add Third Party Recovery data. Existing Medicaid payment recovery systems pull data from the warehouse for purposes of determining amounts to be recovered, but actual amounts recovered are not currently loaded back to the data warehouse. The addition of the recovery amounts to the data warehouse will provide a more complete and accurate representation of Medicaid payment amounts.
- Evaluate other data sources and add those that will benefit Michigan's Medicaid program or are needed to support reporting requirements.
- Add Provider Licensing data from the Department of Licensing and Regulatory Affairs for use in identifying and de-duplicating provider data.
- Add All Payers Claims Database.
- Add Health Risk Assessment (HRA) data from Enrollment Broker, Medicaid Health Plans and Integrated Care Organizations (ICOs).
- Add clinical and other data from the health information exchange, such as Electronic Quality Measures; and Admission, Discharge and Transfer (ADT) data.

4. Changes to existing data loads in order to stay current with enhancements to source systems: MICIS data sets (OASIS, Nursing Home, MDS); CSHCS; MCIR; WIC

As source systems are rewritten to align with new requirements and technology, corresponding enhancements are required to the data warehouse in order to load and store new data elements and provide query and reporting access to the data. Source system changes may be driven by changes at the federal level, such as implementation of the OASIS-C and Minimum Data Set for Nursing Homes (MDS) 3.0 data sets and forms. Source system changes may also be driven by changes at the MDHHS level, such as implementation of a new web-based application for Children's Special Health Care Services (CSHCS), which will include additions to the existing data set.

Tasks include:

- Develop, test and implement data warehouse enhancements as a result changes to source systems, including:
 - OASIS
 - Nursing Home
 - MDS
 - CSHCS
 - WIC (Women, Infants and Children)
 - MCIR (Michigan Care Improvement Registry)
 - Home Help Payments
 - Home Help Assessments
 - MIHP
 - Vital Records

5. Develop web applications to support Medicaid programs and processes

Tasks include:

- Develop, test and implement web applications to support the following waivers:
 - Children's Support Waiver (CSW)
 - Children with Serious Emotional Disturbance Waiver (SEDW),
 - Autism
 - Enhancements to the Habilitation Supports Waiver (HSW) application
 - Integrated Care Organization (ICO) Waiver
- These web applications will provide:
 - Automated workflow to process enrollment of waiver beneficiaries (including capture of demographic data not available in BRIDGES)
 - Tracking and reporting of waiver beneficiaries
 - Management and tracking of waiver "slots"
 - Integration with existing systems (e.g., BRIDGES, Statewide Automated Child Welfare Information System [SACWIS])
 - An interface to CHAMPS to provide data needed to process waiver payments.
- Add data for the following home and community based services waivers to be used by the corresponding web applications proposed to support the waivers:
 - CSW
 - SED
- Develop, test and implement an enhanced web-based application for MDHHS's Managed Care Compliance Review Tool to replace the existing Access-based Compliance Review Tool application (the Tool). This will allow health plans and MDHHS to update and access information through the web, rather than having to send the Access database back and forth to update information. The Tool summarizes all of the requirements of the Medicaid Comprehensive Health Plan contract, and State and Federal regulations, including fraud and abuse. MDHHS conducts an annual compliance review of the designated criteria within the Tool. This Tool is used to document the Health Plans' compliance with contract requirements as identified in each criterion.
- Develop, test and implement web applications to support
 - Beneficiary Monitoring Program
 - Integrated Care/Data Analytics
 - MDHHS Automated processes and workflow (e.g., NDC Crosswalk)

6. Create and manage METADATA for the MMIS IT Architecture, and provide BI-Administration capability for security and model management.

Metadata and field mapping will provide information on the descriptions and uses of the data, flow of the data through the system, relationship to CHAMPS screens, and relationship to legacy data warehouse data elements, as well as the transformation and cleansing procedures. This information will be especially useful

to analytic staff that may not be familiar with the operational detail of the data. It will also allow for the administration of the analytic tool environment and assessment of data integrity.

Tasks include:

- Map records to data warehouse fields, including transformation rules and frequency of updates throughout the process (e.g., 837 records, National Council for Prescription Drug Programs (NCPDP), corresponding fields in CHAMPS screens, and use in reports).
- Create business definitions/data dictionary for each data element in the new CHAMPS data model.
- Create and/or modify BI-Query models to allow user-access to pre-defined data sets based on access approved through the security process. For example, access may include combinations such as the following:
 - Identified/Linked
 - De-identified/Linked
 - Identified/Linked & Unlinked
 - De-identified/Linked & Unlinked
- Implement updates to roles and profiles (levels of security) for user access to the new CHAMPS data model.
- Implement updates to strong password rules.
- Develop interface maps for both CHAMPS and the data warehouse.
- Create web-based application that contains all of the mapping documentation and allows users to look up definitions and/or data relationships.

7. Provide additional data integration across program areas and continue to enhance architecture to align with MITA initiative

Tasks include:

- Enhance architecture to align with MITA by developing data exchanges between the data warehouse and health plans. By making additional data available to health plans, these secure data exchanges promote efficient and effective data integration and sharing for purposes of improving health care outcomes for Medicaid beneficiaries. These data exchanges are adaptable and will be used to help drive the Michigan Health Information Exchange (HIE) initiatives.
- Expand the use of Medicaid data in the Common Citizen and Events Models to assess other events that may be contributing to successes or shortfalls in programs, interventions and outcomes. This will also allow MDHHS to collaborate with other departments/agencies to improve Medicaid outcomes.
- Integrate Medicaid data with Corrections data to provide improved ability to identify the cross-population of Medicaid beneficiaries and prisoners, and therefore allow improved tracking and analysis of Medicaid beneficiaries.
- Integrate the data warehouse with other tool sets (e.g., Oracle, Access, ETL tools) to provide the ability to link to data that resides in source systems outside the data warehouse.
- Add new development to migrate data loads to the state's standard COTS ETL tool (DataStage) to improve data load processes, reduce risk and development/maintenance costs, and minimize differences between data warehouse and source system data.
- Evaluate and purchase tools to align technology framework with Medicaid Information Technology Architecture (MITA) standards (foster integrated, cross-functional business in order to improve administration of Michigan's Medicaid program).
- Establish processes and integrate data sets across state agencies for use with the Enterprise Fraud Application (COTS product)

8. Provide onsite analytic development for the various program models, and analytic tools

Tasks include:

- Update CHAMPS model-specific training manuals.
- Develop and deliver comprehensive training to educate end users on the use of the data based on

updated CHAMPS and BRIDGES requirements.

- Provide comprehensive training to help end users understand the business, and educate them on the relationship between the CHAMPS data and the Medicaid program. This will include development of materials for instructor-led classroom training as well as development of web-based training.
- Develop and deliver comprehensive training to educate developers on updated data warehouse structures and the use of data based on CHAMPS and BRIDGES requirements.
- Provide comprehensive training to help developers understand the business, and educate them on the relationship between the CHAMPS data and the Medicaid program.
- Provide first-line Help Desk Support to answer end user and developer questions related to the newly defined data models.
- Provide advanced analytic support and development at a level above the typical user's business and technical knowledge.
- Provide Business Objects training and support for development staff, related to developing production reports on the data warehouse.

9. Enhance the data warehouse as a result of CHAMPS and BRIDGES

Tasks include:

- Conduct Technical JAD sessions along with CNSI to redefine data extract layouts for updates to CHAMPS data sets, as well as relationships between tables, referential integrity, key fields, etc.
- Conduct User JADs for updates to CHAMPS Production model – to define usage requirements, data definitions, and alignment with CHAMPS screens.
- Complete development of various data structures to accommodate updates to CHAMPS and BRIDGES data, based on input from JADs.
- Develop new data mart to incorporate a single logic set for accessing CHAMPS data (e.g., single field for billing provider for all claim types) to simplify data access for end users and developers..
- Develop new BI Query Views in the data warehouse using the new data mart.
- Add and modify Metadata to reflect CHAMPS and BRIDGES changes.
- Rewrite data warehouse structure and load programs as a result of changes being implemented in CHAMPS. As approved in the CHAMPS APD-Us, these changes include CHAMPS Change Requests (e.g., addition of new fields and new functionality) that result in a corresponding change to the data warehouse, as well as additional data warehouse testing during the approved CHAMPS implementation extensions.
- To ensure compliance with new Managed Care Organization (MCO) Drug Rebates mandated by Health Care Reform (PPACA – Patient Protection and Affordable Care Act) that went into effect 3/23/10, the following work is required:
 - Create, test and implement new process to provide an interface file to the State's PBM Pharmacy Benefits Management Services (PBM) (Magellan Medicaid Administration, Inc.) containing the MCO Drug claims (NCPDP encounters and Institution/Professional encounters for physician administered drug products) and MCO provider reference data. This data will then be used by the PBM to invoice manufacturers for CMS Federal Drug Rebates.
 - Utilize the NDC (National Drug Code):HCPCS (Healthcare Common procedure Coding System) crosswalk reference table to establish encounter edits and reports for purposes of ensuring the physician administered encounter claims are formatted properly for rebate invoicing.
- The following require redesign to accommodate CHAMPS data warehouse changes:
 - MMA Part D submission files.
 - Eligible Months tables.
- Develop data warehouse structure and load programs to accommodate implementation of meaningful use processing in CHAMPS.
- Develop and update end user queries and reports to use updated models representing CHAMPS and BRIDGES data.
- Expand Situational Data in the warehouse. Situational data (fields not used directly to adjudicate a claim) are currently received from CHAMPS in a single, continuous, variable-size field, making it unusable by end users. This data will be parsed and stored in a format that makes it usable.

- Expand the data warehouse to accommodate ICD-10.
- Expand the data warehouse to include data needed to support electronic health record (EHR) (e.g., additional provider data, NLR data).
- Expand the data warehouse to include Prior Authorization data from CHAMPS.
- Expand the data warehouse to accommodate ACA Eligibility Initiatives, HIE and Health Insurance Exchange (HIX).
- Expand the data warehouse to accommodate Integrated Care Dual Eligibles Project.

10. Enhance the SURS process as a result of CHAMPS and BRIDGES

Tasks include:

- Develop new SURS extract process, which includes three parts:
 - Changes needed as a result of CHAMPS ICD-10 updates
 - Addition of Encounters to extract process
 - Replace quarterly extract with monthly extract.
- Enhance Audit programs as a result of CHAMPS changes including ICD-10 and Health Care Reform.

11. Load Pharmacy data directly to the data warehouse

Tasks include:

- Enhance the PBM data load process to include pharmacy paid claims enhancements. An example is the addition of data needed to further monitor and target outreach for purposes of increasing E-Prescribing in Michigan, and to collect information related to meaningful use.
- Load Pharmacy provider enrollment file from the State's PBM to the data warehouse.
- Rewrite NCPDP Encounter load programs to align with CHAMPS ICD-10 updates and PBM data.
- Rewrite the Medicaid Health Plan Point-of-Sale (POS) pharmacy carve-out claim utilization extract to pull data from the new CHAMPS structure. This weekly process creates a file containing pharmacy carve-out claims for beneficiaries enrolled in each plan. The Medicaid Health Plans use the claim data for utilization and disease management programs.

12. Develop web-based Security application

Tasks include:

- Develop enhancements to the Data Warehouse Security form/process in the web-based security application.
- Develop the Security form/process for access to additional Medicaid applications, such as:
 - BRIDGES
 - SOLQ
 - Buy-In
 - MCIR (Immunization Registry)
 - Lead
 - Home Help
 - MIHP
 - CSHCS
 - Third Party Electronic Database (TED)
 - Level of Care Determination
 - CMS 1915(c) Waiver web site.
 - Ambulatory Payment Classification (APC) web site (WebStrat)
 - Teradata Access for Applications
 - Master Person Index
 - Expand to other state agencies for access to their applications
 - Access to Waiver web applications

- Developer Access to Teradata
- Access to the Enterprise Fraud Application
- Data Exchange Gateway (DEG)
- Access to Monitoring programs
- Integrate CHAMPS Customer Relationship Management (CRM subsystem) user information with DSA user database. This will provide MDHHS with a complete picture of an individual's access across systems, via a single source application.
- Develop process to view an individual's approved/denied status across systems.
- Develop process to compare approved level of access in DSA with actual access in source system.
- Develop process to manage security of employee notifications from Human Resources (departures, position transfers, new hires) and/or integration with the Human Resource application. Actions include terminations of access, alerts to system owners, notifications to former and/or new managers, etc.
- Develop approval process for access to Medicaid data stored in the Cloud (Cloud Computing).
- Enhance the DSA application using modularized functionality providing an interface for rapid form development and implementation.

13. Enhance Data Warehouse Operability and Access

Analysis and development to optimize query and system performance will reduce data warehouse usage costs by improving efficiency and reducing storage space. Analysis of CHAMPS data warehouse usage will be performed to determine areas for improvement (e.g., rewrite queries, add statistics, and add/remove indexes to align with user access to data, compress databases). Solutions will then be identified, developed and implemented to address the identified areas for improvement.

Develop application to audit MDHHS data warehouse usage. This application would provide web-based access to stored information such as identification of which users accessed which data and frequency of access.

Tasks include:

- Develop code to analyze databases and queries, identify potential areas for enhancement, develop and implement solutions.
- Develop web-based data warehouse audit application.
- Develop, test and implement solutions for encryption of data at rest and in flight.
- Test and implement enhancements to accommodate Teradata v14 upgrade

14. Develop Queries and Reports to support the Medicaid Program

The MDHHS Data Warehouse is a critical component in the administration of the Medicaid Program. As such, it is frequently used as a source of information for audits, research, lawsuits, FOIA, and other similar requests for data. These requests typically require response within a short timeframe and require knowledge of both Medicaid and the data warehouse in order to provide required results within the defined timeframe.

Additionally, MDHHS will be participating in the ARRA funded comparative effectiveness research (CER). As a participant of CER, MDHHS will be providing data extracts related to specific proposals. MDHHS will use the data warehouse to provide requested data.

Tasks include:

- Develop code to extract data as requested for CER.
- Develop code to extract data as needed for audits, research, lawsuits, FOIA, and other similar requests.
- Develop code to extract data for use in proof-of-concept of Prospective Payment editing and other similar requests.

15. Develop and Configure Unique Client Identifier (UCI) Replacement

MDHHS developed the UCI using custom code in 2001. The UCI links person-level records from one database to another by evaluating the available data elements such as name, address, IDs – beneficiary, client, consumer – to determine if a match exists. When a match exists, a UCI is assigned that is used in all the databases. Once linked, they remain linked unless manually removed. Since 2001 when the UCI was first developed, there have been huge technology gains in master person technology. MDHHS adopted a new COTS product that is an independent system, yet fully integrated with the data warehouse, which will drastically reduce the amount of custom development required, speed integrations of additional sources, and reduce the ongoing operating cost of the system.

To enable these recent advances including enhanced person matching algorithms and new standards for identity management (including the required standards for HIE), the following Tasks are required.

Tasks include:

- Install and configure new hardware and software.
- Upgrade software for version releases.
- Integrate the software with other existing systems.
- Develop a Provider Index within the COTS product.
- Expand Master Person Index to include new data sources, real-time access, query functionality, golden record identifiers, etc.
- Develop householding functionality within the COTS product.
- Establish governance processes relate to use of the COTS product.
- Develop new data warehouse functionality to correspond with updates to MPI/PI.
- Monitor algorithms and system configuration and make recommendations for performance improvement.

16. Provide Data Warehouse Assistance to other States that may use "MMIS as a Service"

As other states potentially move to MMIS as a Service (MAAS) – which Illinois is currently doing with the IMPACT project – corresponding data warehouse development is required in order to load and store data elements from MAAS, integrate the data with other data sources, provide query and reporting access to the data, and support applications and activities based on that data. Leveraging the Michigan data warehouse team's established knowledge and expertise related to the MAAS (CHAMPS) data warehouse will reduce development cost, decrease risk, and provide consistency across state data warehouse implementations. The Michigan data warehouse team will provide consultation and technical assistance to development teams in other states who are implementing a MAAS data warehouse.

Tasks include:

- Provide documentation from Michigan's MAAS data warehouse structure (e.g., database models, table definitions, ETL code and supporting documentation, metadata, view definitions, data warehouse query models if applicable)
- Facilitate knowledge transfer sessions with development teams in other states to help them understand the MAAS data warehouse structure, job processes, and business definitions of the data elements.
- Assist with development of MAAS data warehouse tables and jobs for implementation in other states.

IT Classifications/Skills Set and Tasks:

The requirement is that the individual must possess the skills, knowledge, and experience required to perform the duties effectively and efficiently at the level specified in the work request.

1. Data Warehouse Project Manager

Data warehouse project manager manages the integration and/or development and delivery of very large

and complex deliverables directly to the customer. This position provides the primary interface between the Contractor, the State and third party providers.

- Establishes and manages the project plan, according to SUITE standards, including the development schedule, resource requirements and integration efforts of third party products. Periodically reports progress to State management.
- Motivates and directs project team; sets goals, objectives and priorities; assigns and reviews work.
- Acts as the primary interface with the State on issues regarding the project deliverable. Makes sure customer reviews are held with the customer user community and obtains sign-off on status reports and requirements.
- Makes sure approved methods, processes and tools are consistently used.
- Is accountable for meeting project schedule and results as well as for the State customer satisfaction and quality of the deliverables.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.
- Assists the MDHHS Agency Project Manager with documentation for managing the data warehouse such as presentations, reports and Advanced Planning Documentation (APD) to be submitted to CMS for funding.

Required Experience

- 5+ Years Project Manager or Team Lead Experience.
- 5+ Years Data Warehouse Experience.
- 3+ Years Teradata DW Experience.
- Medicaid Experience desired.

2. Data Warehouse Architect

Data warehouse architect designs total solutions involving multiple systems for large organizations. Solutions may use third party hardware and software. Participates/leads in the construction of models and pilot programs with senior level managers.

- Conducts model and pilot programs to test proposals or develop solutions to problems. Develops measurement criteria to evaluate programs and projects and develops or reviews estimates on technical aspects of projects.
- Responsible for data warehouse database design and providing technical direction to modelers, data analysts, ETL developers, and database administrators.
- Develops design proposals to meet MDHHS needs
- Approves integrated systems design proposals for technical content.
- Monitors the implementation for technical correctness so that MDHHS needs are met.
- Identifies, analyzes and evaluates alternative design solutions.

Required Experience

- 6+ Years Data Warehouse Architect and Model Experience.
- Teradata Version 13/14 Experience.
- Teradata Utilities Experience.
- 2+ Years Data Warehouse Administrator Experience.

3. Data Warehouse Database Administrator

Database administrator (DBA) is responsible for the availability, safety and usefulness of the MDHHS data warehouse databases.

- Working in conjunction with system administrators, perform server configuration to ensure that the

entire database system is capable of providing the services needed.

- Performance monitoring to identify bottlenecks and places where throughput can be improved.
- Security administration to ensure that the database cannot be accessed by unauthorized parties or damaged by anyone.
- Configure access to the data warehouse and communication between the warehouse and other servers.
- Physical database design translates the logical database design to work optimally for the specific database environment.
- Working with MDHHS data warehouse developers to establish standards and guidelines for access to MDHHS data warehouse databases.
- Collaborate with DTMB to provide data/database integrity for software installation and updates; and backup and restore, including:
 - o Software installation and database management system upgrades
 - o Software upgrades so that the database is in compliance with critical security patches, or, software upgrades deemed necessary by the State.
- Work with MDHHS data warehouse developers and MDHHS clients to optimize their queries.

Required Experience

- 4+ Teradata Database Administrator Experience.
- 2+ Teradata Version 13/14 Experience.
- Teradata Utilities Experience.
- Teradata Manager Experience.
- SQL Assistant Experience.
- Linux Experience.
- Oracle Experience.

4. Data Warehouse Developer Senior

Data warehouse developers perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other MDHHS applications. In addition they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.
- Work with developers and end user query developers to design and improve database queries.
- Train developers in how best to design queries for a specific database.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.

Required Experience

- 6+ Years SQL Development Experience.
- Business Analyst Experience.
- SQL and Performance Tuning Experience.
- Teradata Version 13/14 Experience
- SQL Assistant Experience.
- ETL Development using Teradata Utilities and Linux Experience.

5. Data Warehouse Developer Junior

Data warehouse developers perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other MDHHS applications. In addition they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.
- Work with developers and end user query developers to design and improve database queries.
- Train developers in how best to design queries for a specific database.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.

Required Experience

- 2+ Years SQL Development Experience.
- Teradata Utilities Experience.
- SQL Assistant Experience.

6. Data Warehouse Designer/Modeler

Data warehouse designer is responsible for the database modeling and design for an efficient data warehouse objects structure. This involves defining the tables, keys and relationships that will allow an application to retrieve and update data correctly and efficiently.

- Working with end users and developers to understand the data needs of MDHHS clients.
- Documenting the MDHHS data warehouse data involves including definitions, constraints and access needs.
- Creating and maintaining MDHHS data warehouse logical designs, including Entity Relationship diagrams, which illustrate what data will be stored, how it is organized, how it can be retrieved (keys) and how it relates to other data in the database.
- Creating and maintaining MDHHS data warehouse data definition language (DDL) that can be used to create and update the database.
- Working with the MDHHS Data Warehouse DBA and ETL developers, modify the logical design to create a physical design most suited to the database environment and the applications that will use it.
- Work with MDHHS Data Warehouse ETL developers and DBA to create and maintain database design standards.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their report development related tasks may include:
- Perform application development tasks in support of building data warehouse applications and integrating data warehouse resources into other Agency applications. Their development related activities may include tasks such as:
 - o Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
 - o Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
 - o SQL development.
 - o Work with developers and end user query developers to design and improve database queries.
 - o Train developers in how best to design queries for a specific database.

Required Experience

- 5+ Years Data Warehouse Modeling Experience.
- 5+ Years of SQL Development.
- Data Warehouse Architect Experience.

7. Data Warehouse Business Intelligence Report Developer

Data warehouse Business Intelligence Report Developer is expected to be able to work with agency requestors to define and develop new reports, and provide training and technical support to both DTMB developers and end user query developers.

- Working with end user requestors to understand their data needs and create and implement solutions to those needs.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
- Develop and present training classes for DTMB developers to better understand how to use the data warehouse development tools to create and implement reporting solution using the data warehouse.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 5+ Years of Business Objects Report Development Experience.
- 5+ Years of SQL Development.
- Business Analyst Experience.

8. Data Warehouse Business Intelligence Analyst Senior

Data warehouse business intelligence/analyst works with end users to provide information in a number of different ways.

- Running JAD sessions to understand and collect business requirements, develop use cases and determine what data is needed and how it is likely to be used.
- Creating ad-hoc queries to answer specific user questions.
- Program design and specification.
- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Supporting end user to enable them to create their own queries and reports as needed.
- Identify data problems and work with developers to correct them.
- Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
- Organize and run user groups to encourage self-support among end user and DTMB query and other data warehouse application developers.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
 - o Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - o Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
 - o Develop and present training classes for DTMB developers to better understand how to use the data warehouse development tools to create and implement reporting solution using the data warehouse.
 - o Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 6+ Years Project Lead/Data Warehouse BI Analyst Experience.
- Training Experience.
- SQL Assistant Experience.
- Medicaid experience desired.

9. Data Warehouse Business Intelligence Analyst Junior

Data warehouse business intelligence/analyst works with end users to provide information in a number of different ways.

- Running JAD sessions to understand and collect business requirements, develop use cases and determine what data is needed and how it is likely to be used.

- Creating ad-hoc queries to answer specific user questions.
- Program design and specification.
- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Supporting end user to enable them to create their own queries and reports as needed.
- Identify data problems and work with developers to correct them.
- Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
- Organize and run user groups to encourage self-support among end user and DTMB query and other data warehouse application developers.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
 - o Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - o Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the data warehouse tools available to them to support their own data needs where possible.
 - o Develop and present training classes for DTMB developers to better understand how to use the data warehouse development tools to create and implement reporting solution using the data warehouse.
 - o Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 2+ Years Project Lead/Data Warehouse BI Analyst Experience.
- Medicaid experience desired.

10. Data Warehouse Help Desk Analyst

Help desk staff provide first line support for end users and developers.

- Manages MDHHS Data Warehouse mailbox.
 - Assesses user identified issues and provides guidance for resolution.
 - Directs unresolved problems and reports to appropriate staff, if necessary.
 - Tracks and analyzes problem occurrences and resolutions.
- Conducts data warehouse user group training.
- Develops training materials.
- Assists with query/report development.
- Provides user assistance with data warehouse tool(s), model/database, business knowledge and recommendations for efficiency and solutions to meet user business needs.

Required Experience

- 3+ Years of Data Warehouse Help Desk Analyst Experience.
- Experience in supporting the end users in accessing the data warehouse and effectively utilize the desktop tools.

11. Web Developer

A Web Developer is responsible for designing and developing web-based applications that interact with and utilize the data warehouse to provide MDHHS users with highly interactive, easy to use web-based data warehouse applications.

- Defining and developing applications that rely on unique web-based technology and tools, and that will conform to standards defined by DTMB for user interface and usage of the data warehouse.
- Defining the web application user interface, business rules, database access and data warehouse access, and determining any data sources that need to be imported into the data warehouse for web application operation.
- Producing technical specification documents to review the web application with the user, and conducting JAD sessions to revise and finalize technical specifications.

- Prototyping of web application pages for user review and approval.
- Producing accurate and complete data mapping documents
- Performing user acceptance testing with users and DTMB to confirm that new web applications perform per specifications, and making adjustments to the web application as required
- Maintaining a development and staging environment for the development and testing of enhancements and updates to the web application.

Required Experience

- 5+ Years of Data Warehouse Web Developer Experience.
- Web development: HTML, JavaScript, Asp.net, Visual Studio.

12. Subject Matter Expert (SME)

A Subject Matter Expert (SME) will be responsible for providing specialized, in-depth knowledge of a business area(s) such as Medicaid, Master Person Index/Provider Index, Pharmacy, ICD-10, HEDIS, Metadata Management, and technology solutions.

- Leading or actively participating in work-groups with the need for specialized knowledge.
- Providing guidance on how their area of expertise can resolve an organizational need, and actively participates in all phases of a project/initiative by sharing their knowledge, expertise and ideas.
- Defining technology and business solutions based on thorough understanding of business processes and policies.
- Reviewing, helping re-engineer, or creating new processes and policies.
- Evaluating and defining technology requirements and solutions.
- Defining business needs, and identifying and recommending the most appropriate solutions.
- Providing documentation such as forms, manuals, correspondence, and procedures
- Understanding, articulating, and implementing best practices related to their area of expertise.

Required Experience

- Experience requirements will vary depending on area of expertise being requested. Current SMEs must have expertise in Medicaid, technology solutions, MPI/PI, metadata management, and business objects dashboards.

DELIVERABLES:

The deliverables and tasks agreed to in the resulting Contract shall comply with the following approval process:

APPROVAL OF DELIVERABLES, IN GENERAL:

(a) All Deliverables (Physical Deliverables, Written Deliverables, and Service Deliverables) require formal written approval by the State, in accordance with the following procedures. Formal approval by the State requires that the Deliverable be confirmed in writing by the State to meet its specifications, which will include the successful completion of Testing, to be led by the State with the support and assistance of Contractor. The parties acknowledge that the approval process set forth herein will be facilitated by ongoing consultation between the parties, visibility of interim and intermediate Deliverables and collaboration on key decisions.

(b) The State's obligation to comply with any State Review Period is conditioned on the timely delivery of Deliverables being reviewed.

(c) Prior to commencement of its review or testing of a Deliverable, the State may inspect the Deliverable to confirm that all components of the Deliverable have been delivered without material deficiencies. If the State determines that the Deliverable has material deficiencies, the State may refuse delivery of the Deliverable without performing any further inspection or testing of the Deliverable. Otherwise, the review period will be deemed to have started on the day the State and Contractor receive the Deliverable and agree that the Deliverable is ready for use and, where applicable, Contractor has provided certification to that effect.

(d) The State will approve in writing a Deliverable upon confirming that it conforms to and, performs in accordance with, its specifications without material deficiency. The State may, but shall not be required to, conditionally approve in writing a Deliverable that contains material deficiencies if the State elects to permit Contractor to rectify them post-approval. In any case, Contractor will be responsible for working diligently to correct within a

reasonable time at Contractor's expense all deficiencies in the Deliverable that remain outstanding at the time of State approval.

(e) If, after three (3) opportunities (the original and two repeat efforts), Contractor is unable to correct all deficiencies preventing Final Acceptance of a Deliverable, the State may: (i) demand that Contractor cure the failure and give Contractor additional time to cure the failure at the sole expense of Contractor; or (ii) keep any resulting Contract(s) in force and do, either itself or through other parties, whatever Contractor has failed to do, in which event Contractor shall bear any excess expenditure incurred by the State in so doing beyond the Contract(s) price for such Deliverable and will pay the State an additional sum equal to ten percent (10%) of such excess expenditure to cover the State's general expenses provided the State can furnish proof of such general expenses; or (iii) terminate the particular Statement of Work for default, either in whole or in part by notice to Contractor provided Contractor is unable to cure such breach. Notwithstanding the foregoing, the State shall not use, as a basis for exercising its termination rights under this Section, deficiencies discovered in a repeat State Review Period that could reasonably have been discovered during a prior State Review Period.

(f) The State, at any time and in its reasonable discretion, may halt the testing or approval process if such process reveals deficiencies in or problems with a Deliverable in a sufficient quantity or of a sufficient severity as to make the continuation of such process unproductive or unworkable. In such case, the State may return the applicable Deliverable to Contractor for correction and re-delivery prior to resuming the testing or approval process.

PROCESS FOR APPROVAL WRITTEN DELIVERABLES:

The State Review Period for Written Deliverables will be the number of days set forth in the applicable Statement of Work/Purchase Order following delivery of the final version of the Deliverable (failing which the State Review Period, by default, shall be five (5) Business Days for Written Deliverables of one hundred (100) pages or less and ten (10) Business Days for Written Deliverables of more than one hundred (100) pages). The duration of the State Review Periods will be doubled if the State has not had an opportunity to review an interim draft of the Written Deliverable prior to its submission to the State. The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within five (5) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF SERVICE DELIVERABLES:

The State Review Period for approval of Service Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) Business Days for a Service Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF PHYSICAL DELIVERABLES:

The State Review Period for approval of Physical Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) continuous Business Days for a Physical Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to

approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

ACCEPTANCE CRITERIA:

PROJECT CONTROL AND REPORTS:

A monthly progress report must be submitted to MDHHS and DTMB Project Managers throughout the life of this project. The report may be submitted with the billing invoice. Each monthly progress report must contain the following information:

- **Hours:** Indicate the number of hours expended during the past month, and the cumulative total to date for the project.
- **Tasks accomplished:** Indicate what projects have been worked on, and what was completed during the current reporting period.

SPECIFIC AGENCY STANDARDS:

Agency standards, if any, in addition to DTMB standards.

PAYMENT SCHEDULE:

Payment will be made on a time and materials basis (hourly based). The State will pay Contractor upon receipt of properly completed invoices which shall be submitted to the billing address on the State issued purchase order not more often than monthly. The State's Accounts Payable area will coordinate obtaining Agency Project Manager and The State Project Manager approvals. All invoices should reflect the purchase order, actual work completed by payment date, and must be approved by the Agency Project Manager and DTMB Project Manager prior to payment. The invoices shall describe and document to the State's satisfaction a description of the work performed the progress of the project, and fees

Payment shall be considered timely if made by the State within forty-five (45) days after receipt of properly completed invoices.

EXPENSES:

The State will NOT pay for any travel expenses, including hotel, mileage, meals, parking, etc.

PRICING SUMMARY

Pricing for the Extension Period is set forth in Table 1 below:

ADDITIONAL TIME & MATERIALS LABOR RATES FOR PROFESSIONAL SERVICES:

To the extent the parties agree that certain specific services must be provided on a time and materials basis, such services must be provided at the Labor Rates (Not to Exceed Hourly Rate cost column) in Table 2 below. Future amendments to this Work Request may utilize this rate structure, as agreed between the Contractor and State. Additionally the Contractor may utilize the rates in order to provide the State with a not to exceed time and materials price. Prices quoted herein will be used for change, addition, and / or deletion of work associated with this Work Request. The Estimated Hours is provided below as an estimate only and is not meant to preclude or limit the State from requesting a resource/staffing mix for future projects that exceeds the hours estimate for a specific Staffing Category as long as the Total Additional Professional Services Cost is not exceeded.

The MDHHS Project Manager is:

Cynthia Green-Edwards
Director, Office of Medicaid Health Information Technology
Michigan Department of Health and Human Services (MDHHS)
500 Pine Street, Capitol Commons Center
Lansing, Michigan 48933
517-241-9998
EDWARDSC@michigan.gov

The DTMB Project Manager is:

Andrew Mason
Director, Client Service Division
Michigan Department of Technology Management and Budget (DTMB)
Agency Services – Department of Health and Human Services (MDHHS)
300 East Michigan Avenue, Chandler Building
Lansing, MI
517-898-6815
MasonA5@michigan.gov

The DTMB Contract Administrator for this project is:

Barb Suska
Michigan Department of Technology, Management and Budget
DTMB Purchasing Operations – Constitution Hall Building – 1st Floor
525 West Allegan Street
Lansing, MI 48933
517-335-4067
Email: suskab2@michigan.gov

AGENCY RESPONSIBILITIES:

- The State may discontinue the services of any Vendor supplied staff with two weeks' notice without cause at any time.
- The State will provide access to networks, servers, software license (as appropriate), etc. needed for Vendor to perform tasks required for this Work Request.

LOCATION OF WHERE THE WORK IS TO BE PERFORMED:

The work is to be performed, completed, and managed at locations determined by the Vendor, but with the expectation that personnel will be available, on hand and able to complete emergency tasks. In addition, onsite support may be needed and will be identified at such time.

EXPECTED CONTRACTOR WORK HOURS AND CONDITIONS:

Contractor(s) must provide services during normal working hours (Monday through Friday, 7:00 a.m. to 6:00 p.m. ET.) and possible night and weekend hours depending on position and project requirements. 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. Contractor(s) shall observe the same standard holidays as State employees. The State does not compensate for holiday pay. Contractor(s) will not be reimbursed for travel expenses or travel time. No overtime will be permitted.

RIGHT TO OWNERSHIP:**State intends to own the Software at the end of the Contract**

- Ownership of Work Product by State. All Deliverables shall be owned by the State and shall be considered works made for hire by the Contractor for the State. The State shall own all United States and international copyrights, trademarks, patents or other proprietary rights in the Deliverables.
- Vesting of Rights. The Contractor agrees to assign, and upon creation of each Deliverable automatically assigns, to the State, ownership of all United States and international copyrights, trademarks, patents, or other proprietary rights in each and every Deliverable, whether or not registered by the Contractor, insofar as any such Deliverable, by operation of law, may not be considered work made for hire by the Contractor for the State. From time to time upon State's request, the Contractor and/or its personnel shall confirm such assignment by execution and delivery of such assignments, confirmations of assignment, or other written instruments as the State may request. The State shall have the right to obtain and hold in its own name all copyright, trademark, and patent registrations and other evidence of rights that may be available for Deliverables.
- STATE MUST RECEIVE FAIR MARKET VALUE FOR THE LICENSE – (This must be reviewed and negotiated by the DTMB Procurement Buyer)

TABLE 1

Resource Name	Position	Contract Year											
		Contract Year 1 Hourly Rate	Contract Year 1 Est Max Hours	Contract Year 1 Estimate Dollars	Contract Year 2 Hourly Rate	Contract Year 2 Est Max Hours	Contract Year 2 Estimate Dollars	Contract Year 3 Hourly Rate	Contract Year 3 Est Max Hours	Contract Year 3 Estimate Dollars	Contract Year 4 Hourly Rate	Contract Year 4 Est Max Hours	Contract Year 4 Estimate Dollars
Jeanne Barnstead	Data Warehouse Project Manager	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632
Johnny Bieber	Data Warehouse BI Analyst Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Corinne Blair	Subject Matter Expert MRI	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880
Sushakar Bonam	Data Warehouse Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Kathy Boak	Data Warehouse Help Desk Analyst	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Tim Carey	Data Warehouse Project Manager	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632
Tyson Carter	Subject Matter Expert MRI	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880
Sai Chenakuri	Data Warehouse Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Dheera Chikyal	Data Warehouse Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Ravi Chittamma	Data Warehouse Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Airan Chittem	Data Warehouse Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Jeremy Christiansen	Data Warehouse Architect	\$ 144.00	1,984	\$ 285,696	\$ 144.00	1,984	\$ 285,696	\$ 144.00	1,984	\$ 285,696	\$ 144.00	1,984	\$ 285,696
Deb Coburn	Data Warehouse BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Deepak Damegunta	Data Warehouse Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Nathan De Winkle	Data Warehouse BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Chris Elias	Subject Matter Expert MRI	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880
Bernesto Ferro	Subject Matter Expert MRI	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880
Casey Foth	Subject Matter Expert MRI	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880
Beth Friar	Data Warehouse BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Amy George	Data Warehouse Project Manager	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632	\$ 148.00	1,984	\$ 293,632
Daniel Homer	Data Warehouse Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Zahnu Isiam	Subject Matter Expert MRI	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880
Boon Jahnik	Subject Matter Expert MRI	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880
Chi Young Kim	Subject Matter Expert MRI	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880
Raja Krishnamoorthy	Subject Matter Expert MRI	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880
Nick Lacienc	Subject Matter Expert MRI	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880
Mary Jo Maki	Data Warehouse BI Analyst Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
James McEvoy	Data Warehouse Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Miahtli Nadella	Data Warehouse BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Laura Olson	Data Warehouse Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Uday Rajuri	Data Warehouse Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Amian Pathayak	Data Warehouse BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Anush Pederia	Data Warehouse Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Siva Pednekaluva	Data Warehouse Database Administrator	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Raina Prabhu	Data Warehouse BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Tom Rothan	Data Warehouse Designer/Modeler	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Mohammad Sabir	Data Warehouse Developer Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
John Schuster	Data Warehouse Architect	\$ 144.00	1,984	\$ 285,696	\$ 144.00	1,984	\$ 285,696	\$ 144.00	1,984	\$ 285,696	\$ 144.00	1,984	\$ 285,696
Ami Shah	Data Warehouse Web Developer Junior	\$ 85.00	1,984	\$ 168,640	\$ 85.00	1,984	\$ 168,640	\$ 85.00	1,984	\$ 168,640	\$ 85.00	1,984	\$ 168,640
Kunal Shah	Data Warehouse Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
John Snyder	Data Warehouse BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Anil Sukkandla	Data Warehouse Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Vishal Tammeeru	Data Warehouse BI Report Developer	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Jeff Tate	Subject Matter Expert Champs	\$ 185.00	1,984	\$ 367,040	\$ 185.00	1,984	\$ 367,040	\$ 185.00	1,984	\$ 367,040	\$ 185.00	1,984	\$ 367,040
Vincent Tran	Subject Matter Expert MRI	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880
Vinayak Tripathi	Data Warehouse Developer Junior	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760	\$ 140.00	1,984	\$ 277,760
Jerem Vaucourt	Subject Matter Expert MRI	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880	\$ 272.00	165	\$ 44,880
Arun Varde	Data Warehouse Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Totals by Year			73,408	\$10,265,216		73,408	\$10,265,216		73,408	\$10,265,216		73,408	\$10,265,216
FTE Total by Year			37.0			37.0			37.0			37.0	
Totals Dollars				\$41,060,864									

TABLE 2

Position	Contract Year											
	Contract Year 1 Hourly Rate	Contract Year 1 Est Max Hours	Contract Year 1 Estimate Dollars	Contract Year 2 Hourly Rate	Contract Year 2 Est Max Hours	Contract Year 2 Estimate Dollars	Contract Year 3 Hourly Rate	Contract Year 3 Est Max Hours	Contract Year 3 Estimate Dollars	Contract Year 4 Hourly Rate	Contract Year 4 Est Max Hours	Contract Year 4 Estimate Dollars
Data Warehouse Project Manager	\$148.00	1,984	\$293,632	\$148.00	1,984	\$293,632	\$148.00	1,984	\$293,632	\$148.00	1,984	\$293,632
Data Warehouse Architect	\$144.00	1,984	\$285,696	\$144.00	1,984	\$285,696	\$144.00	1,984	\$285,696	\$144.00	1,984	\$285,696
Data Warehouse Database Administrator	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760
Data Warehouse Developer Junior/Senior	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760
Data Warehouse Designer/Modeler	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760
Data Warehouse BI Report Developer	\$120.00	1,984	\$238,080	\$120.00	1,984	\$238,080	\$120.00	1,984	\$238,080	\$120.00	1,984	\$238,080
Data Warehouse BI Analyst Junior/Senior	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760
Data Warehouse Help Desk Analyst	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760	\$140.00	1,984	\$277,760
Data Warehouse Web Developer Senior	\$120.00	1,984	\$238,080	\$120.00	1,984	\$238,080	\$120.00	1,984	\$238,080	\$120.00	1,984	\$238,080
Subject Matter Expert MPI	\$272.00	1,984	\$539,648	\$272.00	1,984	\$539,648	\$272.00	1,984	\$539,648	\$272.00	1,984	\$539,648
Totals by Year		19,840	\$2,983,936		19,840	\$2,983,936		19,840	\$2,983,936		19,840	\$2,983,936
FTE Total by Year		10.0			10.0			10.0			10.0	
Total Additional Prof. Services Hours and Cost by Year:		79,360										
Total Additional Professional Services Cost:			\$11,935,744									

Total 4-Year Extension Period Costs from Table 1 and Table 2: \$52,996,608

Note: The above estimated contract year hours and related dollars as well as the total hours and related total dollars in both Tables 1 and 2 are for planning and budgetary purposes. Optum shall be authorized to perform and bill and the State shall be entitled to receive and pay for those hours of Services mutually agreed upon as being necessary to provide the Services set forth in Attachment B and applicable projects covering the scope in Attachment B during the term of the agreement.

The estimated yearly contract hours and dollars will not preclude the State from utilizing the hours and dollars on an actual basis in amounts that vary from the estimates.

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

CHANGE NOTICE NO. 32
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Whitnie Zuker	517-284-7030	zuckerw@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card	<input type="checkbox"/> Direct Voucher (DV)	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		December 20, 2015
VALUE/COST OF CHANGE NOTICE:			ESTIMATED REVISED AGGREGATE CONTRACT VALUE:	
\$20,277,376.00			\$71,479,054.00	

Effective March 02, 2015, Contract Section 2.024 is amended. DTMB Financial Services will issue Purchase Orders per approved/signed Statement of Work(s) in place of a Contract Change Notice.

As part of this amendment, this Contract is hereby INCREASED by \$20,277,376.00 to add a pool of dollars to the Contract which can be leveraged through approved/signed Statements of Work(s). The State is under no obligation to utilize all or any specific portion of the allocated dollars.

All other terms, conditions, specifications and pricing remain the same. Per contractor and agency agreement, and DTMB Procurement approval.

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

CHANGE NOTICE NO. 31
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Whitnie Zuker	517-335-5306	zuckerw@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MIDEAL PARTICIPANTS
<input type="checkbox"/> P-card	<input type="checkbox"/> Direct Voucher (DV)	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		December 20, 2015
VALUE/COST OF CHANGE NOTICE:		ESTIMATED REVISED AGGREGATE CONTRACT VALUE:		
\$0.00		\$51,201,678.00		

Effective August 1, 2014, this Contract is amended to include the following:

1. APP Consulting, Inc. will be approved as an Optum subcontractor.
2. Per already awarded ITB-TH-DW-0014, One (1) Data Warehouse Subject Matter Expert, Dan Riehle from APP Consulting, Inc. will provide Metadata Services. Work shall commence 8/1/2014 and be performed in accordance with a mutually agreed upon schedule with MDCH through December 31, 2014 and Optum may invoice for such services under Purchase Order 084N4301287 issued by the State under the Contract. The hourly rate will be \$225.00. The estimated number of hours of services is 320; total estimated cost of \$72,000.00

All other terms, conditions, specifications, and pricing remain the same. Per vendor and agency agreement and DTMB Procurement approval.



822 Centennial Way, Suite 100 | Lansing, MI 48917 | phone: (517) 993-0467 | www.optum.com

June 26, 2014

Ms. Cynthia Green-Edwards
Director, Office of Medicaid Health Information Technology
Michigan Department of Community Health
400 S. Pine St. Capitol Commons Building
Lansing, MI 48933

RE: ADDING APP CONSULTING, INC. AND RELATED STAFFING FOR THE METADATA MANAGEMENT PROJECT VIA AN AMENDMENT TO THE MDCH DATA WAREHOUSE WORK REQUEST ENTERED INTO UNDER THE BI SERVICES CONTRACT NO. 071B1300138

Dear Cynthia:

Pursuant to your request, Optum Government Solutions, Inc. ("Optum") is requesting State of Michigan (the "State") approval of the following subcontractor and staffing modification to the MDCH BI Services Work Request between Optum and the State, entered into under Contract No. 071B1300138, as amended (the "Contract"), in support of the State's Metadata Services project. The Metadata Services project is part of the existing MDCH BI Services Work Request in so far as such project includes a task as "Create and manage METADATA for the MMIS IT Architecture".

Optum is pleased to propose Mr. Dan Riehle from APP Consulting, Inc. who will be billed to the State in the role of a Data Warehouse Subject Matter Expert Metadata Services at the hourly rate of \$225.00. Mr. Riehle will be assigned as the Data Warehouse Metadata Services Project and is intended to start on the project effective upon the later of July 21, 2014 or the date the State signs the Change Notice referenced below (the "Effective Date").

By accepting this request in the manner described below, the State will be deemed to have approved the following amendments to the MDCH BI Services Work Request and the Contract:

- (a) APP Consulting, Inc. will be approved as an Optum subcontractor under Contract 071B1300138, including being an approved subcontractor under Attachment A, Section 4 of our HIPAA Business Associates Addendum dated February 29, 2012; and
- (b) Services by Mr. Riehle shall commence no earlier than the Effective Date and be performed in accordance with a mutually agreed upon schedule with MDCH through December 31, 2014 and Optum may invoice for such services under Purchase Order 084N4301287 issued by the State under the Contract. The estimated number of hours of services is 320.

In order to accept the proposed subcontractor, staff, and quoted rate from Optum, the State will need to issue a Change Notice under the Contract that references this proposal on or before July 21, 2014.

Should you have any questions, please do not hesitate to contact me. Thank you again for the opportunity to work with you and your project team.

Sincerely,

David Wieber

Point of Contact:
David C. Wieber
Director of Michigan Operations
Optum Government Solutions

James Franke
James Franke (Jun 27, 2014)

Signer:
James Franke
Senior Vice President
Optum Government Solutions

cc: Andrey Verevko

AGREED TO: STATE OF MICHIGAN MDCH

By: Cynthia Green-Edwards
Cynthia Green-Edwards (Jun 27, 2014)

Date: Jun 27, 2014

Printed Name: Cynthia Green-Edwards

Title: Director, Office of Medicaid Health Information Technology

AGREED TO: STATE OF MICHIGAN DTMB

By: Andrey Verevko
Andrey Verevko (Jun 27, 2014)

Date: Jun 27, 2014

Printed Name: Andrey Verevko

Title: DTMB Client Services Director for MDCH

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

CHANGE NOTICE NO. 30
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Whitnie Zuker	517-335-5306	zuckerw@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card	<input type="checkbox"/> Direct Voucher (DV)	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		December 20, 2015
VALUE/COST OF CHANGE NOTICE:			ESTIMATED REVISED AGGREGATE CONTRACT VALUE:	
\$1,663,328.00			\$51,201,678.00	

Effective Immediately, this Contract is hereby increased by \$1,663,328.00 and the following amendment of resources are as follows:

- I. The services originally engaged based on ITB-JK-DW-0003 and subsequent vendor letter agreeing to an extension dated 6/20/2014 are being continued for the estimated time period of 6/25/14 to 12/24/14 for named resource below. Total cost of \$133,920.00:
 1. Kiran Vootkuri, at a rate of \$135/hour, for one (1) Data Warehouse Developer Senior. Total of 992 hours at a total cost of \$133,920.00
- II. The services originally engaged based on ITB-JK-DW-0005 are being continued for the estimated time period of 6/26/14 to 12/25/14 for named resource below. Total cost of \$140,864.00:

1. Vigneshwar Reddymasu, at a rate of \$142/hour, for one (1) Data Warehouse Data Modeler Senior. Total of 992 hours at a total cost of \$140,864.00

III. The services originally engaged based on ITB-TH-00001 to ITB-TH-00008 are being continued for the estimated time period of 7/25/14 to 1/24/15 for named resources below. Total cost of \$1,118,976.00:

1. Sai Swaroop Mudduluru, at a rate of \$103/hour, for one (1) Data Warehouse Data Developer Junior. Total of 992 hours at a total cost of \$102,176.00
2. Bruce Grant, at a rate of \$139/hour, for one (1) Data Warehouse Data Developer Senior. Total of 992 hours at a total cost of \$137,888.00
3. Ray Desmeules, at a rate of \$163/hour, for one (1) Data Warehouse Architect Senior. Total of 992 hours at a total cost of \$161,696.00
4. Lee Richie, at a rate of \$143/hour, for one (1) Data Warehouse Data Modeler Senior. Total of 992 hours at a total cost of \$141,856.00
5. Mohommod Khan, at a rate of \$140/hour, for one (1) Data Warehouse Database Administrator Senior. Total of 992 hours at a total cost of \$138,880.00
6. Murali Mahadevan, at a rate of \$149/hour, for one (1) Data Warehouse Business Objects Administrator Senior. Total of 992 hours at a total cost of \$147,808.00
7. Melissa Jourden, at a rate of \$147/hour, for one (1) Data Warehouse Project Manager Senior. Total of 992 hours at a total cost of \$145,824.00
8. Jim Davis, at a rate of \$144/hour, for one (1) Data Warehouse Business Analyst Senior. Total of 992 hours at a total cost of \$142,848.00

IV. The services originally engaged based on ITB-TH-00016 are being continued for the estimated time period of 7/22/14 to 1/21/15 for named resources below. Total cost of \$269,568.00:

1. Manjunatha Subbaiah, at a rate of \$144/hour, for one (1) Data Warehouse Business Object Developer Senior. Total of 936 hours at a total cost of \$134,784.00
2. Madhu Gajula, at a rate of \$144/hour, for one (1) Data Warehouse Business Object Developer Senior. Total of 936 hours at a total cost of \$134,784.00

All other terms, conditions, specifications and pricing remain the same. Per vendor and agency agreement and the approval of DTMB Procurement

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

CHANGE NOTICE NO. 29
 to
CONTRACT NO. 071B1300138
 between
THE STATE OF MICHIGAN
 and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Whitnie Zuker	517-335-5306	zuckerw@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		December 20, 2015
VALUE/COST OF CHANGE NOTICE:		ESTIMATED REVISED AGGREGATE CONTRACT VALUE:		
\$248,000.00		\$49,538,350.00		

Effective immediately, the ongoing services are continued for the State's Work Request ITB-JK-DW-0011 and the related Vendor extension letter dated June 19, 2014 for resource Amarnath Koganti at a rate of \$125.00/hr not to exceed 1,984 hours for One (1) Data Warehouse Senior Developer.

This Contract is also hereby increased by \$248,000.00. All other terms, conditions, specifications and pricing remain unchanged. Per vendor and agency agreement and the approval of DTMB.



822 Centennial Way, Suite 100 | Lansing, MI 48917 | phone: (517) 993-0929 | www.Optum.com

June 19, 2014

Mr. David Hatch
Buyer
State of Michigan
Michigan Department of Technology, Management and Budget
DTMB Purchasing Operations – Constitution Hall Building – 1st Floor
525 West Allegan Street
Lansing, MI 48933

RE: RESPONSE TO REQUEST TO EXTEND BUSINESS INTELLIGENCE (BI) WORK REQUEST NO. ITB-JK-DW-0011 FOR A DATA WAREHOUSE DEVELOPER SENIOR STAFF UNDER CONTRACT NO. 071B1300138 (the "Work Request")

Dear Mr. Hatch:

Optum Government Solutions, Inc. ("Optum") is pleased to respond to the State's request to extend the services of Mr. Amarnath Koganti via Work Request ITB-JK-DW-0011 for an additional 1 year from the date set forth in the State's purchase order issued as part of accepting this Response (currently estimated to be July 15, 2014) ("the Extended Term"). Optum is providing this Response to the State's request and if the State accepts this Response, it would become part of the overall contract for such services, supplementing the terms of Contract No. 071B1300138 and the Work Request (collectively, the "Contract").

During the Extended Term, Mr. Koganti would be available to provide the Services consistent with the conditions set forth in the Work Request and this Response

The table below sets forth the actual hourly rate that would be charged by Optum to the State for the Services performed by the Mr. Koganti during the Extended Term for up to 1,984 additional hours.

Consultant Name	Labor Category	Applicable Hourly Rate*	Estimated Timeframe for Applicable Hourly Rate**
Amarnath Koganti	Data Warehouse Senior Developer	\$125	7/15/14 – 7/14/15

*The above hourly rate would apply to any Services performed by the named consultant during the Extended Term.

**Actual start date of the Extension Term shall be defined in the State's purchase order.

Acceptance of this Response

In order to accept this Response, it is our understanding that the State would issue a Change Notice to Contract 071B1300139 referencing this Change Request letter and date and issue a purchase order covering the Extended Term for which pricing has been quoted above, based on a number of hours that is consistent with the terms in this Response.

Should you have any questions, please do not hesitate to contact me. Thank you again for the opportunity to work with you and your project team.

Sincerely,

David Wieber

Point of Contact:

David Wieber
Michigan Director of Operations
Optum Government Solutions, Inc.
Phone Number: (517) 993-0929
Email Address: David.Wieber@Optum.com

Signer:

James Franke
James Franke Jan 16, 2014

James Franke
Senior Vice President
Optum Government Solutions, Inc.

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

CHANGE NOTICE NO. 28
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Whitnie Zuker	517-335-5306	zuckerw@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		December 20, 2015
VALUE/COST OF CHANGE NOTICE:			ESTIMATED REVISED AGGREGATE CONTRACT VALUE:	
\$0.00			\$49,290,350.00	

Effective immediately, This Contract is hereby amended to include as is requested in the Optum Letter dated March 28, 2014 and pursuant to Article 2.072 of the Contract which reads: "The State shall have the right of prior written approval of all Subcontractors...", the State of Michigan hereby approves Optum's use of CW Professional Services, LLC as a subcontractor. All other terms, conditions, specifications and pricing remain the same. Per vendor letter dated January 24, 2014 and agency agreement and the approval of DTMB Procurement.



822 Centennial Way, Suite 100 | Lansing, MI 48917 | phone: (517) 993-0929 | www.optum.com

March 28, 2014

Mr. Whitnie Zuker
Buyer
State of Michigan
Michigan Department of Technology, Management and Budget
DTMB Purchasing Operations – Constitution Hall Building – 1st Floor
525 West Allegan Street
Lansing, MI 48933

RE: **SUBCONTRACT APPROVAL REQUEST PURSUANT TO: CONTRACT No. 071B1300138 (DTMB-Data Warehouse Business Intelligence)**

Dear Ms. Zuker:

Optum recently received a notice from our subcontractor Compuware Corporation ("Compuware") that it had sold the assets of its Professional Services Division to Marlin Equity Partners ("Marlin"). The assets sold to Marlin included Optum's subcontract with Compuware (the "Subcontract"). Subsequent to Marlin's acquisition of the assets, Marlin assigned the Subcontract to its subsidiary CW Professional Services, LLC ("CWPS"). Optum has evaluated the above assignment and concluded that it will not negatively impact the DTMB-Data Warehouse Business Intelligence contract (the "Contract") we have with the State of Michigan. Our conclusion is based on the fact that CWPS will honor all terms of the Subcontract and the fact that the CWPS resource ("Manjunatha Subbaiah") assigned to the Contract via Change Notice #9 on July 16, 2012 will remain unchanged. Please note that Michigan had previously approved the original Subcontract and the assigned resource.

With the above as background, this letter requests your written approval for Optum to subcontract with CWPS. This request is submitted pursuant to Article 2.072 of the Contract which reads: "The State shall have the right of prior written approval of all Subcontractors..."

To assist you in your evaluation of this request, I have attached a copy of the notice Optum received from Compuware.

Should you have any questions or require additional documentation, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink that reads "David Wieber".

Point of Contact:

David Wieber
Michigan Director of Operations
Optum Government Solutions, Inc.
Phone Number: (517) 993-0929
Email Address: David.Wieber@optum.com

Compuware Corporation
One Campus Martius
Detroit, Michigan 48226



RE: Sale of Compuware's Professional Services Division Business Unit

Dear Valued Compuware Customer:

On January 31, 2014, Compuware Corporation ("Compuware") completed the sale of the assets of its Professional Services Division to Marlin Equity Partners ("Marlin"). The professional services provided to you pursuant to the Master, Consulting and/or Professional Services Agreement ("Acquired Services") are part of the sale.

As an existing customer of Compuware or a Compuware-owned subsidiary, you have been identified as receiving one or more of the Acquired Services. This letter serves as notice that the Acquired Services were assigned to Marlin's subsidiary, CW Professional Services, LLC ("CWPS") on January 31, 2014 under the terms of a replica agreement which has the same terms and conditions of the Agreement you currently have with Compuware, and CWPS has all of the rights and obligations under the replica agreement. All the Acquired Services being assigned will continue to be performed by CWPS.

The Acquisition will have no effect on the amount or due date of any payment due, or scheduled to become due, under prior statements of work, purchase orders, addendums or other contractual documents previously executed with Compuware. However, with respect to the Acquired Services, CWPS will invoice for payment dates after January 31, 2014, and Compuware will invoice for payment dates on or before January 31, 2014. Please note that all invoices received from Compuware shall remain due and payable to Compuware. Compuware may act as a billing agent for CWPS during a transitional period of time after January 31, 2014.

A representative of CWPS will contact you to answer any questions you may have. In the meantime, if you have any urgent questions or would like additional information, please contact Mary Kozlowski, at 414-773-6810 or at mary.kozlowski@cwprofessionalservices.com. We have also included attachments containing remittance details, banking information and a copy CWPS's W-9 to assist with this transition.

Sincerely,

A handwritten signature in black ink, appearing to read "Daniel S. Follis, Jr.", is positioned above the printed name.

Daniel S. Follis, Jr.
Senior Vice President, General Counsel & Secretary
Compuware Corporation

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

CHANGE NOTICE NO. 27
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Whitnie Zuker	517-335-5306	zukerw@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MIDEAL PARTICIPANTS
<input type="checkbox"/> P-card	<input type="checkbox"/> Direct Voucher (DV)	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		December 20, 2015
VALUE/COST OF CHANGE NOTICE:		ESTIMATED REVISED AGGREGATE CONTRACT VALUE:		
\$145,600.00		\$49,290,350.00		
Effective immediately, the services originally engaged based on ITB#0071141113B0000506 for one (1) Data Warehouse Architect, Ravi Sivarajan, has been replaced with Jagdish Kannappan at a rate of \$140/hour, estimated time frame of 1/27/2014 to 5/2/2014. All other terms, conditions, specifications and pricing remain the same. Per vendor letter dated January 24, 2014 and agency agreement and the approval of DTMB Procurement.				



822 Centennial Way, Suite 100 | Lansing, MI 48917 | phone: (517) 993-0929 | www.Optum.com

January 24, 2014

Mr. Brad Pagratis
State of Michigan
Michigan Department of Technology, Management and Budget
Center for Shared Solutions
George W. Romney Building - 10th Floor
111 South Capitol Avenue
Lansing, MI 48933

RE: **REPLACEMENT OF DATA WAREHOUSE ARCHITECT RESOURCE WORKING ON CSS TREASURY DATA QUALITY PROJECT FOR BUSINESS INTELLIGENCE (BI) WORK REQUEST NO. B0000506 UNDER CONTRACT NO. 071B1300138 (the "CSS Work Request")**

Dear Mr. Pagratis:

Optum Government Solutions, Inc. ("Optum") is pleased to offer **Mr. Jagdish Kannappan** to the State's as a replacement for Mr. Ravi Sivarajan who has resigned and is no longer available for us to supply on the CSS Treasury Data Quality project which we are performing as the result of being awarded Bid No. B0000506. If the State accepts this proposed replacement, it would become part of the overall contract for such services, supplementing the terms of Contract No. 071B1300138, as amended and the CSS Work Request (collectively, the "Contract").

The table below sets forth the actual hourly rate that would be charged by Optum to the State for the Services performed by the Mr. Kannappan during the remaining term of the CSS Work Request.

Consultant Name	Labor Category	Applicable Hourly Rate*	Estimated Timeframe for Applicable Hourly Rate**
Jagdish Kannappan	Data Warehouse Architect	\$140	1/27/14 – 5/2/14

*The above hourly rate would apply to any Services performed by the named consultant during the Extended Term.

**Actual start date of the Extension Term shall be defined in the State's revised Purchase Order 084N4300292.

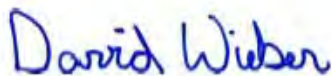
Acceptance of this Response

In order to accept this proposed change, it is our understanding that the State would issue a Revised Purchase Order 084N4300292 with:

1. A new line item referencing Jagdish Kannappan as the resource at \$140.00 per hour.
2. The new line item would contain the remaining dollars on the Purchase Order which we have estimated to be \$76,560.
3. The end date specified on the PO would be changed to May 2, 2014
4. The existing line item for Ravi Sivarajan would be reduced to 536 hours and \$88,440.00

Should you have any questions, please do not hesitate to contact me. Thank you again for the opportunity to work with you and your project team.

Sincerely,



Point of Contact:

David Wieber
Michigan Director of Operations
Optum Government Solutions, Inc.
Phone Number: (517) 993-0929
Email Address: David.Wieber@Optum.com

Signer:



James Franke (Jan 29, 2014)

James Franke
Senior Vice President
Optum Government Solutions, Inc.

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

CHANGE NOTICE NO. 26
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Whitnie Zuker	517-335-5306	zuckerw@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MIDEAL PARTICIPANTS
<input type="checkbox"/> P-card	<input type="checkbox"/> Direct Voucher (DV)	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		December 20, 2015
VALUE/COST OF CHANGE NOTICE:		ESTIMATED REVISED AGGREGATE CONTRACT VALUE:		
\$145,600.00		\$49,290,350.00		
Effective immediately, the services originally engaged based on ITB-JK-DW-0005 are being continued for the time period of 11/28/2013 to 11/27/2014 for named resource VigenShwar ReddyMasu, at a rate of \$142/hour, for one (1) Data Warehouse Data Modeler Senior. All other terms, conditions, specifications and pricing remain the same. Per vendor and agency agreement and the approval of DTMB Procurement.				

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

November 26, 2013

CHANGE NOTICE NO. 25
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Whitnie Zuker	517-335-5306	zuckerw@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card	<input type="checkbox"/> Direct Voucher (DV)	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:							
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE			
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		December 20, 2015			
VALUE/COST OF CHANGE NOTICE:		ESTIMATED REVISED AGGREGATE CONTRACT VALUE:					
\$24,458,752.00		\$49,144,750.00					
Effective Immediately, the services originally engaged based on ITB-TH-0014 are being continued for the time period of 1/1/2014 to 12/20/2015 as specified in the Vendor letter and Work Request attached below dated November 25, 2013.							
This contract is also hereby INCREASED by \$24,458,752.00. All other terms, conditions, specifications and pricing remain the same. Per vendor and agency agreement and the approval of DTMB Procurement.							

Acceptance of this Response

In order to accept this Response, it is our understanding that the State would issue a Change Notice to Contract 071B1300138 referencing the following items:


1. This letter and date of the letter;
2. Indicating that the Estimated Revised Aggregate Contract Value is being increased by the total amount of Table 1 and Table 2 from this Response.

The State would also either:

1. Issue a Purchase Order for the Calendar Year 2014 totals from Table 1 and Table 2; (with the understanding that subsequent purchase orders would be issued prior to the start of each successive calendar year in the Work Request approximately 2 year term prior to the commencing of the applicable calendar year,) or,
2. Issue a Purchase Order for the total amount of Table 1 and Table 2 from the Work Request covering the entire approximately two (2) year term for the Work Request.

Should you have any questions, please do not hesitate to contact me. Thank you again for the opportunity to work with you and your project team.

Sincerely,



Point of Contact:

David Wieber
Michigan Director of Operations
Optum Government Solutions, Inc.
Phone Number: (517) 993-0929
Email Address: David.Wieber@optum.com

Signer: 
Paul Emerson (Nov 22, 2013)

Paul Emerson
Executive Vice President
Optum Government Solutions, Inc.



**MICHIGAN DEPARTMENT OF TECHNOLOGY,
MANAGEMENT AND BUDGET
DATA WAREHOUSE (DW) AND BUSINESS INTELLIGENCE (BI) SERVICES
WORK REQUEST and STATEMENT OF WORK**

This Work Request and Statement of Work (collectively the "Work Request") are being issued to Optum Government Solutions, Inc. ("Optum" or "Vendor" or "Contractor") under Optum's Contract (071B1300138) with the Michigan Department of Technology, Management and Budget, Procurement, as established under the Data Warehouse and Business Intelligence Program.

Project Title: Michigan Department of Community Health Data Warehouse	Period of Coverage: 01/01/2014-12/20/2015
Requesting Agency: Michigan Department of Community Health (MDCH)	Date: 10/9/2013
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Required Skill Category Requested:

- Data Warehouse Project Manager
- Data Warehouse Architect
- Data Warehouse Database Administrator
- Data Warehouse Developer Senior
- Data Warehouse Developer Junior
- Data Warehouse Designer/Modeler
- Data Warehouse Business Intelligence Report Developer
- Data Warehouse Business Intelligence Analyst Senior
- Data Warehouse Business Intelligence Analyst Junior
- Data Warehouse Help Desk Analyst
- Data Warehouse Web Developer
- Data Warehouse Subject Matter Expert

BACKGROUND:

MDCH has been using the data warehouse since 1994 to direct policy, detect fraud, identify potentially valuable new initiatives, reduce error rates, calculate rates and more.

MDCH utilizes the data warehouse for multiple purposes including mission critical functions. It functions as the department's decision support system. MDCH uses data from the warehouse for rate setting for hospitals and managed and long term care providers. It is used to manage the performance of its partners (managed care providers and others) as well as programs within MDCH. The Department has an extensive analytics effort to ensure that funds are being spent most effectively, including detecting and prosecuting fraud, and assure that Medicaid beneficiaries are getting the best care possible. In support of departmental management, the data warehouse is used to analyze trends, report on all aspects of Medicaid, and provide critical support to the budgeting process. Beyond this, the data warehouse provides significant analytical support for epidemiology and other studies.

MDCH will be adapting and expanding its use of the data warehouse as it completes the implementation of ongoing work in its Medicaid Management Information System (MMIS), known as CHAMPS (Community Health Automated Medicaid Processing System). CHAMPS efforts underway include federally mandated projects such as Electronic Health Records (EHR) Incentive Program, ICD-10 and Health Reform. In addition, MDCH will be adding new data sources and increasing their collaboration with other agencies along with adding new analytical tools. The Department expects to utilize the data warehouse for Health Information Technology/Health Information Exchange initiatives, as well as for the state's Medicaid Eligibility and Enrollment Initiative (Medicaid Compliance Program), Integrated Care Dual Eligibles Project and the Enterprise Fraud Application. The Medicaid Electronic Health Record (EHR) Incentive Payment Program and Michigan Health Information Network are American Recovery and Reinvestment Act of 2009 (ARRA) initiatives to improve health care quality, cost, efficiency, and patient safety through electronic exchange of health information. An important requirement of these ARRA initiatives requires the use of clinical data to improve patient care outcomes which will involve significant research efforts using de-identified data. It is anticipated that much of the data will be stored in the data warehouse. To store and use of this ARRA initiative data will require significantly increased data warehouse capabilities.

MDCH has relied on Contractor staff to provide data warehouse support and business intelligence services. These services include: providing data warehouse Extract, Transform and Load (ETL) services, application development, web development, business intelligence model, reporting, query development, help desk support, training and data analysis.

Brief Description of Services to be provided:

The State of Michigan Department of Community Health (MDCH), with assistance of the Michigan Department of Technology, Management & Budget (DTMB), has issued this Work Request to obtain the following positions to support, maintain and execute enhancement projects of various sizes for the MDCH Data Warehouse:

- Three (3) Data Warehouse Project Manager
- Two (2) Data Warehouse Architect
- One (1) Data Warehouse Database Administrator
- Six (6) Data Warehouse Developers Senior
- Two (2) Data Warehouse Developers Junior
- One (1) Data Warehouse Designer/Modeler
- One (1) Data Warehouse Business Intelligence Report Developer
- Four (4) Data Warehouse Business Intelligence Analysts Senior
- Four (4) Data Warehouse Business Intelligence Analysts Junior
- One (1) Data Warehouse Help Desk Analyst
- Five (5) Data Warehouse Web Developers
- Two (2) Data Warehouse Subject Matter Experts

This Work Request includes a total of thirty two (32) Full Time Equivalents (FTEs). The total number of FTEs may be increased or decreased throughout the life of this Work Request, based on department needs and available funding.

It is the State's intent to establish this Work Request for BI Services to be provided to MDCH for a time period of slightly less than two (2) years. The Work Request may be renewed for up to five (5) additional two (2) year periods.

It is anticipated the Work Request will begin on January 1, 2014. The work performed via this Work Request will be on a time and materials basis.

PROJECT OBJECTIVE:

The objective of this Work Request is to assist MDCH with the development, support, maintenance and enhancement of MDCH Data Warehouse applications, which is an on-going activity triggered by changes in federal and state regulations, evolving business needs, opportunities for improving business processes, continued software and hardware upgrades, and break fixes.

SCOPE OF WORK:

- The scope of this Work Request is to provide Data Warehouse Business Intelligence (BI) Services on an as needed basis to support maintain and execute enhancement projects of various sizes for the MDCH Data Warehouse set forth in this Work Request.
- Develop and maintain Data Warehouse BI applications that support MDCH's day-to-day business operations.
- Resources will become familiar with DTMB personnel, MDCH's business processes, and DTMB's State Unified Information Technology Environment (SUITE) and MDCH Management policies and procedures.

TASKS:

REQUIRED TASKS

- The Vendor must attend orientation, security awareness training and any other relevant security and or confidentiality training requested by MDCH and/or DTMB. Vendor staff must sign appropriate agreements or training certifications.

EXAMPLES OF ONGOING and UPCOMING CONTRACTOR TASKS

(these tasks may change based on direction from the State)

1. Run production reporting on the data warehouse

Tasks include:

- Complete development of production reports in response to changes in CHAMPS data warehouse model. This includes reports needed for ongoing certification of CHAMPS, the Medicaid Statistical Information System (MSIS) extracts, and other production reports used to manage and evaluate Medicaid programs. Users of these reports include but are not limited to MDCH Medicaid management and staff, the State legislature, Federal agencies, counties and providers. Tasks include:
 - Map existing report data elements to corresponding updated fields in the CHAMPS data warehouse.
 - Conduct Joint Application Design (JAD) sessions to finalize requirements with MDCH users.
 - Develop, test, and implement the updated version of the reports, including:
 - State and federal reports

- Centers for Medicare & Medicaid Services (CMS)-372s for Children's Waiver, Elderly and Disabled Waiver, Habilitation Supports Waiver and Serious Emotional Disturbance
 - MSIS
 - CMS-416 report and Early and Periodic Screening, diagnostic, and Treatment (EPSDT) letters
- Rewrite production reports to align with ICD-10, Integrated Care Dual Eligibles Project, and Medicaid Eligibility and Enrollment changes.
 - Provide input as a pilot state for T-MSIS. Work with CMS Developers to refine T-MSIS requirements, record layouts and data definitions. Develop extract processes to align with defined T-MSIS requirements, create internal system documentation, test files internally and with CMS, and implement approved processes.
 - Develop Data Quality Improvement Program (DQIP) reports from the CHAMPS data warehouse for distribution to Medicaid Health Plans to provide feedback on performance related to their contracts with MDCH.
 - Provide training and support to Department of Technology, Management and Budget (DTMB) staff to facilitate report development and maintenance.
 - Provide on-site expertise to incorporate newly-developed processes into the Business Objects environment, coordinate activities with the Consolidated Print Center, and integrate tools used to support data warehouse reporting.

2. Provide updated analytic, reporting, data mining, and web-based analytic tools to enhance the analytic capability of the staff

MDCH vision continues to include the use of ad-hoc analytic, On Line Analytical Processing (OLAP) and data mining tools. The OLAP and data mining tools are needed to examine our data from multiple perspectives, which will allow identification of emerging trends and cost savings. This allows the ability to answer complex questions by performing multidimensional analysis across data sets and programs; and to drill up and down through successive layers of detail to uncover trends, relationships, and patterns for improved decision making.

Tasks include:

- Provide services related to potential upgrades of MDCH's BI Query Reporting environment due to more recent versions of the software offered by the manufacturer.
- Provide services related to potential upgrades of MDCH's Business Objects Crystal Reporting environment due to more recent versions of the software offered by the manufacturer.

Note: Both BI Query and Business Objects Crystal Reporting Software licensing will continue to be provided by the State via other contract vehicles.

3. Identify and load additional data sets on the data warehouse

As new systems and data sources are developed that support the administration of the Medicaid program, and expansions are made to existing source systems, they will be loaded to the data warehouse to be integrated with existing MDCH data. This data could be Medicaid-specific, or could be non-Medicaid but provides a longitudinal view of beneficiaries and populations that could effect changes in Medicaid policy.

The process to add these data sets includes: defining requirements/which data tables/fields to include; determining whether or not to maintain history; developing load programs (using state standard Extract, Transform, Load (ETL) tool where possible); integrating new data with existing data in the BI Query model; and training MDCH users.

Tasks include:

- Add Maternal and Infant Health Program (MIHP) Infant Screener and Maternal Summary data plus additional data elements from new development to the Maternal Screener, in order to enhance MDCH's ability to evaluate the program, evaluate effectiveness of interventions, and assess outcomes.
- Add Children's Waiver data from multiple sources (including Paradox database that is no longer supported) for purposes of enrollment and CMS-372 reporting.
- Add Michigan Department of Human Services (MDHS) data needed for Medicaid reporting required by CMS, and/or establish MDCH access to the MDHS data through a data warehouse View (e.g., Poverty/Income, Race/Ethnicity).
- Add 'trusted data sources' as they are identified as part of the ACA Eligibility Project and Enterprise Fraud Application.
- Add detail-level HEDIS data from Medicaid Health Plans. This will be used to evaluate performance measures as part of the CMS Adult Quality Measures grant, along with other initiatives.
- Add Veterans data to be incorporated into the Master Person Index to link to existing data sets.
- Add Buy-In source data for comparison to Medicare identified on the eligibility records. This will be used to ensure completeness of the MMA submissions.
- Add EMBRS data from mental health hospitals when source implementations are complete.
- Add Hospital and Long Term Care Cost Report data that currently resides in a system managed by Hewlett Packard (HP).
- Add T-MSIS submission file tables and corresponding data to the data warehouse for use in maintaining MSIS history, analysis and resubmission to CMS as necessary.
- Add Michigan Disease Surveillance System (MDSS) data. MDSS enables physicians and clinical laboratories to electronically report the occurrence or suspected occurrence of disease, conditions or infection required by the Michigan Communicable Disease Reporting Rule. Case reporting and management depends on the integration of data from multiple sources (e.g., laboratory results; patient information; disease condition, onset, symptoms, and hospitalization dates; and medication, treatment and clinical history). MDCH has an opportunity to improve disease tracking and monitoring of Medicaid beneficiaries through the integration of MDSS and the MDCH Data Warehouse.
- Add Newborn Screening data. This data was previously loaded to the data warehouse, but source system has been re-written, and corresponding data warehouse load processes are needed to capture data from the new system.
- Add Third Party Recovery data. Existing Medicaid payment recovery systems pull data from the warehouse for purposes of determining amounts to be recovered, but actual amounts recovered are not currently loaded back to the data warehouse. The addition of the recovery amounts to the data warehouse will provide a more complete and accurate representation of Medicaid payment amounts.
- Evaluate other data sources and add those that will benefit Michigan's Medicaid program or are needed to support reporting requirements.
- Add Provider Licensing data from the Department of Licensing and Regulatory Affairs for use in identifying and de-duplicating provider data.
- Add All Payers Claims Database.

4. Changes to existing data loads in order to stay current with enhancements to source systems: MICIS data sets (OASIS, Nursing Home, MDS); CSHCS; MCIR; WIC

As source systems are rewritten to align with new requirements and technology, corresponding enhancements are required to the data warehouse in order to load and store new data elements and provide query and reporting access to the data. Source system changes may be driven by changes at the federal level, such as

implementation of the OASIS-C and Minimum Data Set for Nursing Homes (MDS) 3.0 data sets and forms. Source system changes may also be driven by changes at the MDCH level, such as implementation of a new web-based application for Children's Special Health Care Services (CSHCS), which will include additions to the existing data set.

Tasks include:

- Develop, test and implement data warehouse enhancements as a result changes to source systems, including:
 - OASIS
 - Nursing Home
 - MDS
 - CSHCS
 - WIC (Women, Infants and Children)
 - MCIR (Michigan Care Improvement Registry)
 - Home Help Payments
 - Home Help Assessments
 - MIHP
 - Vital Records

5. Develop web applications to support Medicaid programs and processes

Tasks include:

- Develop, test and implement web applications to support the following waivers:
 - Children's Support Waiver (CSW)
 - Children with Serious Emotional Disturbance Waiver (SEDW),
 - Autism
 - Enhancements to the Habilitation Supports Waiver (HSW) application

These web applications will provide:

- Automated workflow to process enrollment of waiver beneficiaries (including capture of demographic data not available in BRIDGES)
- Tracking and reporting of waiver beneficiaries
- Management and tracking of waiver "slots"
- Integration with existing systems (e.g., BRIDGES, MDHS's Statewide Automated Child Welfare Information System [SACWIS])
- An interface to CHAMPS to provide data needed to process waiver payments.
- Add data for the following home and community based services waivers to be used by the corresponding web applications proposed to support the waivers:
 - CSW
 - SED
- Develop, test and implement an enhanced web-based application for MDCH's Managed Care Compliance Review Tool to replace the existing Access-based Compliance Review Tool application (the Tool). This will allow health plans and MDCH to update and access information through the web, rather than having to send the Access database back and forth to update information. The Tool summarizes all of the requirements of the Medicaid Comprehensive Health Plan contract, and State and Federal regulations, including fraud and abuse. MDCH conducts an annual compliance review of the designated criteria within the Tool. This Tool is used to document the Health Plans' compliance with contract requirements as identified in each criterion.
- Develop, test and implement web applications to support
 - Beneficiary Monitoring Program
 - Integrated Care/Data Analytics
 - MDCH Automated processes and workflow (e.g., NDC Crosswalk)

6. Create and manage METADATA for the MMIS IT Architecture, and provide BI-Administration capability

for security and model management.

Metadata and field mapping will provide information on the descriptions and uses of the data, flow of the data through the system, relationship to CHAMPS screens, and relationship to legacy data warehouse data elements, as well as the transformation and cleansing procedures. This information will be especially useful to analytic staff that may not be familiar with the operational detail of the data. It will also allow for the administration of the analytic tool environment and assessment of data integrity.

Tasks include:

- Map records to data warehouse fields, including transformation rules and frequency of updates throughout the process (e.g., 837 records, National Council for Prescription Drug Programs (NCPDP), corresponding fields in CHAMPS screens, and use in reports).
- Create business definitions/data dictionary for each data element in the new CHAMPS data model.
- Create and/or modify BI-Query models to allow user-access to pre-defined data sets based on access approved through the security process. For example, access may include combinations such as the following:
 - Identified/Linked
 - De-identified/Linked
 - Identified/Linked & Unlinked
 - De-identified/Linked & Unlinked
- Implement updates to roles and profiles (levels of security) for user access to the new CHAMPS data model.
- Implement updates to strong password rules.
- Develop interface maps for both CHAMPS and the data warehouse.
- Create web-based application that contains all of the mapping documentation and allows users to look up definitions and/or data relationships.

7. Provide additional data integration across program areas and continue to enhance architecture to align with MITA initiative

Tasks include:

- Enhance architecture to align with MITA by developing data exchanges between the data warehouse and health plans. By making additional data available to health plans, these secure data exchanges promote efficient and effective data integration and sharing for purposes of improving health care outcomes for Medicaid beneficiaries. These data exchanges are adaptable and will be used to help drive the Michigan Health Information Exchange (HIE) initiatives.
- Expand the use of Medicaid data in the Common Citizen and Events Models to assess other events that may be contributing to successes or shortfalls in programs, interventions and outcomes. This will also allow MDCH to collaborate with other departments/agencies to improve Medicaid outcomes.
- Integrate Medicaid data with Corrections data to provide improved ability to identify the cross-population of Medicaid beneficiaries and prisoners, and therefore allow improved tracking and analysis of Medicaid beneficiaries.
- Integrate the data warehouse with other tool sets (e.g., Oracle, Access, ETL tools) to provide the ability to link to data that resides in source systems outside the data warehouse.
- Add new development to migrate data loads to the state's standard COTS ETL tool (DataStage) to improve data load processes, reduce risk and development/maintenance costs, and minimize differences between data warehouse and source system data.
- Evaluate and purchase tools to align technology framework with Medicaid Information Technology Architecture (MITA) standards (foster integrated, cross-functional business in order to improve

administration of Michigan's Medicaid program).

- Establish processes and integrate data sets across state agencies for use with the Enterprise Fraud Application (COTS product)

8. Provide onsite analytic development for the various program models, and analytic tools

Tasks include:

- Update CHAMPS model-specific training manuals.
- Develop and deliver comprehensive training to educate end users on the use of the data based on updated CHAMPS and BRIDGES requirements.
- Provide comprehensive training to help end users understand the business, and educate them on the relationship between the CHAMPS data and the Medicaid program. This will include development of materials for instructor-led classroom training as well as development of web-based training.
- Develop and deliver comprehensive training to educate developers on updated data warehouse structures and the use of data based on CHAMPS and BRIDGES requirements.
- Provide comprehensive training to help developers understand the business, and educate them on the relationship between the CHAMPS data and the Medicaid program.
- Provide first-line Help Desk Support to answer end user and developer questions related to the newly defined data models.
- Provide advanced analytic support and development at a level above the typical user's business and technical knowledge.
- Provide Business Objects training and support for development staff, related to developing production reports on the data warehouse.

9. Enhance the data warehouse as a result of CHAMPS and BRIDGES

Tasks include:

- Conduct Technical JAD sessions along with CNSI to redefine data extract layouts for updates to CHAMPS data sets, as well as relationships between tables, referential integrity, key fields, etc.
- Conduct User JADs for updates to CHAMPS Production model – to define usage requirements, data definitions, and alignment with CHAMPS screens.
- Complete development of various data structures to accommodate updates to CHAMPS and BRIDGES data, based on input from JADs.
- Develop new data mart to incorporate a single logic set for accessing CHAMPS data (e.g., single field for billing provider for all claim types) to simplify data access for end users and developers..
- Develop new BI Query Views in the data warehouse using the new data mart.
- Add and modify Metadata to reflect CHAMPS and BRIDGES changes.
- Rewrite data warehouse structure and load programs as a result of changes being implemented in CHAMPS. As approved in the CHAMPS APD-Us, these changes include CHAMPS Change Requests (e.g., addition of new fields and new functionality) that result in a corresponding change to the data warehouse, as well as additional data warehouse testing during the approved CHAMPS implementation extensions.
- To ensure compliance with new Managed Care Organization (MCO) Drug Rebates mandated by Health Care Reform (PPACA – Patient Protection and Affordable Care Act) that went into effect

3/23/10, the following work is required:

- Create, test and implement new process to provide an interface file to the State's PBM Pharmacy Benefits Management Services (PBM) (Magellan Medicaid Administration, Inc.) containing the MCO Drug claims (NCPDP encounters and Institution/Professional encounters for physician administered drug products) and MCO provider reference data. This data will then be used by the PBM to invoice manufacturers for CMS Federal Drug Rebates.
 - Utilize the NDC (National Drug Code):HCPCS (Healthcare Common procedure Coding System) crosswalk reference table to establish encounter edits and reports for purposes of ensuring the physician administered encounter claims are formatted properly for rebate invoicing.
- The following require redesign to accommodate CHAMPS data warehouse changes:
 - MMA Part D submission files.
 - Eligible Months tables.
- Develop data warehouse structure and load programs to accommodate implementation of meaningful use processing in CHAMPS.
- Develop and update end user queries and reports to use updated models representing CHAMPS and BRIDGES data.
- Expand Situational Data in the warehouse. Situational data (fields not used directly to adjudicate a claim) are currently received from CHAMPS in a single, continuous, variable-size field, making it unusable by end users. This data will be parsed and stored in a format that makes it usable.
- Expand the data warehouse to accommodate ICD-10.
- Expand the data warehouse to include data needed to support electronic health record (EHR) (e.g., additional provider data, NLR data).
- Expand the data warehouse to include Prior Authorization data from CHAMPS.
- Expand the data warehouse to accommodate ACA Eligibility Initiatives, HIE and HIX.
- Expand the data warehouse to accommodate Integrated Care Dual Eligibles Project.

10. Enhance the SURS process as a result of CHAMPS and BRIDGES

Tasks include:

- Develop new SURS extract process, which includes three parts:
 - Changes needed as a result of CHAMPS IDC-10 updates
 - Addition of Encounters to extract process
 - Replace quarterly extract with monthly extract.
- Enhance Audit programs as a result of CHAMPS changes including IDC-10 and Health Care Reform.

11. Load Pharmacy data directly to the data warehouse

Tasks include:

- Enhance the PBM data load process to include pharmacy paid claims enhancements. An example is the addition of data needed to further monitor and target outreach for purposes of increasing E-Prescribing in Michigan, and to collect information related to meaningful use.
- Load Pharmacy provider enrollment file from the State's PBM to the data warehouse.
- Rewrite NCPDP Encounter load programs to align with CHAMPS ICD-10 updates and PBM data.
- Rewrite the Medicaid Health Plan Point-of-Sale (POS) pharmacy carve-out claim utilization extract to pull data from the new CHAMPS structure. This weekly process creates a file containing pharmacy

carve-out claims for beneficiaries enrolled in each plan. The Medicaid Health Plans use the claim data for utilization and disease management programs.

12. Develop web-based Security application

Tasks include:

- Develop enhancements to the Data Warehouse Security form/process in the web-based security application.
- Develop the Security form/process for access to additional Medicaid applications, such as:
 - BRIDGES
 - SOLQ
 - Buy-In
 - MCIR (Immunization Registry)
 - Lead
 - Home Help
 - MIHP
 - CSHCS
 - Post-Payment Recovery System
 - Paternity/Casualty Recovery System
 - CMS 1915(c) Waiver web site.
 - Ambulatory Payment Classification (APC) web site (WebStrat)
 - Teradata Access for Applications
 - Master Person Index
 - Expand to other state agencies for access to their applications
 - Access to Waiver web applications
 - Developer Access to Teradata
 - Access to the Enterprise Fraud Application
- Integrate CHAMPS Customer Relationship Management (CRM subsystem) user information with DSA user database. This will provide MDCH with a complete picture of an individual's access across systems, via a single source application.
- Develop process to view an individual's approved/denied status across systems.
- Develop process to compare approved level of access in DSA with actual access in source system.
- Develop process to manage security of employee notifications from Human Resources (departures, position transfers, new hires) and/or integration with the Human Resource application. Actions include terminations of access, alerts to system owners, notifications to former and/or new managers, etc.
- Develop approval process for access to Medicaid data stored in the Cloud (Cloud Computing).

13. Enhance Data Warehouse Operability and Access

Analysis and development to optimize query and system performance will reduce data warehouse usage costs by improving efficiency and reducing storage space. Analysis of CHAMPS data warehouse usage will be performed to determine areas for improvement (e.g., rewrite queries, add statistics, and add/remove indexes to align with user access to data, compress databases). Solutions will then be identified, developed and implemented to address the identified areas for improvement.

Develop application to audit MDCH data warehouse usage. This application would provide web-based access to stored information such as identification of which users accessed which data and frequency of access.

Tasks include:

- Develop code to analyze databases and queries, identify potential areas for enhancement, develop and implement solutions.

- Develop web-based data warehouse audit application.
- Develop, test and implement solutions for encryption of data at rest and in flight.
- Test and implement enhancements to accommodate Teradata v14 upgrade

14. Develop Queries and Reports to support the Medicaid Program

The MDCH Data Warehouse is a critical component in the administration of the Medicaid Program. As such, it is frequently used as a source of information for audits, research, lawsuits, FOIA, and other similar requests for data. These requests typically require response within a short timeframe and require knowledge of both Medicaid and the data warehouse in order to provide required results within the defined timeframe.

Additionally, MDCH will be participating in the ARRA funded comparative effectiveness research (CER). As a participant of CER, MDCH will be providing data extracts related to specific proposals. MDCH will use the data warehouse to provide requested data.

Tasks include:

- Develop code to extract data as requested for CER.
- Develop code to extract data as needed for audits, research, lawsuits, FOIA, and other similar requests.
- Develop code to extract data for use in proof-of-concept of Prospective Payment editing and other similar requests.

15. Develop and Configure Unique Client Identifier (UCI) Replacement

MDCH developed the UCI using custom code in 2001. The UCI links person-level records from one database to another by evaluating the available data elements such as name, address, IDs – beneficiary, client, consumer – to determine if a match exists. When a match exists, a UCI is assigned that is used in all the databases. Once linked, they remain linked unless manually removed. Since 2001 when the UCI was first developed, there have been huge technology gains in master person technology. MDCH adopted a new COTS product that is an independent system, yet fully integrate with the data warehouse, which will drastically reduce the amount of custom development required, speed integrations of additional sources, and reduce the ongoing operating cost of the system.

To enable these recent advances including enhanced person matching algorithms and new standards for identity management (including the required standards for HIE), the following Tasks are required.

Tasks include:

- Install and configure new hardware and software.
- Upgrade software for version releases.
- Integrate the software with other existing systems.
- Develop a Provider Index within the COTS product.
- Expand Master Person Index to include new data sources, real-time access, query functionality, golden record identifiers, etc.
- Develop householding functionality within the COTS product.
- Establish governance processes relate to use of the COTS product.
- Develop new data warehouse functionality to correspond with updates to MPI/PI.
- Monitor algorithms and system configuration and make recommendations for performance improvement.

IT Classifications/Skills Set and Tasks:

The requirement is that the individual must possess the skills, knowledge, and experience required to perform the duties effectively and efficiently at the level specified in the work request.

1. Data Warehouse Project Manager

Data warehouse project manager manages the integration and/or development and delivery of very large and complex deliverables directly to the customer. This position provides the primary interface between the Contractor, the State and third party providers.

- Establishes and manages the project plan, according to SUITE standards, including the development schedule, resource requirements and integration efforts of third party products. Periodically reports progress to State management.
- Motivates and directs project team; sets goals, objectives and priorities; assigns and reviews work.
- Acts as the primary interface with the State on issues regarding the project deliverable. Makes sure customer reviews are held with the customer user community and obtains sign-off on status reports and requirements.
- Makes sure approved methods, processes and tools are consistently used.
- Is accountable for meeting project schedule and results as well as for the State customer satisfaction and quality of the deliverables.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the BI tools available to them to support their own data needs where possible.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.
- Assists the MDCH Agency Project Manager with documentation for managing the data warehouse such as presentations, reports and Advanced Planning Documentation (APD) to be submitted to CMS for funding.

Required Experience

- 5+ Years Project Manager or Team Lead Experience.
- 5+ Years Business Intelligence Experience.
- 3+ Years Teradata DW Experience.

2. Data Warehouse Architect

Data warehouse architect designs total solutions involving multiple systems for large organizations. Solutions may use third party hardware and software. Participates/leads in the construction of models and pilot programs with senior level managers.

- Conducts model and pilot programs to test proposals or develop solutions to problems. Develops measurement criteria to evaluate programs and projects and develops or reviews estimates on technical aspects of projects.
- Responsible for data warehouse database design and providing technical direction to modelers, data analysts, ETL developers, and database administrators.
- Develops design proposals to meet MDCH needs
- Approves integrated systems design proposals for technical content.
- Monitors the implementation for technical correctness so that MDCH needs are met.
- Identifies, analyzes and evaluates alternative design solutions.

Required Experience

- 6+ Years Data Warehouse Architect and Model Experience.
- Teradata Version 12 or 13 Experience.
- Teradata Utilities Experience.

- 2+ Years Data Warehouse Administrator Experience.

3. Data Warehouse Database Administrator

Database administrator (DBA) is responsible for the availability, safety and usefulness of the MDCH data warehouse databases.

- Software Installation and database management system upgrades.
- Software upgrades to ensure the database is in compliance with critical security patches, or, software upgrades deemed necessary by the State.
- Working in conjunction with system administrators, server configuration to ensure that the entire database system is capable of providing the services needed.
- Performance monitoring to identify bottlenecks and places where throughput can be improved.
- Security administration to ensure that the database cannot be accessed by unauthorized parties or damaged by anyone.
- Configure access to the data warehouse and communication between the warehouse and other servers.
- Physical database design translates the logical database design to work optimally for the specific database environment.
- Working with MDCH data warehouse developers to establish standards and guidelines for access to MDCH data warehouse databases.
- Backup and Restore management to ensure that no data is lost and those backups can be restored in a timely manner.
- Work with MDCH data warehouse developers and MDCH clients to optimize their queries.

Required Experience

- 4+ Teradata Database Administrator Experience.
- 2+ Teradata Version 12 or 13 Experience.
- Teradata Utilities Experience.
- Teradata Manager Experience.
- SQL Assistant Experience.
- Linux Experience.
- Oracle (9i, 10g, 11g) Experience.

4. Data Warehouse Developer Senior

Data warehouse developers perform application development tasks in support of building business intelligence applications and integrating data warehouse resources into other MDCH applications. In addition they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.
- Work with developers and end user query developers to design and improve database queries.
- Train developers in how best to design queries for a specific database.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.

Required Experience

- 6+ Years SQL Development Experience.
- Business Analyst Experience.
- SQL and Performance Tuning Experience.
- Teradata Utilities Experience

- SQL Assistant Experience.
- Linux Scripting Experience.

5. Data Warehouse Developer Junior

Data warehouse developers perform application development tasks in support of building business Intelligence applications and integrating data warehouse resources into other MDCH applications. In addition they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.
- Work with developers and end user query developers to design and improve database queries.
- Train developers in how best to design queries for a specific database.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.

Required Experience

- 2+ Years SQL Development Experience.
- Teradata Utilities Experience.
- SQL Assistant Experience.

6. Data Warehouse Designer/Modeler

Data warehouse designer is responsible for the layout and navigability of a database. This involves defining the tables, keys and relationships that will allow an application to retrieve and update data correctly and efficiently.

- Working with end users and developers to understand the data needs of MDCH clients.
- Documenting the MDCH data warehouse data involves including definitions, constraints and access needs.
- Creating and maintaining MDCH data warehouse logical designs, including Entity Relationship diagrams, which illustrate what data will be stored, how it is organized, how it can be retrieved (keys) and how it relates to other data in the database.
- Creating and maintaining MDCH data warehouse data definition language (DDL) that can be used to create and update the database.
- Working with the MDCH Data Warehouse DBA and ETL developers, modify the logical design to create a physical design most suited to the database environment and the applications that will use it.
- Work with MDCH Data Warehouse ETL developers and DBA to create and maintain database design standards.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their report development related tasks may include:
- Perform application development tasks in support of building business intelligence applications and integrating data warehouse resources into other Agency applications. Their development related activities may include tasks such as:
- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.
- Work with developers and end user query developers to design and improve database queries.
- Train developers in how best to design queries for a specific database.

Required Experience

- 5+ Years Data Warehouse Modeling Experience.
- 5+ Years of SQL Development.
- Data Warehouse Architect Experience.

7. Data Warehouse Business Intelligence Report Developer

Data warehouse Business Intelligence Report Developer is expected to be able to work with agency requestors to define and develop new reports, and provide training and technical support to both DTMB developers and end user query developers.

- Working with end user requestors to understand their data needs and create and implement solutions to those needs.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the BI tools available to them to support their own data needs where possible.
- Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the data warehouse.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 5+ Years of Business Objects Report Development Experience.
- 5+ Years of SQL Development.
- Business Analyst Experience.

8. Data Warehouse Business Intelligence Analyst Senior

Data warehouse business intelligence/analyst works with end users to provide information in a number of different ways.

- Running JAD sessions to understand what data is needed and how it is likely to be used.
- Creating ad-hoc queries to answer specific user questions.
- Program design and specification.
- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Supporting end user to enable them to create their own queries and reports as needed.
- Identify data problems and work with developers to correct them.
- Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
- Organize and run user groups to encourage self-support among end user and DTMB query and other BI application developers.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
- Working with end user requestors to understand their data needs and create and implement solutions to those needs.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the BI tools available to them to support their own data needs where possible.
- Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the data warehouse.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 6+ Years Project Lead/BI Analyst Experience.
- 4+ Years Business Objects Report Development.

- Training Experience.
- SQL Assistant Experience.
- Medicaid experience desired.

9. Data Warehouse Business Intelligence Analyst Junior

Data warehouse business intelligence/analyst works with end users to provide information in a number of different ways.

- Running JAD sessions to understand what data is needed and how it is likely to be used.
- Creating ad-hoc queries to answer specific user questions.
- Program design and specification.
- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Supporting end user to enable them to create their own queries and reports as needed.
- Identify data problems and work with developers to correct them.
- Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
- Organize and run user groups to encourage self-support among end user and DTMB query and other BI application developers.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
- Working with end user requestors to understand their data needs and create and implement solutions to those needs.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the BI tools available to them to support their own data needs where possible.
- Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the data warehouse.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 2+ Years Project Lead/BI Analyst Experience.
- Medicaid experience desired.

10. Data Warehouse Help Desk Analyst

Help desk staff provide first line support for end users and developers.

- Manages MDCH Data Warehouse mailbox.
 - Assesses user identified issues and provides guidance for resolution.
 - Directs unresolved problems and reports to appropriate staff, if necessary.
 - Tracks and analyzes problem occurrences and resolutions.
- Conducts data warehouse user group training.
- Develops training materials.
- Assists with query/report development.
- Provides user assistance with BI Services tool(s), model/database, business knowledge and recommendations for efficiency and solutions to meet user business needs.

Required Experience

- 3+ Years of Data Warehouse Help Desk Analyst Experience.
- Experience in supporting the end users in accessing the data warehouse and effectively utilize the desktop tools.

11. Web Developer

A Web Developer is responsible for designing and developing web-based applications that interact with and utilize the data warehouse to provide MDCH users with highly interactive, easy to use web-based BI applications.

- Defining and developing applications that rely on unique web-based technology and tools, and that will conform to standards defined by DTMB for user interface and usage of the data warehouse.
- Defining the web application user interface, business rules, database access and data warehouse access, and determining any data sources that need to be imported into the data warehouse for web application operation.
- Producing technical specification documents to review the web application with the user, and conducting JAD sessions to revise and finalize technical specifications.
- Prototyping of web application pages for user review and approval.
- Producing accurate and complete data mapping documents
- Performing user acceptance testing with users and DTMB to confirm that new web applications perform per specifications, and making adjustments to the web application as required
- Maintaining a development and staging environment for the development and testing of enhancements and updates to the web application.

Required Experience

- 5+ Years of Data Warehouse Web Developer Experience.
- Web development: HTML, JavaScript, Asp.net, Visual Studio.

12. Subject Matter Expert (SME)

A Subject Matter Expert (SME) will be responsible for providing specialized, in-depth knowledge of a business area(s) such as Medicaid, Master Person Index/Provider Index, Pharmacy, ICD-10, HEDIS and technology solutions.

- Leading or actively participating in work-groups with the need for specialized knowledge.
- Providing guidance on how their area of expertise can resolve an organizational need, and actively participates in all phases of a project/initiative by sharing their knowledge, expertise and ideas.
- Defining technology and business solutions based on thorough understanding of business processes and policies.
- Reviewing, helping re-engineer, or creating new processes and policies,
- Evaluating and defining technology requirements and solutions.
- Defining business needs, and identifying and recommending the most appropriate solutions.
- Providing documentation such as forms, manuals, correspondence, and procedures
- Understanding, articulating, and implementing best practices related to their area of expertise.

Required Experience

- 5+ Years of Data Warehouse design and development of BI applications.
- Experience in recommending appropriate tools and technology required to meet immediate and long-term business and individual self-service reporting needs.

DELIVERABLES:

The deliverables and tasks agreed to in the resulting Contract shall comply with the following approval process:

APPROVAL OF DELIVERABLES, IN GENERAL:

(a) All Deliverables (Physical Deliverables, Written Deliverables, and Service Deliverables) require formal written approval by the State, in accordance with the following procedures. Formal approval by the State requires that the Deliverable be confirmed in writing by the State to meet its specifications, which will include the successful completion of Testing, to be led by the State with the support and assistance of Contractor. The parties acknowledge that the approval process set forth herein will be facilitated by ongoing consultation between the parties, visibility of interim and intermediate Deliverables and collaboration on key decisions.

(b) The State's obligation to comply with any State Review Period is conditioned on the timely delivery of Deliverables being reviewed.

(c) Prior to commencement of its review or testing of a Deliverable, the State may inspect the Deliverable to confirm that all components of the Deliverable have been delivered without material deficiencies. If the State determines that the Deliverable has material deficiencies, the State may refuse delivery of the Deliverable without performing any further inspection or testing of the Deliverable. Otherwise, the review period will be deemed to have started on the day the State and Contractor receive the Deliverable and agree that the Deliverable is ready for use and, where applicable, Contractor has provided certification to that effect.

(d) The State will approve in writing a Deliverable upon confirming that it conforms to and, performs in accordance with, its specifications without material deficiency. The State may, but shall not be required to, conditionally approve in writing a Deliverable that contains material deficiencies if the State elects to permit Contractor to rectify them post-approval. In any case, Contractor will be responsible for working diligently to correct within a reasonable time at Contractor's expense all deficiencies in the Deliverable that remain outstanding at the time of State approval.

(e) If, after three (3) opportunities (the original and two repeat efforts), Contractor is unable to correct all deficiencies preventing Final Acceptance of a Deliverable, the State may: (i) demand that Contractor cure the failure and give Contractor additional time to cure the failure at the sole expense of Contractor; or (ii) keep any resulting Contract(s) in force and do, either itself or through other parties, whatever Contractor has failed to do, in which event Contractor shall bear any excess expenditure incurred by the State in so doing beyond the Contract(s) price for such Deliverable and will pay the State an additional sum equal to ten percent (10%) of such excess expenditure to cover the State's general expenses provided the State can furnish proof of such general expenses; or (iii) terminate the particular Statement of Work for default, either in whole or in part by notice to Contractor provided Contractor is unable to cure such breach. Notwithstanding the foregoing, the State shall not use, as a basis for exercising its termination rights under this Section, deficiencies discovered in a repeat State Review Period that could reasonably have been discovered during a prior State Review Period.

(f) The State, at any time and in its reasonable discretion, may halt the testing or approval process if such process reveals deficiencies in or problems with a Deliverable in a sufficient quantity or of a sufficient severity as to make the continuation of such process unproductive or unworkable. In such case, the State may return the applicable Deliverable to Contractor for correction and re-delivery prior to resuming the testing or approval process.

PROCESS FOR APPROVAL WRITTEN DELIVERABLES:

The State Review Period for Written Deliverables will be the number of days set forth in the applicable Statement of Work/Purchase Order following delivery of the final version of the Deliverable (failing which the State Review Period, by default, shall be five (5) Business Days for Written Deliverables of one hundred (100) pages or less and ten (10) Business Days for Written Deliverables of more than one hundred (100) pages). The duration of the State Review Periods will be doubled if the State has not had an opportunity to review an interim draft of the Written Deliverable prior to its submission to the State. The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within five (5) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF SERVICE DELIVERABLES:

The State Review Period for approval of Service Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) Business Days for a Service Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made

to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF PHYSICAL DELIVERABLES:

The State Review Period for approval of Physical Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) continuous Business Days for a Physical Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

ACCEPTANCE CRITERIA:

PROJECT CONTROL AND REPORTS:

A monthly progress report must be submitted to DCH and DTMB Project Managers throughout the life of this project. The report may be submitted with the billing invoice. Each monthly progress report must contain the following information:

- **Hours:** Indicate the number of hours expended during the past month, and the cumulative total to date for the project.
- **Tasks accomplished:** Indicate what projects have been worked on, and what was completed during the current reporting period.

SPECIFIC AGENCY STANDARDS:

Agency standards, if any, in addition to DTMB standards.

PAYMENT SCHEDULE:

Payment will be made on a time and materials basis (hourly based). The State will pay Contractor upon receipt of properly completed invoices which shall be submitted to the billing address on the State issued purchase order not more often than monthly. The State's Accounts Payable area will coordinate obtaining Agency Project Manager and The State Project Manager approvals. All invoices should reflect the purchase order, actual work completed by payment date, and must be approved by the Agency Project Manager and DTMB Project Manager prior to payment. The invoices shall describe and document to the State's satisfaction a description of the work performed the progress of the project, and fees

Payment shall be considered timely if made by the State within forty-five (45) days after receipt of properly completed invoices.

EXPENSES:

The State will NOT pay for any travel expenses, including hotel, mileage, meals, parking, etc.

PRICING SUMMARY

Pricing for the two (2) year term is set forth in Table 1 below:

ADDITIONAL TIME & MATERIALS LABOR RATES FOR PROFESSIONAL SERVICES:

To the extent the parties agree that certain specific services must be provided on a time and materials basis, such services must be provided at the Labor Rates (Not to Exceed Hourly Rate cost column) in Table 2 below. Future amendments to this Work Request may utilize this rate structure, as agreed between the Contractor and State. Additionally the Contractor may utilize the rates in order to provide the State with a not to exceed time and materials price. Prices quoted herein will be used for change, addition, and / or deletion of work associated with this Work Request. The Estimated Hours is provided below as an estimate only and is not meant to preclude or limit the State from requesting a resource/staffing mix for future projects that exceeds the hours estimate for a specific Staffing Category as long as the Total Additional Professional Services Cost is not exceeded.

The MDCH Project Manager is:

Cynthia Green-Edwards
Director, Office of Medicaid Health Information Technology
Michigan Department of Community Health (MDCH)
500 Pine Street, Capitol Commons Center
Lansing, Michigan 48933
517-241-9998
EDWARDSC@michigan.gov

The DTMB Project Manager is:

Andrey Verevko
Director, Client Service Division
Michigan Department of Technology Management and Budget (DTMB)
Agency Services – Department of Community Health (DCH)
300 East Michigan Avenue, Chandler Building
Lansing, MI
517-241-1360
VerevkoA@michigan.gov

The DTMB Contract Administrator for this project is:

Whitnie Zuker
Michigan Department of Technology, Management and Budget
DTMB Procurement - Stevens T. Mason Building – 2nd Floor
530 W. Allegan Street
Lansing, MI 48933
517-335-5306
Fax: 517-335-0046
Email: zukerw@michigan.gov

AGENCY RESPONSIBILITIES:

- The State may discontinue the services of any Vendor - supplied staff with two weeks' notice without cause at any time.
- The State will provide access to networks, servers, software license (as appropriate), etc. needed for Vendor to perform tasks required for this Work Request.

LOCATION OF WHERE THE WORK IS TO BE PERFORMED:

The work is to be performed, completed, and managed at locations determined by the Vendor, but with the expectation that personnel will be available, on hand and able to complete emergency tasks. In addition, onsite

support may be needed and will be identified at such time.

EXPECTED CONTRACTOR WORK HOURS AND CONDITIONS:

Contractor(s) must provide services during normal working hours (Monday through Friday, 7:00 a.m. to 6:00 p.m. ET.) and possible night and weekend hours depending on position and project requirements. 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. Contractor(s) shall observe the same standard holidays as State employees. The State does not compensate for holiday pay. Contractor(s) will not be reimbursed for travel expenses or travel time. No overtime will be permitted.

RIGHT TO OWNERSHIP:

State intends to own the Software at the end of the Contract

- Ownership of Work Product by State. All Deliverables shall be owned by the State and shall be considered works made for hire by the Contractor for the State. The State shall own all United States and international copyrights, trademarks, patents or other proprietary rights in the Deliverables.
- Vesting of Rights. The Contractor agrees to assign, and upon creation of each Deliverable automatically assigns, to the State, ownership of all United States and international copyrights, trademarks, patents, or other proprietary rights in each and every Deliverable, whether or not registered by the Contractor, insofar as any such Deliverable, by operation of law, may not be considered work made for hire by the Contractor for the State. From time to time upon State's request, the Contractor and/or its personnel shall confirm such assignment by execution and delivery of such assignments, confirmations of assignment, or other written instruments as the State may request. The State shall have the right to obtain and hold in its own name all copyright, trademark, and patent registrations and other evidence of rights that may be available for Deliverables.
- STATE MUST RECEIVE FAIR MARKET VALUE FOR THE LICENSE – (This must be reviewed and negotiated by the DTMB Procurement Buyer)

TABLE 1

Resource Name	Position	Calendar Year					
		2014 Hourly Rate	2014 Est Max Hours	2014 Estimate Dollars	2015 Hourly Rate	2015 Est Max Hours	2015 Estimate Dollars
Jeanne Barnstead	Data Warehouse Project Manager	\$ 148.00	1,984	\$ 293,632	\$ 155.00	1,984	\$ 307,520
Tim Carey	Data Warehouse Project Manager	\$ 148.00	1,984	\$ 293,632	\$ 155.00	1,984	\$ 307,520
Amy George	Data Warehouse Project Manager	\$ 148.00	1,984	\$ 293,632	\$ 155.00	1,984	\$ 307,520
Jeremy Christiansen	Data Warehouse Architect	\$ 144.00	1,984	\$ 285,696	\$ 151.00	1,984	\$ 299,584
John Schuster	Data Warehouse Architect	\$ 144.00	1,984	\$ 285,696	\$ 151.00	1,984	\$ 299,584
Tom Rothan	Data Warehouse Designer/Modeler	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Siva Pedinekaluva	Data Warehouse Database Administrator	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Pradip Bhogal	Data Warehouse Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Ravi Chitibomma	Data Warehouse Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Daniel Homer	Data Warehouse Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
James McEvoy	Data Warehouse Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Laura Olson	Data Warehouse Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Mohammad Sabir	Data Warehouse Developer Senior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Junior BA TBD	Data Warehouse Developer Junior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Geoffrey Williams	Data Warehouse Developer Junior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Monty Bieber	Data Warehouse BI Analyst Senior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Dana Jacob	Data Warehouse BI Analyst Senior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Mary Jo Maki	Data Warehouse BI Analyst Senior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Beth Friar	Data Warehouse BI Analyst Senior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Deb Coburn	Data Warehouse BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Nathan De Winkle	Data Warehouse BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Russel Neuman	Data Warehouse BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
John Snyder	Data Warehouse BI Analyst Junior	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Kathy Boak	Data Warehouse Help Desk Analyst	\$ 140.00	1,984	\$ 277,760	\$ 147.00	1,984	\$ 291,648
Deepak Damegunta	Data Warehouse Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Anush Pederia	Data Warehouse Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Kunal Shah	Data Warehouse Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Arun Varde	Data Warehouse Web Developer Senior	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Ami Shah	Data Warehouse Web Developer Junior	\$ 85.00	1,984	\$ 168,640	\$ 89.00	1,984	\$ 176,576
Vishal Tanneeru	Data Warehouse BI Report Developer Ser	\$ 120.00	1,984	\$ 238,080	\$ 120.00	1,984	\$ 238,080
Chris Blas	Subject Matter Expert MPI	\$ 272.00	992	\$ 269,824	\$ 285.00	992	\$ 282,720
Casey Foth	Subject Matter Expert MPI	\$ 272.00	496	\$ 134,912	\$ 285.00	496	\$ 141,360
Raja Krishnamoorthy	Subject Matter Expert MPI	\$ 272.00	496	\$ 134,912	\$ 285.00	496	\$ 141,360
Jeff Tate	Subject Matter Expert Champs	\$ 183.00	1,984	\$ 363,072	\$ 192.00	1,984	\$ 380,928
Totals by Year			63,488	8,991,488		63,488	9,376,384
FTE Total by Year			32.0			32.0	
Totals Hours			126,976				
Totals Dollars		\$	18,367,872				

TABLE 2

Staffing Category	Calendar Years					
	2014 Not to Exceed Hourly Rate	2014 Est. Hours	2014 Total Estimated Price	2015 Not to Exceed Hourly Rate	2015 Est. Hours	2015 Total Estimated Price
Data Warehouse Project Manager	\$148.00	1,984	\$293,632	\$155.00	1,984	\$307,520
Data Warehouse Architect	\$144.00	1,984	\$285,696	\$151.00	1,984	\$299,584
Data Warehouse Database Administrator	\$140.00	1,984	\$277,760	\$147.00	1,984	\$291,648
Data Warehouse Developer Junior/Senior	\$140.00	1,984	\$277,760	\$147.00	1,984	\$291,648
Data Warehouse Designer/Modeler	\$140.00	1,984	\$277,760	\$147.00	1,984	\$291,648
Data Warehouse BI Report Developer	\$120.00	1,984	\$238,080	\$120.00	1,984	\$238,080
Data Warehouse BI Analyst Junior/Senior	\$140.00	1,984	\$277,760	\$147.00	1,984	\$291,648
Data Warehouse Help Desk Analyst	\$140.00	1,984	\$277,760	\$147.00	1,984	\$291,648
Data Warehouse Web Developer Junior/Senior	\$120.00	1,984	\$238,080	\$120.00	1,984	\$238,080
Data Warehouse Subject Matter Expert	\$272.00	1,984	\$539,648	\$285.00	1,984	\$565,440
Total Additional Prof. Services Hours and Cost by Year:		19,840	\$2,983,936		19,840	\$3,106,944
Total Additional Professional Services Cost:	\$6,090,880					

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

November 26, 2013

CHANGE NOTICE NO. 24
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Whitnie Zuker	517-335-5306	zuckerw@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card	<input type="checkbox"/> Direct Voucher (DV)	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		December 20, 2015
VALUE/COST OF CHANGE NOTICE:		ESTIMATED REVISED AGGREGATE CONTRACT VALUE:		
\$275,600.00		\$24,685,998.00		

Effective Immediately, the following ongoing services are continued based on:

The State's Work Request ITB-JK-DW-0003 and the related Vendor extension letter dated November 1, 2013 for Named Resource Kiran Vootkuri at a rate of \$135.00/hr not to exceed 1,040 hours for One (1) Data Warehouse Senior Developer.

The State's Work Request ITB-JK-DW-0004 and the related Vendor extension letter also dated November 1, 2013 for Named Resource Dheeraj Kumar at a rate of \$130.00/hr not to exceed 1,040 hours for One (1) Data Warehouse Senior Developer.

This contract is also hereby INCREASED by \$275,600.00. Please note that the buyer has been changed to Whitnie Zuker. All other terms, conditions, specifications and pricing remain unchanged. Per vendor and agency agreement and the approval of DTMB

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

October 3, 2013

CHANGE NOTICE NO. 23
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Joe Kelly	517-373-3993	Kellyj11@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MIDEAL PARTICIPANTS
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		December 20, 2015
VALUE/COST OF CHANGE NOTICE:			ESTIMATED REVISED AGGREGATE CONTRACT VALUE:	
\$165,000.00			\$24,410,398.00	

Effective Immediately, the following resources are incorporated into this contract, based on the State's work requests ITB 0071141113B0000506:

Named Resource: Ravi Sivarajan at a rate of \$165.00/hr not to exceed 1000 hours

State's Work Request: #ITB 0071141113B0000506 for One (1) Data Warehouse Architect.

Vendor's Work Request Response: Dated September 9, 2013 to work request ITB 0071141113B0000506.

This contract is also hereby INCREASED by \$165,000.00. All other terms, conditions, specifications and pricing remain the same. Per vendor and agency agreement and the approval of DTMB Procurement.

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

August 30, 2013

CHANGE NOTICE NO. 22
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Joe Kelly	517-373-3993	Kellyj11@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card	<input type="checkbox"/> Direct Voucher (DV)	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:						
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		December 20, 2015		
VALUE/COST OF CHANGE NOTICE:			ESTIMATED REVISED AGGREGATE CONTRACT VALUE:			
\$250,000.00			\$24,245,398.00			
Effective Immediately, this Contract is hereby INCREASED by \$250,000.00 per State's work requests ITB-JK-DW-00001.						
All other terms, conditions, specifications and pricing remain the same.						
Per vendor and agency agreement and the approval of DTMB Procurement.						

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

August 30, 2013

CHANGE NOTICE NO. 21
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Joe Kelly	517-373-3993	Kellyj11@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MIDEAL PARTICIPANTS
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		December 20, 2015
VALUE/COST OF CHANGE NOTICE:			ESTIMATED AGGREGATE CONTRACT VALUE REMAINS:	
\$0.00			\$23,995,398.00	

Effective Immediately, The State's work requests ITB-TH-0014 has been extended to 12/31/13 and incorporates the Statement of Work below.

All other terms, conditions, specifications and pricing remain the same.

Per vendor and agency agreement and the approval of DTMB Procurement.



**MICHIGAN DEPARTMENT OF TECHNOLOGY,
MANAGEMENT AND BUDGET
IT SERVICES
for
DATA WAREHOUSE (DW) AND BUSINESS INTELLIGENCE (BI)
SECOND REVISED STATEMENT OF WORK**

The data warehouse is maintained and hosted by DTMB and currently supports multiple agencies, including the Michigan Department of Community Health (DCH), the Michigan Department of Human Services (DHS), the Michigan Department of Treasury (Treasury), the Michigan Department of Energy, Labor and Economic Growth (DELEG) and the State Courts Administrative Office (SCAO). Additional agencies may be supported in the future. The State of Michigan wishes to continue to host and administer any replacement systems with existing State staff in existing State facilities.

BI services will be provided in a three-tier fashion. The primary support for an agency's BI needs will come from its associated DTMB Agency Services team. Where this is not possible, due either to lack of skills or resource shortages, the Center for Shared Solutions and Technology Partnerships (CSSTP) will provide the needed support. However, the State's need is such that these two groups cannot serve all of its BI needs. In that case, CSSTP will Contract with a pre-qualified BI service Contractor to provide appropriate support. That support may come in the form of staff augmentation where Contractor staff works side by side with DTMB staff under the direction of a DTMB supervisor. It may also be provided as a staff augmentation to an existing CSSTP team. DTMB may choose to Contract with the pre-qualified BI service Contractor through CSSTP to develop a BI application or system with DTMB and Agency oversight for delivery to the State. In that case the BI Contractor must be able to provide knowledge transfer to State staff sufficient to maintain and extend the application.

A Pre-Qualification Program was developed to provide a mechanism for staff augmentation and project development support of the data warehouse and related application development.

This Second Revised Statement of Work ("Second Revised SOW") is issued under the terms of the Contract 071B1300138 between Optum Government Solutions, Inc. ("Optum" or "Contractor" or "Vendor") and the Michigan Department of Technology, Management and Budget, Procurement, as established under the Data Warehouse and Business Intelligence Program (the '138 Contract') and more specifically under Work Request ITB-TH-00014 for the MDCH Project ("Work Request 14"), and the Optum Technical Proposal and Optum Price Proposal dated December 19, 2011, as amended by subsequent letter amendments and a first Revised SOW through August 26, 2013 (the "Optum Proposals"), where the '138 Contract, as amended by Work Request 14 and the Optum Proposals are collectively referred to as the "DTMB Contract").

Project Title: Michigan Department of Community Health Data Warehouse AOC	Period of Coverage: 08/27/2013 – 12/31/2013
Requesting Agency: Michigan Department of Community Health (MDCH)	Date: 8/08/13
Agency Project Manager: Cynthia Edwards	Phone: 517-241-9998
DTMB Project Manager: Carmen Redwine	Phone: 517-241-2925
DTMB Contract Administrator: Joseph Kelly	Phone: 517-373-3993

Brief Description of Services to be provided:

The State elects to extend PO 084N2201934 issued under the DTMB Contract for slightly longer than four (4) months so that it ends on 12/31/13. An Advice of Change (AOC) to PO 084N2201934 is required for support of the new end date of 12/31/2013 which will allow ongoing technical support for project(s) of various sizes for the MDCH Data Warehouse that are described in more detail in this Second Revised SOW. PO new service dates: 8/27/13-12/31/13

BACKGROUND:

MDCH has been using the data warehouse since 1994 to direct policy, detect fraud, identify potentially valuable new initiatives, reduce error rates, calculate rates and more.

MDCH utilizes the data warehouse for multiple purposes including mission critical functions. It functions as the department's decision support system. MDCH uses data from the warehouse for rate setting for hospitals and managed and long term care providers. It is used to manage the performance of its partners (managed care providers and others) as well as programs within MDCH. The Department has an extensive analytics effort to ensure that funds are being spent most effectively, including detecting and prosecuting fraud, and assure that Medicaid beneficiaries are getting the best care possible. In support of departmental management, the data warehouse is used to analyze trends, report on all aspects of Medicaid, and provide critical support to the budgeting process. Beyond this, the data warehouse provides significant analytical support for epidemiology and other studies.

MDCH will be adapting and expanding its use of the data warehouse as it completes the implementation of ongoing work in its Medicaid Management Information System (MMIS), known as CHAMPS (Community Health Automated Medicaid Processing System). CHAMPS efforts underway include federally mandated projects such as HIPAA 5010 and D.O processing, ICD-10 and Health Reform. In addition, MDCH will be adding new data sources and increasing their collaboration with other agencies along with adding new analytical tools. The Department expects to utilize the data warehouse for Health Information Technology/Health Information Exchange initiatives, as well as for the state's Health Insurance Exchange. The Medicaid Electronic Health Record (EHR) Incentive Payment Program and Michigan Health Information Network are American Recovery and Reinvestment Act of 2009 (ARRA) initiatives to improve health care quality, cost, efficiency, and patient safety through electronic exchange of health information. An important requirement of these ARRA initiatives requires the use of clinical data to improve patient care outcomes which will involve significant research efforts using de-identified data. It is anticipated that much of the data will be stored in the data warehouse. To store and use of this ARRA initiative data will require significantly increased data warehouse capabilities.

MDCH has relied on contractor staff to provide data warehouse support and business intelligence services. These services include: providing data warehouse Extract, Transform and Load (ETL) services, application development, web development, business intelligence model, reporting, query development, help desk support, training and data analysis.

The State of Michigan Department of Community Health (MDCH), with assistance of the Michigan Department of Technology, Management & Budget (DTMB), awarded to Optum through the DTMB Contract, under Purchase Order (PO) 084N2201934 to obtain initially, twenty seven (27) FTE positions to support, maintain and execute enhancement projects of various sizes for the MDCH Data Warehouse for one (1) year. As expected, during the current term of the Work Request 14, and through various State Requests and Optum Proposals, the makeup of Optum staffing has changed to meet the State's needs. The current staffing, position descriptions, associated rates, and estimated maximum hours by position is detailed in the PRICING SUMMARY below, where, for purposes of this SOW, the positions detailed are desired for continuation for an additional slightly longer than four (4) month period from August 27, 2013 through December 31, 2013.

The total number of individuals continues to be permissible to be increased or decreased throughout the life of this PO, based on department needs, available department funding, and mutual agreement of the parties.

PROJECT OBJECTIVE:

The objective of AOC to PO 084N2201934 is for Optum through the DTMB Contract, to assist MDCH with the development, support, maintenance and enhancement of MDCH Data Warehouse applications, which is an on-going activity triggered by changes in federal and state regulations, evolving business needs, opportunities for improving business processes, continued software and hardware upgrades, and break fixes.

SCOPE OF WORK:

- The scope of this Second Revised SOW is to provide Data Warehouse Business Intelligence (BI) Services on an as needed basis to support maintain and execute enhancement projects of various sizes for the MDCH Data Warehouse set forth in this Second Revised SOW.
- Develop and maintain Data Warehouse applications that support MDCH's day-to-day will business operations.
- Resources will become familiar with DTMB personnel, MDCH's business processes, and DTMB's State Unified Information Technology Environment (SUITE) and MDCH Management policies and procedures.

TASKS:

REQUIRED TASKS

- Optum must attend orientation, security awareness training and any other relevant security and or confidentiality training requested by MDCH and/or DTMB. Optum staff must sign any appropriate agreements or training certifications.

EXAMPLES OF ONGOING and UPCOMING CONTRACTOR TASKS

(these tasks may change based on direction from the State)

Run production reporting on the data warehouse

Tasks include:

- Complete development of production reports to use the new CHAMPS data warehouse model. This includes reports needed for certification of CHAMPS, the Medicaid Statistical Information System (MSIS) extracts, and other production reports used to manage and evaluate Medicaid programs. Users of these reports include but are not limited to MDCH Medicaid management and staff, the State legislature, Federal agencies, counties and providers. Tasks include:
 - Map existing report data elements to corresponding fields in the new CHAMPS data warehouse.
 - Conduct Joint Application Design (JAD) sessions to finalize requirements with MDCH users.
 - Develop, test, and implement the CHAMPS version of the reports, including:
 - Michigan Assistance and Referral Service (MARS) reports
 - Centers for Medicare & Medicaid Services (CMS)-372s for Children's Waiver, Elderly and Disabled Waiver, and Habilitation Supports Waiver
 - MSIS
 - MA CAP reports. This report packet provides in-depth analysis of the capitation population, and revenues paid out through the capitation system for: Mental Health, Substance Abuse, and the Habilitation Supports Waiver. The report packet is used for Legislative reporting, Federal reporting, and to monitor expenditures by Providing Agency.
 - CMS-416 report and Early and Periodic Screening, diagnostic, and Treatment (EPSDT) letters
- Rewrite production reports to align with HIPAA 5010 and ICD-10 changes.
- Provide input as a pilot state for MSIS Plus. Work with CMS Developers to refine MSIS Plus requirements, record layouts and data definitions. Develop extract processes to align with defined MSIS Plus requirements, create internal system documentation, test files internally and with CMS, and implement approved processes.
- Provide training and support to Department of Technology, Management and Budget (DTMB) staff to facilitate report development and maintenance.
- Provide on-site expertise to incorporate newly-developed processes into the Business Objects environment, coordinate activities with the Consolidated Print Center, and integrate tools used to

support data warehouse reporting.

Provide updated analytic, reporting, data mining, and web-based analytic tools to enhance the analytic capability of the staff

MDCH vision continues to include the use of ad-hoc analytic, On Line Analytical Processing (OLAP) and data mining tools. The OLAP and data mining tools are needed to examine our data from multiple perspectives, which will allow identification of emerging trends and cost savings. This allows the ability to answer complex questions by performing multidimensional analysis across data sets and programs; and to drill up and down through successive layers of detail to uncover trends, relationships, and patterns for improved decision making.

Tasks include:

- Upgrade BI Query Version 9.0.2 to the latest patch release.
- Upgrade from Business Objects XI release 1 (no longer supported) to Business Objects XI release 3.

Identify and load additional data sets on the data warehouse

As new systems and data sources are developed that support the administration of the Medicaid program, and expansions are made to existing source systems, they will be loaded to the data warehouse to be integrated with existing MDCH data. This data could be Medicaid-specific, or could be non-Medicaid but provides a longitudinal view of beneficiaries and populations that could effect changes in Medicaid policy.

The process to add these data sets includes: defining requirements/which data tables/fields to include; determining whether or not to maintain history; developing load programs (using state standard Extract, Transform, Load (ETL) tool where possible); integrating new data with existing data in the BI Query model; and training MDCH users.

Tasks include:

- Add Maternal and Infant Health Program (MIHP) Infant Screener data plus additional data elements from new development to the Maternal Screener, in order to enhance MDCH's ability to evaluate the program, evaluate effectiveness of interventions, and assess outcomes.
- Add Children's Waiver data from multiple sources (including Paradox database that is no longer supported) for purposes of enrollment and CMS-372 reporting.
- Add Michigan Department of Human Services (MDHS) data needed for Medicaid reporting required by CMS, and/or establish MDCH access to the MDHS data through a data warehouse View (e.g., Poverty/Income, Race/Ethnicity).
- Add Home Help data.
 - New data is needed as a result of the new source application being developed to track payments. The Home Help payments were administered by MDHS until January, 2010. The new source application is being developed by MDCH to track the payments, and the corresponding data is needed in the warehouse to be included in the MSIS extracts.
 - New detailed assessment data. This data is maintained in an MDHS source system and is needed by MDCH in the data warehouse in order to perform analysis using the assessment data (e.g., predict impact of policy issues and changes, track beneficiaries, track Medicaid expenditures and ultimately, calculate rates).
- Add Medicare Modernization Act (MMA) Territory Batch Query (TBQ) data and develop processes for submission and receipt of corresponding data to/from CMS.
- Add Buy-In source data for comparison to Medicare identified on the eligibility records. This will be used to ensure completeness of the MMA submissions.
- Add Hospital and Long Term Care Cost Report data that currently resides in a system managed by Hewlett Packard (HP).

- Add MSIS submission file tables and corresponding data to the data warehouse for use in maintaining MSIS history, analysis and resubmission to CMS as necessary.
- Add Michigan Disease Surveillance System (MDSS) data. MDSS enables physicians and clinical laboratories to electronically report the occurrence or suspected occurrence of disease, conditions or infection required by the Michigan Communicable Disease Reporting Rule. Case reporting and management depends on the integration of data from multiple sources (e.g., laboratory results; patient information; disease condition, onset, symptoms, and hospitalization dates; and medication, treatment and clinical history). MDCH has an opportunity to improve disease tracking and monitoring of Medicaid beneficiaries through the integration of MDSS and the MDCH Data Warehouse.
- Add Newborn Screening data. This data was previously loaded to the data warehouse, but source system has been re-written, and corresponding data warehouse load processes are needed to capture data from the new system.
- Add Third Party Recovery data. Existing Medicaid payment recovery systems pull data from the warehouse for purposes of determining amounts to be recovered, but actual amounts recovered are not currently loaded back to the data warehouse. The addition of the recovery amounts to the data warehouse will provide a more complete and accurate representation of Medicaid payment amounts.
- Evaluate other data sources and add those that will benefit Michigan's Medicaid program or are needed to support reporting requirements.

Changes to existing data loads in order to stay current w/enhancements to source systems: MICIS data sets (OASIS, Nursing Home, MDS); CSHCS; MCIR; WIC

As source systems are rewritten to align with new requirements and technology, corresponding enhancements are required to the data warehouse in order to load and store new data elements and provide query and reporting access to the data. Source system changes may be driven by changes at the federal level, such as implementation of the OASIS-C and Minimum Data Set for Nursing Homes (MDS) 3.0 data sets and forms. Source system changes may also be driven by changes at the MDCH level, such as implementation of a new web-based application for Children's Special Health Care Services (CSHCS), which will include additions to the existing data set.

Tasks include:

- Develop, test and implement data warehouse enhancements as a result changes to source systems, including:
 - OASIS
 - Nursing Home
 - MDS
 - CSHCS
 - WIC (Women, Infants and Children)
 - MCIR (Michigan Care Improvement Registry)

Develop web applications to support Medicaid programs and processes

Tasks include:

- Develop, test and implement web applications to support the following waivers:
 - Children's Support Waiver (CSW)
 - Severely and Emotionally Disturbed (SED)

These web applications will provide:

- Automated workflow to process enrollment of waiver beneficiaries (including capture of demographic data not available in BRIDGES)
- Tracking and reporting of waiver beneficiaries
- Management and tracking of waiver "slots"
- Integration with existing systems (e.g., BRIDGES, MDHS's Services Worker Support

System [SWSS])

- An interface to CHAMPS to provide data needed to process waiver payments.
- Add data for the following home and community based services waivers to be used by the corresponding web applications proposed to support the waivers:
 - CSW
 - SED
- Develop, test and implement an enhanced web-based application for MDCH's Managed Care Compliance Review Tool to replace the existing Access-based Compliance Review Tool application (the Tool). This will allow health plans and MDCH to update and access information through the web, rather than having to send the Access database back and forth to update information. The Tool summarizes all of the requirements of the Medicaid Comprehensive Health Plan contract, and State and Federal regulations, including fraud and abuse. MDCH conducts an annual compliance review of the designated criteria within the Tool. This Tool is used to document the Health Plans' compliance with contract requirements as identified in each criterion.

Create and manage METADATA for the MMIS IT Architecture, and provide BI-Administration capability for security and model management.

Metadata and field mapping will provide information on the descriptions and uses of the data, flow of the data through the system, relationship to CHAMPS screens, and relationship to legacy data warehouse data elements, as well as the transformation and cleansing procedures. This information will be especially useful to analytic staff that may not be familiar with the operational detail of the data. It will also allow for the administration of the analytic tool environment and assessment of data integrity.

Implementation and enforcement of strong password rules for data warehouse users (90-day expiration, 8-character minimum length, require use of one special character and digit, no reuse of password during 120-day period, lock-out after 3 failed attempts) will increase security and privacy of data in the warehouse. User access will be allowed strictly through the use of Roles and Profiles.

Tasks include:

- Map records to data warehouse fields, including transformation rules and frequency of updates throughout the process (e.g., 837 records, National Council for Prescription Drug Programs (NCPDP), corresponding fields in CHAMPS screens, and use in reports).
- Create business definitions/data dictionary for each data element in the new CHAMPS data model.
- Create and/or modify BI-Query models to allow user-access to pre-defined data sets based on access approved through the security process. For example, access may include combinations such as the following:
 - Identified/Linked
 - De-identified/Linked
 - Identified/Linked & Unlinked
 - De-identified/Linked & Unlinked
- Implement roles and profiles (levels of security) for user access to the new CHAMPS data model.
- Implement strong password rules.
- Develop interface maps for both CHAMPS and the data warehouse.
- Create web-based application that contains all of the mapping documentation and allows users to look up definitions and/or data relationships.
- Create web-based application that contains all of the mapping documentation and allows users to look up definitions and/or data relationships.

Provide additional data integration across program areas and continue to enhance architecture to align

with MITA initiative

Tasks include:

- Enhance architecture to align with MITA by developing data exchanges between the data warehouse and health plans. By making additional data available to health plans, these secure data exchanges promote efficient and effective data integration and sharing for purposes of improving health care outcomes for Medicaid beneficiaries. These data exchanges are adaptable and will be used to help drive the Michigan Health Information Exchange (HIE) initiatives.
- Expand the use of Medicaid data in the Common Citizen and Events Models to assess other events that may be contributing to successes or shortfalls in programs, interventions and outcomes. This will also allow MDCH to collaborate with other departments/agencies to improve Medicaid outcomes.
- Integrate Medicaid data with Corrections data to provide improved ability to identify the cross-population of Medicaid beneficiaries and prisoners, and therefore allow improved tracking and analysis of Medicaid beneficiaries.
- Integrate the data warehouse with other tool sets (e.g., Oracle, Access, ETL tools) to provide the ability to link to data that resides in source systems outside the data warehouse.
- Add new development to migrate data loads to the state's standard COTS ETL tool (DataStage) to improve data load processes, reduce risk and development/maintenance costs, and minimize differences between data warehouse and source system data.
- Evaluate and purchase tools to align technology framework with Medicaid Information Technology Architecture (MITA) standards (foster integrated, cross-functional business in order to improve administration of Michigan's Medicaid program).

Provide onsite analytic development for the various program models, and analytic tools

Tasks include:

- Update CHAMPS model-specific training manuals.
- Develop and deliver comprehensive training to educate end users on the use of the data based on the new CHAMPS and BRIDGES requirements. The implementation of these two systems resulted in substantial changes to the existing data warehouse and the need to integrate data from both post- and pre-implementation data models.
- Provide comprehensive training to help end users understand the business, and educate them on the relationship between the CHAMPS data and the Medicaid program. This will include development of materials for instructor-led classroom training as well as development of web-based training.
- Develop and deliver comprehensive training to educate developers on the new data warehouse structures and the use of data based on the new CHAMPS and BRIDGES requirements.
- Provide comprehensive training to help developers understand the business, and educate them on the relationship between the CHAMPS data and the Medicaid program.
- Provide first-line Help Desk Support to answer end user and developer questions related to the newly defined data models.
- Provide advanced analytic support and development at a level above the typical user's business and technical knowledge.
- Provide Business Objects training and support for development staff, related to developing production reports on the data warehouse.

Enhance the data warehouse as a result of CHAMPS and BRIDGES

Tasks include:

- Conduct Technical JAD sessions along with CNSI to redefine data extract layouts for the new CHAMPS data sets, as well as relationships between tables, referential integrity, key fields, etc.

- Conduct User JADs for CHAMPS Production model – to define usage requirements, data definitions, and alignment with CHAMPS screens.
- Complete development of various data structures to accommodate CHAMPS and BRIDGES data, based on input from JADs.
- Develop new data warehouse design to add CHAMPS identifiers as key fields in place of business keys, in order to eliminate duplicate records in the data warehouse and keep data synchronized between the two systems.
- Develop new BI Query Views in the data warehouse so that data presented to end users more closely aligns with what is displayed in the CHAMPS screens.
- Add and modify Metadata to reflect the CHAMPS and BRIDGES changes.
- Rewrite data warehouse structure and load programs as a result of changes being implemented in CHAMPS. As approved in the CHAMPS APD-U's, these changes include CHAMPS Change Requests (e.g., addition of new fields and new functionality) that result in a corresponding change to the data warehouse, as well as additional data warehouse testing during the approved CHAMPS implementation extensions.
- To ensure compliance with new Managed Care Organization (MCO) Drug Rebates mandated by Health Care Reform (PPACA – Patient Protection and Affordable Care Act) that went into effect 3/23/10, the following work is required:
 - Create, test and implement new process to provide an interface file to the State's PBM Pharmacy Benefits Management Services (PBM) (Magellan Medicaid Administration, Inc.) containing the MCO Drug claims (NCPDP encounters and Institution/Professional encounters for physician administered drug products) and MCO provider reference data. This data will then be used by the PBM to invoice manufacturers for CMS Federal Drug Rebates.
 - Utilize the NDC (National Drug Code):HCPCS (Healthcare Common procedure Coding System) crosswalk reference table to establish encounter edits and reports for purposes of ensuring the physician administered encounter claims are formatted properly for rebate invoicing.
- The following require redesign to accommodate the CHAMPS data warehouse changes:
 - MMA Part D submission files.
 - Eligible Months tables.
- Develop data warehouse structure and load programs to accommodate implementation of Medicaid encounter processing in CHAMPS.
- Develop and update end user queries and reports to use the newly defined models representing CHAMPS and BRIDGES data.
- Expand Situational Data in the warehouse. Situational data (fields not used directly to adjudicate a claim) are currently received from CHAMPS in a single, continuous, variable-size field, making it unusable by end users. This data will be parsed and stored in a format that makes it usable.
- Expand the data warehouse to accommodate HIPAA 5010.
- Perform ICD-10 gap analysis for MMIS and other Medicaid systems.
- Expand the data warehouse to accommodate ICD-10.
- Expand the data warehouse to include data needed to support electronic health record (EHR) (e.g., additional provider data, NLR data).
- Expand the data warehouse to include Prior Authorization data from CHAMPS.

Enhance the SURS process as a result of CHAMPS and BRIDGES

Tasks include:

- Develop new SURS extract process, which includes three parts:
 - Changes needed as a result of CHAMPS
 - Addition of Encounters to extract process
 - Replace quarterly extract with monthly extract.
- Develop new Audit programs as a result of CHAMPS.

Load Pharmacy data directly to the data warehouse

Tasks include:

- Convert all historical pharmacy claims and load to the new CHAMPS data warehouse structure (will be stored in the same data warehouse tables as fee-for-service (FFS) Claims and Encounters from CHAMPS). This process includes analysis of pharmacy data, mapping legacy data elements to the new data structure, and validation/resolution to synchronize data in the warehouse with PBM data.
- Design and develop processes to load pharmacy claims directly to both Staging and Production tables in the data warehouse (eliminate mainframe functionality and provide process to load data not adjudicated in CHAMPS). Includes implementation of data and file edits as well as processes to track receipt of files.
- Rewrite the CMS NDC Rebate data load to convert data from CMS cartridge tapes into electronic files and load directly to the data warehouse (eliminate mainframe functionality).
- Enhance the PBM data load process to include pharmacy paid claims enhancements. An example is the addition of data needed to further monitor and target outreach for purposes of increasing E-Prescribing in Michigan, and to collect information related to meaningful use.
- Load Pharmacy provider enrollment file from the State's PBM to the data warehouse.
- Rewrite NCPDP Encounter load programs to align with new CHAMPS structure and PBM data.
- Rewrite the Medicaid Health Plan Point-of-Sale (POS) pharmacy carve-out claim utilization extract to pull data from the new CHAMPS structure. This weekly process creates a file containing pharmacy carve-out claims for beneficiaries enrolled in each plan. The Medicaid Health Plans use the claim data for utilization and disease management programs.

Develop web-based Security application

Tasks include:

- Complete the Data Warehouse Security form/process in the web-based security application. User acceptance testing is currently underway in preparation for production implementation.
- At the request of Michigan Department of Technology, Management and Budget (DTMB), rewrite the internal SQL in the web-based security application to call external stored procedures to provide increased security.
- Develop the Security form/process for access to additional Medicaid applications, such as:
 - Document Management System (FileNet)
 - BRIDGES
 - Medicaid Pharmacy Providers (MPP)
 - SOLQ
 - Buy-In
 - MCIR (Immunization Registry)
 - Lead
 - Home Help
 - MIHP
 - CSHCS
 - Post-Payment Recovery System
 - Paternity/Casualty Recovery System
 - CMS 1915(c) Waiver web site.
 - Ambulatory Payment Classification (APC) web site (WebStrat)
- Integrate CHAMPS Customer Relationship Management (CRM subsystem) user information with DSA user database. This will provide MDCH with a complete picture of an individual's access across systems, via a single source application.
- Develop process to view an individual's approved/denied status across systems.
- Develop process to compare approved level of access in DSA with actual access in source system.
- Develop process to manage security of employee notifications from Human Resources (departures, position transfers, new hires) and/or integration with the Human Resource application. Actions include terminations of access, alerts to system owners, notifications to former and/or new managers, etc.

- Develop approval process for access to Medicaid data stored in the Cloud (Cloud Computing).

Enhance Data Warehouse Operability and Access

Analysis and development to optimize query and system performance will reduce data warehouse usage costs by improving efficiency and reducing storage space. Analysis of CHAMPS data warehouse usage will be performed to determine areas for improvement (e.g., rewrite queries, add statistics, and add/remove indexes to align with user access to data, compress databases). Solutions will then be identified, developed and implemented to address the identified areas for improvement.

Develop application to audit MDCH data warehouse usage. This application would provide web-based access to stored information such as identification of which users accessed which data and frequency of access.

Tasks include:

- Develop code to analyze databases and queries, identify potential areas for enhancement, develop and implement solutions.
- Develop web-based data warehouse audit application.

Develop Queries and Reports to support the Medicaid Program

The MDCH Data Warehouse is a critical component in the administration of the Medicaid Program. As such, it is frequently used as a source of information for audits, research, lawsuits, FOIA, and other similar requests for data. These requests typically require response within a short timeframe and require knowledge of both Medicaid and the data warehouse in order to provide required results within the defined timeframe.

Additionally, MDCH will be participating in the ARRA funded comparative effectiveness research (CER). As a participant of CER, MDCH will be providing data extracts related to specific proposals. MDCH will use the data warehouse to provide requested data.

Tasks include:

- Develop code to extract data as requested for CER.
- Develop code to extract data as needed for audits, research, lawsuits, FOIA, and other similar requests.
- Develop code to extract data for use in proof-of-concept of Prospective Payment editing and other similar requests.

Develop and Configure Unique Client Identifier (UCI) Replacement

MDCH developed the UCI using custom code in 2001. The UCI links person-level records from one database to another by evaluating the available data elements such as name, address, IDs – beneficiary, client, consumer – to determine if a match exists. When a match exists, a UCI is assigned that is used in all the databases. Once linked, they remain linked unless manually removed.

Since 2001 when the UCI was first developed, there have been huge technology gains in master person technology. MDCH adopted a new COTS Product that is an independent system, yet fully integrated with the data warehouse, which will drastically reduce the amount of custom development required, speed integrations of additional sources, and reduce the ongoing operating cost of the system.

To enable these recent advances including enhanced person matching algorithms and new standards for identity management (including the required standards for HIE), the following Tasks are required.

Tasks include:

- Install and configure the new hardware and software.
- Implement the software to link all data sets currently included in UCI.
- Integrate the new product with other existing systems.

- Develop a Provider Index within the COTS product.

IT Classifications/Skills Set and Tasks:

The requirement is that the individual must possess the skills, knowledge, and experience required to perform the duties effectively and efficiently at the level specified in this Second Revised SOW, where DTMB and MDCH agrees that the individuals named in the PRICING SUMMARY of this Second Revised SOW for the applicable positions are deemed to have met these required levels of the indicated positions.

1. Data Warehouse Project Manager

Data warehouse project manager manages the integration and/or development and delivery of very large and complex deliverables directly to the customer. This position provides the primary interface between the Contractor, the State and third party providers.

- Establishes and manages the project plan, according to SUITE standards, including the development schedule, resource requirements and integration efforts of third party products. Periodically reports progress to State management.
- Motivates and directs project team; sets goals, objectives and priorities; assigns and reviews work.
- Acts as the primary interface with the State on issues regarding the project deliverable. Makes sure customer reviews are held with the customer user community and obtains sign-off on status reports and requirements.
- Makes sure approved methods, processes and tools are consistently used.
- Is accountable for meeting project schedule and results as well as for the State customer satisfaction and quality of the deliverables.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the BI tools available to them to support their own data needs where possible.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.
- Assists the MDCH Agency Project Manager with documentation for managing the data warehouse such as presentations, reports and Advanced Planning Documentation (APD) to be submitted to CMS for funding.

Required Experience

- 5+ Years Project Manager or Team Lead Experience.
- 5+ Years Business Intelligence Experience.
- 3+ Years Teradata DW Experience.

2. Data Warehouse Architect

Data warehouse architect designs total solutions involving multiple systems for large organizations. Solutions may use third party hardware and software. Participates/leads in the construction of models and pilot programs with senior level managers.

- Conducts model and pilot programs to test proposals or develop solutions to problems. Develops measurement criteria to evaluate programs and projects and develops or reviews estimates on technical aspects of projects.
- Responsible for data warehouse database design and providing technical direction to modelers, data analysts, ETL developers, and database administrators.
- Develops design proposals to meet MDCH needs
- Approves integrated systems design proposals for technical content.
- Monitors the implementation for technical correctness so that MDCH needs are met.
- Identifies, analyzes and evaluates alternative design solutions.

Required Experience

- 6+ Years Data Warehouse Architect and Model Experience.
- Teradata Version 12 or 13 Experience.
- Teradata Utilities Experience.

- 2+ Years Data Warehouse Administrator Experience.

3. Data Warehouse Database Administrator

Database administrator (DBA) is responsible for the availability, safety and usefulness of the MDCH data warehouse databases.

- Software Installation and database management system upgrades.
- Software upgrades to ensure the database is in compliance with critical security patches, or, software upgrades deemed necessary by the State.
- Working in conjunction with system administrators, server configuration to ensure that the entire database system is capable of providing the services needed.
- Performance monitoring to identify bottlenecks and places where throughput can be improved.
- Security administration to ensure that the database cannot be accessed by unauthorized parties or damaged by anyone.
- Configure access to the data warehouse and communication between the warehouse and other servers.
- Physical database design translates the logical database design to work optimally for the specific database environment.
- Working with MDCH data warehouse developers to establish standards and guidelines for access to MDCH data warehouse databases.
- Backup and Restore management to ensure that no data is lost and those backups can be restored in a timely manner.
- Work with MDCH data warehouse developers and MDCH clients to optimize their queries.

Required Experience

- 4+ Teradata Database Administrator Experience.
- 2+ Teradata Version 12 or 13 Experience.
- Teradata Utilities Experience.
- Teradata Manager Experience.
- SQL Assistant Experience.
- UNIX Experience.
- Oracle (9i, 10g, 11g) Experience.

4. Data Warehouse Database Administrator to serve as a Business Objects Administrator

The Data Warehouse Database Administrator to serve as a Business Objects Administrator is responsible for the availability, safety and usefulness of the MDCH Business Objects (BO) environment.

- Maintaining all BO user accounts and controlling user's access to MDCH BO reports.
- Maintaining all ODBC connections to respective data warehouse databases.
- Maintaining print queues and coordinates printing related activities with Consolidate Print Center (CPC).
- Publish Crystal Reports into Business Objects.
- Scheduling reports and verification reports ran at scheduled date/time.
- Coordinating/executing re-runs of reports when required as corrective action to issues.
- Troubleshooting any issues with Reports or the Business Objects Application (Technical support to End Users).
- Central point of contact for all questions related to the BO environment.
- Meeting with MDCH customers to discuss supporting activities. (Bi-weekly DW Projects meeting)
- Maintain web based end user training manual.
- Provide one on one support for DTMB developers and end users to assist them in accomplishing their data reporting needs.
- Oversee Business Objects enterprise environment changes, working with other departments to ensure modifications to the BO environment are properly planned and tested.

Required Experience

- 4+ Years Business Objects Administrator Experience.
- 3+ Years Business Objects Universe Development Experience.
- Business Intelligence Tools: Business Objects, Micro Strategy, Crystal Reports.

- Business Objects Version XI r2 and 3.1 Experience.
- Business Objects WEBi and InfoView Training Experience.
- 3+ Years Business Objects Report Developer.

5. Data Warehouse Developer Senior

Data warehouse developers perform application development tasks in support of building business intelligence applications and integrating data warehouse resources into other MDCH applications. In addition they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.
- Work with developers and end user query developers to design and improve database queries.
- Train developers in how best to design queries for a specific database.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.

Required Experience

- 6+ Years SQL Development Experience.
- Business Analyst Experience.
- SQL and Performance Tuning Experience.
- Teradata Utilities Experience
- SQL Assistant Experience.
- UNIX Shell Scripting Experience.

6. Data Warehouse Developer Junior

Data warehouse developers perform application development tasks in support of building business Intelligence applications and integrating data warehouse resources into other MDCH applications. In addition they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.
- Work with developers and end user query developers to design and improve database queries.
- Train developers in how best to design queries for a specific database.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.

Required Experience

- 2+ Years SQL Development Experience.
- Teradata Utilities Experience.
- SQL Assistant Experience.

7. Data Warehouse Designer/Modeler

Data warehouse designer is responsible for the layout and navigability of a database. This involves defining the tables, keys and relationships that will allow an application to retrieve and update data correctly and efficiently.

- Working with end users and developers to understand the data needs of MDCH clients.
- Documenting the MDCH data warehouse data involves including definitions, constraints and access needs.
- Creating and maintaining MDCH data warehouse logical designs, including Entity Relationship

diagrams, which illustrate what data will be stored, how it is organized, how it can be retrieved (keys) and how it relates to other data in the database.

- Creating and maintaining MDCH data warehouse data definition language (DDL) that can be used to create and update the database.
- Working with the MDCH Data Warehouse DBA and ETL developers, modify the logical design to create a physical design most suited to the database environment and the applications that will use it.
- Work with MDCH Data Warehouse ETL developers and DBA to create and maintain database design standards.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their report development related tasks may include:
- Perform application development tasks in support of building business intelligence applications and integrating data warehouse resources into other Agency applications. Their development related activities may include tasks such as:
- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.
- Work with developers and end user query developers to design and improve database queries.
- Train developers in how best to design queries for a specific database.

Required Experience

- 5+ Years Data Warehouse Modeling Experience.
- 5+ Years of SQL Development.
- Data Warehouse Architect Experience.

8. Data Warehouse Business Intelligence Report Developer

Data warehouse Business Intelligence Report Developer is expected to be able to work with agency requestors to define and develop new reports, and provide training and technical support to both DTMB developers and end user query developers.

- Working with end user requestors to understand their data needs and create and implement solutions to those needs.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the BI tools available to them to support their own data needs where possible.
- Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the data warehouse.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 5+ Years of Business Objects Report Development Experience.
- 5+ Years of SQL Development.
- Business Objects universe development experience.
- Business Analyst Experience.

9. Data Warehouse Business Intelligence Analyst Senior

Data warehouse business intelligence/analyst works with end users to provide information in a number of different ways.

- Running JAD sessions to understand what data is needed and how it is likely to be used.
- Creating ad-hoc queries to answer specific user questions.
- Program design and specification.
- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Supporting end user to enable them to create their own queries and reports as needed.

- Identify data problems and work with developers to correct them.
- Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
- Organize and run user groups to encourage self-support among end user and DTMB query and other BI application developers.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
- Working with end user requestors to understand their data needs and create and implement solutions to those needs.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the BI tools available to them to support their own data needs where possible.
- Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the data warehouse.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 6+ Years Project Lead/BI Analyst Experience.
- 4+ Years Business Objects Report Development.
- Business Objects Training Experience.
- SQL Assistant Experience.

10. Data Warehouse Business Intelligence Analyst Junior

Data warehouse business intelligence/analyst works with end users to provide information in a number of different ways.

- Running JAD sessions to understand what data is needed and how it is likely to be used.
- Creating ad-hoc queries to answer specific user questions.
- Program design and specification.
- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Supporting end user to enable them to create their own queries and reports as needed.
- Identify data problems and work with developers to correct them.
- Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
- Organize and run user groups to encourage self-support among end user and DTMB query and other BI application developers.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
- Working with end user requestors to understand their data needs and create and implement solutions to those needs.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the BI tools available to them to support their own data needs where possible.
- Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the data warehouse.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 2+ Years Project Lead/BI Analyst Experience.
- 1+ Years Business Objects Report Development.

11. Data Warehouse Help Desk Analyst

Help desk staff provide first line support for end users and developers.

- Manages MDCH Data Warehouse mailbox.
 - Assesses user identified issues and provides guidance for resolution.
 - Directs unresolved problems and reports to appropriate staff, if necessary.
 - Tracks and analyzes problem occurrences and resolutions.
- Conducts data warehouse user group training.
- Develops training materials.
- Assists with query/report development.
- Provides user assistance with BI Services tool(s), model/database, business knowledge and recommendations for efficiency and solutions to meet user business needs.

Required Experience

- 3+ Years of Data Warehouse Help Desk Analyst Experience.
- Experience in supporting the end users in accessing the data warehouse and effectively utilize the desktop tools.

12. Web Developer

A Web Developer is responsible for designing and developing web-based applications that interact with and utilize the data warehouse to provide MDCH users with highly interactive, easy to use web-based BI applications.

- Defining and developing applications that rely on unique web-based technology and tools, and that will conform to standards defined by DTMB for user interface and usage of the data warehouse.
- Defining the web application user interface, business rules, database access and data warehouse access, and determining any data sources that need to be imported into the data warehouse for web application operation.
- Producing technical specification documents to review the web application with the user, and conducting JAD sessions to revise and finalize technical specifications.
- Prototyping of web application pages for user review and approval.
- Producing accurate and complete data mapping documents
- Performing user acceptance testing with users and DTMB to confirm that new web applications perform per specifications, and making adjustments to the web application as required
- Maintaining a development and staging environment for the development and testing of enhancements and updates to the web application.

Required Experience

- 5+ Years of Data Warehouse Web Developer Experience.
- Web development: HTML, JavaScript, PHP, Perl.

13. Subject Matter Expert (SME)

A Subject Matter Expert (SME) will be responsible for providing specialized, in-depth knowledge of a business area(s) such as Medicaid, 5010 HIPAA transactions, Pharmacy, ICD-10 and technology solutions.

- Leading or actively participating in work-groups with the need for specialized knowledge.
- Providing guidance on how their area of expertise can resolve an organizational need, and actively participates in all phases of a project/initiative by sharing their knowledge, expertise and ideas.
- Defining technology and business solutions based on thorough understanding of business processes and policies.
- Reviewing, helping re-engineer, or creating new processes and policies,
- Evaluating and defining technology requirements and solutions.
- Defining business needs, and identifying and recommending the most appropriate solutions.
- Providing documentation such as forms, manuals, correspondence, and procedures
- Understanding, articulating, and implementing best practices related to their area of expertise.

Required Experience

- 5+ Years of Data Warehouse design and development of BI applications using Business Object Toolsets and other BI technologies.
- Experience in recommending appropriate tools and technology required to meet immediate and long-term business and individual self-service reporting needs.

Transition Plan:

Not Applicable.

DELIVERABLES:

The deliverables and tasks agreed to in this Second Revised SOW shall comply with the following approval process:

APPROVAL OF DELIVERABLES, IN GENERAL:

(a) All Deliverables (Physical Deliverables, Written Deliverables, and Service Deliverables) require formal written approval by the State, in accordance with the following procedures. Formal approval by the State requires that the Deliverable be confirmed in writing by the State to meet its specifications, which will include the successful completion of Testing as applicable in Section 6.3, to be led by the State with the support and assistance of Contractor. The parties acknowledge that the approval process set forth herein will be facilitated by ongoing consultation between the parties, visibility of interim and intermediate Deliverables and collaboration on key decisions.

(b) The State's obligation to comply with any State Review Period is conditioned on the timely delivery of Deliverables being reviewed.

(c) Prior to commencement of its review or testing of a Deliverable, the State may inspect the Deliverable to confirm that all components of the Deliverable have been delivered without material deficiencies. If the State determines that the Deliverable has material deficiencies, the State may refuse delivery of the Deliverable without performing any further inspection or testing of the Deliverable. Otherwise, the review period will be deemed to have started on the day the State and Contractor receive the Deliverable and agree that the Deliverable is ready for use and, where applicable, Contractor has provided certification in accordance with Section 6.3(a).

(d) The State will approve in writing a Deliverable upon confirming that it conforms to and, performs in accordance with, its specifications without material deficiency. The State may, but shall not be required to, conditionally approve in writing a Deliverable that contains material deficiencies if the State elects to permit Contractor to rectify them post-approval. In any case, Contractor will be responsible for working diligently to correct within a reasonable time at Contractor's expense all deficiencies in the Deliverable that remain outstanding at the time of State approval.

(e) If, after three (3) opportunities (the original and two repeat efforts), Contractor is unable to correct all deficiencies preventing Final Acceptance of a Deliverable, the State may: (i) demand that Contractor cure the failure and give Contractor additional time to cure the failure at the sole expense of Contractor; or (ii) keep any resulting Contract(s) in force and do, either itself or through other parties, whatever Contractor has failed to do, in which event Contractor shall bear any excess expenditure incurred by the State in so doing beyond the Contract(s) price for such Deliverable and will pay the State an additional sum equal to ten percent (10%) of such excess expenditure to cover the State's general expenses provided the State can furnish proof of such general expenses; or (iii) terminate the particular Statement of Work for default, either in whole or in part by notice to Contractor provided Contractor is unable to cure such breach. Notwithstanding the foregoing, the State shall not use, as a basis for exercising its termination rights under this Section, deficiencies discovered in a repeat State Review Period that could reasonably have been discovered during a prior State Review Period.

(f) The State, at any time and in its reasonable discretion, may halt the testing or approval process if such process reveals deficiencies in or problems with a Deliverable in a sufficient quantity or of a sufficient severity as to make the continuation of such process unproductive or unworkable. In such case, the State may return the applicable Deliverable to Contractor for correction and re-delivery prior to resuming the testing or approval process.

PROCESS FOR APPROVAL WRITTEN DELIVERABLES:

The State Review Period for Written Deliverables will be the number of days set forth in the applicable Statement of Work/Purchase Order following delivery of the final version of the Deliverable (failing which the State Review Period, by default, shall be five (5) Business Days for Written Deliverables of one hundred (100) pages or less and ten (10) Business Days for Written Deliverables of more than one hundred (100) pages). The duration of the State Review Periods will be doubled if the State has not had an opportunity to review an interim draft of the Written

Deliverable prior to its submission to the State. The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within five (5) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF SERVICE DELIVERABLES:

The State Review Period for approval of Service Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty- five (45) Business Days for a Service Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF PHYSICAL DELIVERABLES:

The State Review Period for approval of Physical Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) continuous Business Days for a Physical Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

ACCEPTANCE CRITERIA:

As agreed upon through Statement of Work ITB-TH-00014, the T&M based services shall be accepted based upon time sheets submitted by Contractor and approved by the State for actual hours of Services performed.

PROJECT CONTROL AND REPORTS:

A monthly progress report must be submitted to DCH and DTMB Project Managers throughout the life of this project. The report may be submitted with the billing invoice. Each monthly progress report must contain the following information:

- **Hours:** Indicate the number of hours expended during the past month, and the cumulative total to date for the project.
- **Tasks accomplished:** Indicate what projects have been worked on, and what was completed during the current reporting period.
- **Planned Tasking:** Describe activities to be accomplished during the next reporting period.
- **Funds:** Indicate the amount of funds expended during the current reporting period, and the cumulative total to date for the project.
- **Issues:** Indicate major issues/risks/changes, real or perceived, in relation to the scope of this SOW, and recommend resolutions.

SPECIFIC AGENCY STANDARDS:

Agency standards, if any, in addition to DTMB standards.

PAYMENT SCHEDULE:

Payment will be made on an all time and materials (hourly based) must submit time sheets with all invoices and include purchase order basis. DTMB will pay CONTRACTOR upon receipt of properly completed invoices which shall be submitted to the billing address on the State issued purchase order not more often than monthly. DTMB Accounts Payable area will coordinate obtaining Agency Project Manager and DTMB Project Manager approvals. All invoices should reflect actual work completed by payment date, and must be approved by the Agency Project Manager and DTMB Project Manager prior to payment. The invoices shall describe and document to the State's satisfaction a description of the work performed the progress of the project, and fees.

Payment shall be considered timely if made by the DTMB within forty-five (45) days after receipt of properly completed invoices.

PRICING SUMMARY

Pricing for the slightly longer than four (4) month extension will remain consistent with the pricing applicable to the current positions being provided to MDCH under the DTMB Contract prior to the effective date of this Second Revised SOW, where such pricing was contained in the Optum Proposal dated December 19, 2011, as amended by subsequent letter amendments and where, for administrative convenience, the named individuals, their titles and hourly rates for Services performed during the slightly longer than four (4) month period covered by this Second Revised SOW are set forth below:

TABLE 1

Resource Name	Position	Hourly Rate	Estimated Maximum Hours	Estimated Dollars
BARNSTEAD, JEANNE	Data Warehouse Project Manager	\$ 144.00	680	\$ 97,920
BHOGAL, PRADIP	Data Warehouse Developer Junior	\$ 136.00	680	\$ 92,480
BIEBER, MONTY	Data Warehouse BI Analyst Senior	\$ 136.00	680	\$ 92,480
BOAK, KATHY	Data Warehouse Help Desk Analyst	\$ 136.00	680	\$ 92,480
CAREY, TIM	Data Warehouse Project Manager	\$ 144.00	680	\$ 97,920
CHITIBOMMA, RAVI	Data Warehouse Developer Junior	\$ 136.00	680	\$ 92,480
CHRISTIANSEN, JEREMY	Data Warehouse Architect	\$ 140.00	680	\$ 95,200
COBURN, DEB	Data Warehouse BI Analyst Junior	\$ 136.00	680	\$ 92,480
DAMEGUNTA, DEEPAK	Data Warehouse Web Developer Senior	\$ 120.00	680	\$ 81,600
EIKLENBORG, LAURA	Subject Matter Expert HEDIS	\$ 200.00	80	\$ 16,000
ELIAS, CHRIS	Subject Matter Expert MPI	\$ 265.00	340	\$ 90,100
FOTH, CASEY	Subject Matter Expert MPI	\$ 265.00	120	\$ 31,800
FRIAR, BETH	Data Warehouse BI Analyst Junior	\$ 136.00	680	\$ 92,480
GEORGE, AMY	Data Warehouse Project Manager	\$ 144.00	680	\$ 97,920
HOMER, DANIEL	Data Warehouse Developer Senior	\$ 136.00	340	\$ 46,240
JACOB, DANA	Data Warehouse BI Analyst Junior	\$ 136.00	680	\$ 92,480
KRISHNA MOORTHY, RAJA	Subject Matter Expert MPI	\$ 265.00	340	\$ 90,100
MAKI, MARY JO	Data Warehouse BI Analyst Senior	\$ 136.00	680	\$ 92,480
MCEVOY, JAMES	Data Warehouse Developer Senior	\$ 136.00	680	\$ 92,480
NEUMAN, RUSSEL	Data Warehouse BI Analyst Junior	\$ 136.00	680	\$ 92,480
OLSON, LAURA	Data Warehouse Developer Senior	\$ 136.00	680	\$ 92,480
PEDERLA, ANUSH	Data Warehouse Web Developer Senior	\$ 120.00	680	\$ 81,600
PEDINEKALUVA, SIVA	Data Warehouse Database Administrator	\$ 136.00	680	\$ 92,480
ROTHAN, TOM	Data Warehouse Designer/Modeler	\$ 136.00	680	\$ 92,480
SABIR, MOHAMMAD	Data Warehouse Developer Junior	\$ 136.00	680	\$ 92,480
SCHAFER, DAVID	Subject Matter Expert HEDIS	\$ 200.00	80	\$ 16,000
SCHUSTER, JOHN	Data Warehouse Developer Senior	\$ 136.00	680	\$ 92,480
SHAH, AMI	Data Warehouse Web Developer Junior	\$ 80.00	680	\$ 54,400
SHAH, KUNAL	Data Warehouse Web Developer Senior	\$ 120.00	680	\$ 81,600
SNYDER, JOHN	Data Warehouse BI Analyst Junior	\$ 136.00	680	\$ 92,480
TBD BA	Data Warehouse BI Analyst Junior	\$ 136.00	680	\$ 92,480
TANNEERU, VISHAL	Data Warehouse BI Report Developer	\$ 80.00	680	\$ 54,400
TATE, JEFF	Subject Matter Expert Champs	\$ 178.00	680	\$ 121,040
VARDE, ARUN	Data Warehouse Web Developer Senior	\$ 120.00	680	\$ 81,600
WILLIAMS, GEOFFREY	Data Warehouse Developer Junior	\$ 136.00	680	\$ 92,480
Total Estimated Hours and Dollars			21,020	\$ 2,900,080

ADDITIONAL TIME & MATERIALS LABOR RATES FOR PROFESSIONAL SERVICES:

To the extent the parties agree that certain specific services must be provided on a time and materials basis, such services must be provided at the Labor Rates (Not to Exceed Hourly Rate cost column). Future amendments to

this Second Revised Statement of Work may utilize this rate structure, as agreed between the Contractor and State. Additionally the Contractor may utilize the rates in order to provide the State with a not to exceed time and materials price. Prices quoted herein will be used for change, addition, and / or deletion of work associated with this Second Revised SOW. The Estimated Hours is provided below as an estimate only and is not meant to preclude or limit the State from requesting a resource/staffing mix for future projects that exceeds the hours estimate for a specific Staffing Category as long as the Total Additional Professional Services Cost is not exceeded.

TABLE 2

Staffing Category	Not to Exceed Hourly Rate	Estimated Hours	Total Estimated Price (Multiply NTE Hourly Rate x Estimated Hours)
Data Warehouse Project Manager	\$144.00	625	\$90,000.00
Data Warehouse Architect	\$140.00	625	\$87,500.00
Data Warehouse Database Administrator	\$136.00	625	\$85,000.00
Data Warehouse Developer Junior	\$136.00	625	\$85,000.00
Data Warehouse Developer Senior	\$136.00	650	\$88,400.00
Data Warehouse Designer/Modeler	\$136.00	625	\$85,000.00
Data Warehouse Business Intelligence Report Developer	\$85.00	625	\$53,125.00
Data Warehouse Business Intelligence Analyst Junior	\$136.00	625	\$85,000.00
Data Warehouse Business Intelligence Analyst Senior	\$136.00	627	\$85,272.00
Data Warehouse Help Desk Analyst	\$136.00	625	\$85,000.00
Data Warehouse Web Developer Junior	\$80.00	625	\$50,000.00
Data Warehouse Web Developer Senior	\$120.00	625	\$75,000.00
Data Warehouse Subject Matter Expert	\$195.00	100	\$19,500.00
Subject Matter Expert HEDIS	\$250.00	100	\$25,000.00
Subject Matter Expert MPI	\$265.00	600	\$159,000.00
Total Additional Professional Services Cost	N/A	8,327	\$1,157,797.00

EXPENSES:

The State will NOT pay for any travel expenses, including hotel, mileage, meals, parking, etc.

PROJECT CONTACTS:**The MDCH Project Manager is:**

Cynthia Green-Edwards
 Director, Office of Medicaid Health Information Technology
 Michigan Department of Community Health (MDCH)
 500 Pine Street, Capitol Commons Center
 Lansing, Michigan 48933
 517-241-9998
 EDWARDSC@michigan.gov

The DTMB Project Manager is:

Carmen Redwine
 Business Relationship Manager - MDCH
 Michigan Department of Technology Management and Budget (DTMB)
 Agency Services – Department of Community Health (DCH)
 300 East Michigan Avenue, Chandler Building
 Lansing, MI
 517-241-2925
 RedwineC1@michigan.gov

The DTMB Contract Administrator for this project is:

Joseph Kelly
Michigan Department of Technology, Management and Budget
DTMB Procurement - Stevens T. Mason Building – 2nd Floor
530 W. Allegan Street
Lansing, MI 48933
517-373-3993
Email: kellyj11@michigan.gov

AGENCY RESPONSIBILITIES:

- The State may discontinue the services of any vendor(s) -supplied staff with two weeks' notice without cause at any time.
- The State will provide access to networks, servers, software license (as appropriate), etc. needed for Vendor to perform tasks required for this Second Revised SOW.

LOCATION OF WHERE THE WORK IS TO BE PERFORMED:

The work is to be performed, completed, and managed at locations determined by the Vendor, but with the expectation that personnel will be available, on hand and able to complete emergency tasks. In addition, onsite support may be needed and will be identified at such time.

EXPECTED CONTRACTOR WORK HOURS AND CONDITIONS:

Contractor(s) must provide services during normal working hours (Monday through Friday, 7:00 a.m. to 6:00 p.m. ET.) and possible night and weekend hours depending on position and project requirements. 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. Contractor(s) shall observe the same standard holidays as State employees. The State does not compensate for holiday pay. Contractor(s) will not be reimbursed for travel expenses or travel time. No overtime will be permitted.

RIGHT TO OWNERSHIP:

State intends to own the Software at the end of the Contract

- Ownership of Work Product by State. All Deliverables shall be owned by the State and shall be considered works made for hire by the Contractor for the State. The State shall own all United States and international copyrights, trademarks, patents or other proprietary rights in the Deliverables.
- Vesting of Rights. The Contractor agrees to assign, and upon creation of each Deliverable automatically assigns, to the State, ownership of all United States and international copyrights, trademarks, patents, or other proprietary rights in each and every Deliverable, whether or not registered by the Contractor, insofar as any such Deliverable, by operation of law, may not be considered work made for hire by the Contractor for the State. From time to time upon State's request, the Contractor and/or its personnel shall confirm such assignment by execution and delivery of such assignments, confirmations of assignment, or other written instruments as the State may request. The State shall have the right to obtain and hold in its own name all copyright, trademark, and patent registrations and other evidence of rights that may be available for Deliverables.

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

CHANGE NOTICE NO. 20 (Revised)
 to
CONTRACT NO. 071B1300138
 between
THE STATE OF MICHIGAN
 and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Joe Kelly	517-373-3993	Kellyj11@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card	<input type="checkbox"/> Direct Voucher (DV)	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
<u>EXTEND CONTRACT EXPIRATION DATE</u>	<u>EXERCISE CONTRACT OPTION YEAR(S)</u>	<u>EXTENSION BEYOND CONTRACT OPTION YEARS</u>	<u>LENGTH OF OPTION/EXTENSION</u>	<u>EXPIRATION DATE AFTER CHANGE</u>
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		
<u>VALUE/COST OF CHANGE NOTICE:</u>		<u>ESTIMATED REVISED AGGREGATE CONTRACT VALUE:</u>		
\$2,504,000.00		\$23,995,398.00		
Effective immediately, this Contract is INCREASED by \$2,485,952.00 to cover services of the following resources.				
	Position	Resource	Hourly Rate	
	DW Project Mangaer	Melissa Jourden	\$147.00	
	DW Architect	Ray Desmeules	\$163.00	
	DW Modeler	Lee Ritchie	\$143.00	

DW Database Administrator	Mohommod Khan	\$140.00
BO Administrator	Murali Mahadevan	\$149.00
DW Business Analyst	Jim Davis	\$144.00
DW Developer	Bruce Grant	\$139.00
DW Developer	Sai Swaroop Mudduluru	\$103.00
DW Developer	Amarnath Kogantiat	\$125.00

All other terms, conditions, specifications and pricing remain the same.

Per vendor and agency agreement and the approval of DTMB Procurement.

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

CHANGE NOTICE NO. 20
 to
CONTRACT NO. 071B1300138
 between
THE STATE OF MICHIGAN
 and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	<u>David.wieber@optum.com</u>
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Joe Kelly	517-373-3993	<u>Kellyj11@michigan.gov</u>

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		
VALUE/COST OF CHANGE NOTICE:		ESTIMATED REVISED AGGREGATE CONTRACT VALUE:		
\$2,485,952.00		\$23,977,350.00		
Effective immediately, this Contract is INCREASED by \$2,485,952.00 to cover services of the following resources.				
	Position	Resource	Hourly Rate	
	DW Project Mangaer	Melissa Jourden	\$147.00	
	DW Architect	Ray Desmeules	\$163.00	
	DW Modeler	Lee Ritchie	\$143.00	
	DW Database Administrator	Mohommod Khan	\$140.00	

BO Administrator	Murali Mahadevan	\$149.00
DW Business Analyst	Jim Davis	\$144.00
DW Developer	Bruce Grant	\$139.00
DW Developer	Sai Swaroop Mudduluru	\$103.00
DW Developer	Amarnath Kogantiat	\$125.00

All other terms, conditions, specifications and pricing remain the same.

Per vendor and agency agreement and the approval of DTMB Procurement.

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

July 20, 2013

CHANGE NOTICE NO. 19
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Joe Kelly	517-373-3993	Kellyj11@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:							
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE			
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>					
VALUE/COST OF CHANGE NOTICE:		ESTIMATED REVISED AGGREGATE CONTRACT VALUE:					
\$544,000.00		\$21,491,398.00					
Effective June 10, 2013, this Contract is hereby INCREASED by \$544,000.00 per State's work requests ITB-TH-DW-00016.							
All other terms, conditions, specifications and pricing remain the same.							
Per vendor and agency agreement and the approval of DTMB Procurement.							

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

February 20, 2013

CHANGE NOTICE NO. 18
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Joe Kelly	517-373-3993	Kellyj11@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card	<input type="checkbox"/> Direct Voucher (DV)	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		
VALUE/COST OF CHANGE NOTICE:		ESTIMATED REVISED AGGREGATE CONTRACT VALUE:		
\$4,274,870.00		\$20,947,398.00		

Effective Immediately, this Contract is hereby INCREASED by \$4,274,870.00 per State's work requests ITB-TH-0014 and incorporates the Statement of Work below.

All other terms, conditions, specifications and pricing remain the same.

Per vendor and agency agreement and the approval of DTMB Procurement.



**MICHIGAN DEPARTMENT OF TECHNOLOGY,
MANAGEMENT AND BUDGET
IT SERVICES
for
DATA WAREHOUSE (DW) AND BUSINESS INTELLIGENCE (BI)
REVISED STATEMENT OF WORK**

The data warehouse is maintained and hosted by DTMB and currently supports multiple agencies, including the Michigan Department of Community Health (DCH), the Michigan Department of Human Services (DHS), the Michigan Department of Treasury (Treasury), the Michigan Department of Energy, Labor and Economic Growth (DELEG) and the State Courts Administrative Office (SCAO). Additional agencies may be supported in the future. The State of Michigan wishes to continue to host and administer any replacement systems with existing State staff in existing State facilities.

BI services will be provided in a three-tier fashion. The primary support for an agency's BI needs will come from its associated DTMB Agency Services team. Where this is not possible, due either to lack of skills or resource shortages, the Center for Shared Solutions and Technology Partnerships (CSSTP) will provide the needed support. However, the State's need is such that these two groups cannot serve all of its BI needs. In that case, CSSTP will Contract with a pre-qualified BI service Contractor to provide appropriate support. That support may come in the form of staff augmentation where Contractor staff works side by side with DTMB staff under the direction of a DTMB supervisor. It may also be provided as a staff augmentation to an existing CSSTP team. DTMB may choose to Contract with the pre-qualified BI service Contractor through CSSTP to develop a BI application or system with DTMB and Agency oversight for delivery to the State. In that case the BI Contractor must be able to provide knowledge transfer to State staff sufficient to maintain and extend the application.

A Pre-Qualification Program was developed to provide a mechanism for staff augmentation and project development support of the data warehouse and related application development.

This Revised Statement of Work (" Revised SOW") is issued under the terms of the Contract 071B1300138 between Optum Government Solutions, Inc. ("Optum" or "Contractor" or "Vendor") and the Michigan Department of Technology, Management and Budget, Procurement, as established under the Data Warehouse and Business Intelligence Program (the '138 Contract") and more specifically under Work Request ITB-TH-00014 for the MDCH Project ("Work Request 14"), and the Optum Technical Proposal and Optum Price Proposal dated December 19, 2011, as amended by subsequent letter amendments (the "Optum Proposals"), where the '138 Contract, as amended by Work Request 14 and the Optum Proposals are collectively referred to as the "DTMB Contract").

Project Title: Michigan Department of Community Health Data Warehouse AOC	Period of Coverage: 02/27/2013 – 08/26/2013
Requesting Agency: Michigan Department of Community Health (MDCH)	Date: 12/06/12
Agency Project Manager: Cynthia Edwards	Phone: 517-241-9998
DTMB Project Manager: Carmen Redwine	Phone: 517-241-2925
DTMB Contract Administrator: Joseph Kelly	Phone: 517-373-3993

Brief Description of Services to be provided:

The State elects to extend PO 084N2201934 issued under the DTMB Contract for six (6) months. Advice of Change (AOC) to PO 084N2201934 is required for support of the new end date of 8/26/13 which will allow ongoing technical support for project(s) of various sizes for the MDCH Data Warehouse that are described in more detail in this Revised SOW. PO new service dates: 2/27/13-8/26/13

BACKGROUND:

MDCH has been using the data warehouse since 1994 to direct policy, detect fraud, identify potentially valuable new initiatives, reduce error rates, calculate rates and more.

MDCH utilizes the data warehouse for multiple purposes including mission critical functions. It functions as the department's decision support system. MDCH uses data from the warehouse for rate setting for hospitals and managed and long term care providers. It is used to manage the performance of its partners (managed care providers and others) as well as programs within MDCH. The Department has an extensive analytics effort to ensure that funds are being spent most effectively, including detecting and prosecuting fraud, and assure that Medicaid beneficiaries are getting the best care possible. In support of departmental management, the data warehouse is used to analyze trends, report on all aspects of Medicaid, and provide critical support to the budgeting process. Beyond this, the data warehouse provides significant analytical support for epidemiology and other studies.

MDCH will be adapting and expanding its use of the data warehouse as it completes the implementation of ongoing work in its Medicaid Management Information System (MMIS), known as CHAMPS (Community Health Automated Medicaid Processing System). CHAMPS efforts underway include federally mandated projects such as HIPAA 5010 and D.O processing, ICD-10 and Health Reform. In addition, MDCH will be adding new data sources and increasing their collaboration with other agencies along with adding new analytical tools. The Department expects to utilize the data warehouse for Health Information Technology/Health Information Exchange initiatives, as well as for the state's Health Insurance Exchange. The Medicaid Electronic Health Record (EHR) Incentive Payment Program and Michigan Health Information Network are American Recovery and Reinvestment Act of 2009 (ARRA) initiatives to improve health care quality, cost, efficiency, and patient safety through electronic exchange of health information. An important requirement of these ARRA initiatives requires the use of clinical data to improve patient care outcomes which will involve significant research efforts using de-identified data. It is anticipated that much of the data will be stored in the data warehouse. To store and use of this ARRA initiative data will require significantly increased data warehouse capabilities.

MDCH has relied on contractor staff to provide data warehouse support and business intelligence services. These services include: providing data warehouse Extract, Transform and Load (ETL) services, application development, web development, business intelligence model, reporting, query development, help desk support, training and data analysis.

The State of Michigan Department of Community Health (MDCH), with assistance of the Michigan Department of Technology, Management & Budget (DTMB), awarded to Optum through the DTMB Contract, under Purchase Order (PO) 084N2201934 to obtain initially, twenty seven (27) FTE positions to support, maintain and execute enhancement projects of various sizes for the MDCH Data Warehouse for one (1) year. As expected, during the current term of the Work Request 14, and through various State Requests and Optum Proposals, the makeup of Optum staffing has changed to meet the State's needs. The current staffing, position descriptions, associated rates, and estimated maximum hours by position is detailed in the PRICING SUMMARY below, where, for purposes of this SOW, the positions detailed are desired for continuation for an additional six (6) months from February 27, 2013 through August 26, 2013.

The total number of individuals continues to be permissible to be increased or decreased throughout the life of this PO, based on department needs, available department funding, and mutual agreement of the parties.

PROJECT OBJECTIVE:

The objective of AOC to PO 084N2201934 is for Optum through the DTMB Contract, to assist MDCH with the development, support, maintenance and enhancement of MDCH Data Warehouse applications, which is an ongoing activity triggered by changes in federal and state regulations, evolving business needs, opportunities for improving business processes, continued software and hardware upgrades, and break fixes.

SCOPE OF WORK:

- The scope of this Revised SOW is to provide Data Warehouse Business Intelligence (BI) Services on an as needed basis to support maintain and execute enhancement projects of various sizes for the MDCH Data Warehouse set forth in this Revised SOW.
- Develop and maintain Data Warehouse applications that support MDCH's day-to-day will business operations.
- Resources will become familiar with DTMB personnel, MDCH's business processes, and DTMB's State Unified Information Technology Environment (SUITE) and MDCH Management policies and procedures.

TASKS:

REQUIRED TASKS

- Optum must attend orientation, security awareness training and any other relevant security and or confidentiality training requested by MDCH and/or DTMB. Optum staff must sign any appropriate agreements or training certifications.

EXAMPLES OF ONGOING and UPCOMING CONTRACTOR TASKS

(these tasks may change based on direction from the State)

Run production reporting on the data warehouse

Tasks include:

- Complete development of production reports to use the new CHAMPS data warehouse model. This includes reports needed for certification of CHAMPS, the Medicaid Statistical Information System (MSIS) extracts, and other production reports used to manage and evaluate Medicaid programs. Users of these reports include but are not limited to MDCH Medicaid management and staff, the State legislature, Federal agencies, counties and providers. Tasks include:
 - Map existing report data elements to corresponding fields in the new CHAMPS data warehouse.
 - Conduct Joint Application Design (JAD) sessions to finalize requirements with MDCH users.
 - Develop, test, and implement the CHAMPS version of the reports, including:
 - Michigan Assistance and Referral Service (MARS) reports
 - Centers for Medicare & Medicaid Services (CMS)-372s for Children's Waiver, Elderly and Disabled Waiver, and Habilitation Supports Waiver
 - MSIS
 - MA CAP reports. This report packet provides in-depth analysis of the capitation population, and revenues paid out through the capitation system for: Mental Health, Substance Abuse, and the Habilitation Supports Waiver. The report packet is used for Legislative reporting, Federal reporting, and to monitor expenditures by Providing Agency.
 - CMS-416 report and Early and Periodic Screening, diagnostic, and Treatment (EPSDT) letters
- Rewrite production reports to align with HIPAA 5010 and ICD-10 changes.
- Provide input as a pilot state for MSIS Plus. Work with CMS Developers to refine MSIS Plus requirements, record layouts and data definitions. Develop extract processes to align with defined MSIS Plus requirements, create internal system documentation, test files internally and with CMS, and implement approved processes.
- Provide training and support to Department of Technology, Management and Budget (DTMB) staff to facilitate report development and maintenance.
- Provide on-site expertise to incorporate newly-developed processes into the Business Objects environment, coordinate activities with the Consolidated Print Center, and integrate tools used to support data warehouse reporting.

Provide updated analytic, reporting, data mining, and web-based analytic tools to enhance the analytic capability of the staff

MDCH vision continues to include the use of ad-hoc analytic, On Line Analytical Processing (OLAP) and data mining tools. The OLAP and data mining tools are needed to examine our data from multiple

perspectives, which will allow identification of emerging trends and cost savings. This allows the ability to answer complex questions by performing multidimensional analysis across data sets and programs; and to drill up and down through successive layers of detail to uncover trends, relationships, and patterns for improved decision making.

Tasks include:

- Upgrade BI Query Version 9.0.2 to the latest patch release.
- Upgrade from Business Objects XI release 1 (no longer supported) to Business Objects XI release 3.

Identify and load additional data sets on the data warehouse

As new systems and data sources are developed that support the administration of the Medicaid program, and expansions are made to existing source systems, they will be loaded to the data warehouse to be integrated with existing MDCH data. This data could be Medicaid-specific, or could be non-Medicaid but provides a longitudinal view of beneficiaries and populations that could effect changes in Medicaid policy.

The process to add these data sets includes: defining requirements/which data tables/fields to include; determining whether or not to maintain history; developing load programs (using state standard Extract, Transform, Load (ETL) tool where possible); integrating new data with existing data in the BI Query model; and training MDCH users.

Tasks include:

- Add Maternal and Infant Health Program (MIHP) Infant Screener data plus additional data elements from new development to the Maternal Screener, in order to enhance MDCH's ability to evaluate the program, evaluate effectiveness of interventions, and assess outcomes.
- Add Children's Waiver data from multiple sources (including Paradox database that is no longer supported) for purposes of enrollment and CMS-372 reporting.
- Add Michigan Department of Human Services (MDHS) data needed for Medicaid reporting required by CMS, and/or establish MDCH access to the MDHS data through a data warehouse View (e.g., Poverty/Income, Race/Ethnicity).
- Add Home Help data.
 - New data is needed as a result of the new source application being developed to track payments. The Home Help payments were administered by MDHS until January, 2010. The new source application is being developed by MDCH to track the payments, and the corresponding data is needed in the warehouse to be included in the MSIS extracts.
 - New detailed assessment data. This data is maintained in an MDHS source system and is needed by MDCH in the data warehouse in order to perform analysis using the assessment data (e.g., predict impact of policy issues and changes, track beneficiaries, track Medicaid expenditures and ultimately, calculate rates).
- Add Medicare Modernization Act (MMA) Territory Batch Query (TBQ) data and develop processes for submission and receipt of corresponding data to/from CMS.
- Add Buy-In source data for comparison to Medicare identified on the eligibility records. This will be used to ensure completeness of the MMA submissions.
- Add Hospital and Long Term Care Cost Report data that currently resides in a system managed by Hewlett Packard (HP).
- Add MSIS submission file tables and corresponding data to the data warehouse for use in maintaining MSIS history, analysis and resubmission to CMS as necessary.
- Add Michigan Disease Surveillance System (MDSS) data. MDSS enables physicians and clinical laboratories to electronically report the occurrence or suspected occurrence of disease, conditions or infection required by the Michigan Communicable Disease Reporting Rule. Case reporting and management depends on the integration of data from multiple sources (e.g., laboratory results; patient information; disease condition, onset, symptoms, and hospitalization dates; and medication, treatment and clinical history). MDCH has an opportunity to improve disease tracking and monitoring of Medicaid beneficiaries through the integration of MDSS and the MDCH Data Warehouse.
- Add Newborn Screening data. This data was previously loaded to the data warehouse, but source system has been re-written, and corresponding data warehouse load processes are needed to capture data from the new system.

- Add Third Party Recovery data. Existing Medicaid payment recovery systems pull data from the warehouse for purposes of determining amounts to be recovered, but actual amounts recovered are not currently loaded back to the data warehouse. The addition of the recovery amounts to the data warehouse will provide a more complete and accurate representation of Medicaid payment amounts.
- Evaluate other data sources and add those that will benefit Michigan's Medicaid program or are needed to support reporting requirements.

Changes to existing data loads in order to stay current w/enhancements to source systems: MICIS data sets (OASIS, Nursing Home, MDS); CSHCS; MCIR; WIC

As source systems are rewritten to align with new requirements and technology, corresponding enhancements are required to the data warehouse in order to load and store new data elements and provide query and reporting access to the data. Source system changes may be driven by changes at the federal level, such as implementation of the OASIS-C and Minimum Data Set for Nursing Homes (MDS) 3.0 data sets and forms. Source system changes may also be driven by changes at the MDCH level, such as implementation of a new web-based application for Children's Special Health Care Services (CSHCS), which will include additions to the existing data set.

Tasks include:

- Develop, test and implement data warehouse enhancements as a result changes to source systems, including:
 - OASIS
 - Nursing Home
 - MDS
 - CSHCS
 - WIC (Women, Infants and Children)
 - MCIR (Michigan Care Improvement Registry)

Develop web applications to support Medicaid programs and processes

Tasks include:

- Develop, test and implement web applications to support the following waivers:
 - Children's Support Waiver (CSW)
 - Severely and Emotionally Disturbed (SED)

These web applications will provide:

- Automated workflow to process enrollment of waiver beneficiaries (including capture of demographic data not available in BRIDGES)
 - Tracking and reporting of waiver beneficiaries
 - Management and tracking of waiver "slots"
 - Integration with existing systems (e.g., BRIDGES, MDHS's Services Worker Support System [SWSS])
 - An interface to CHAMPS to provide data needed to process waiver payments.
- Add data for the following home and community based services waivers to be used by the corresponding web applications proposed to support the waivers:
 - CSW
 - SED
- Develop, test and implement an enhanced web-based application for MDCH's Managed Care Compliance Review Tool to replace the existing Access-based Compliance Review Tool application (the Tool). This will allow health plans and MDCH to update and access information through the web, rather than having to send the Access database back and forth to update information. The Tool summarizes all of the requirements of the Medicaid Comprehensive Health Plan contract, and State and Federal regulations, including fraud and abuse. MDCH conducts an annual compliance review of the designated criteria within the Tool. This Tool is used to document the Health Plans' compliance with contract requirements as identified in each criterion.

Create and manage METADATA for the MMIS IT Architecture, and provide BI-Administration capability for

security and model management.

Metadata and field mapping will provide information on the descriptions and uses of the data, flow of the data through the system, relationship to CHAMPS screens, and relationship to legacy data warehouse data elements, as well as the transformation and cleansing procedures. This information will be especially useful to analytic staff that may not be familiar with the operational detail of the data. It will also allow for the administration of the analytic tool environment and assessment of data integrity.

Implementation and enforcement of strong password rules for data warehouse users (90-day expiration, 8-character minimum length, require use of one special character and digit, no reuse of password during 120-day period, lock-out after 3 failed attempts) will increase security and privacy of data in the warehouse. User access will be allowed strictly through the use of Roles and Profiles.

Tasks include:

- Map records to data warehouse fields, including transformation rules and frequency of updates throughout the process (e.g., 837 records, National Council for Prescription Drug Programs (NCPDP), corresponding fields in CHAMPS screens, and use in reports).
- Create business definitions/data dictionary for each data element in the new CHAMPS data model.
- Create and/or modify BI-Query models to allow user-access to pre-defined data sets based on access approved through the security process. For example, access may include combinations such as the following:
 - Identified/Linked
 - De-identified/Linked
 - Identified/Linked & Unlinked
 - De-identified/Linked & Unlinked
- Implement roles and profiles (levels of security) for user access to the new CHAMPS data model.
- Implement strong password rules.
- Develop interface maps for both CHAMPS and the data warehouse.
- Create web-based application that contains all of the mapping documentation and allows users to look up definitions and/or data relationships.
- Create web-based application that contains all of the mapping documentation and allows users to look up definitions and/or data relationships.

Provide additional data integration across program areas and continue to enhance architecture to align with MITA initiative

Tasks include:

- Enhance architecture to align with MITA by developing data exchanges between the data warehouse and health plans. By making additional data available to health plans, these secure data exchanges promote efficient and effective data integration and sharing for purposes of improving health care outcomes for Medicaid beneficiaries. These data exchanges are adaptable and will be used to help drive the Michigan Health Information Exchange (HIE) initiatives.
- Expand the use of Medicaid data in the Common Citizen and Events Models to assess other events that may be contributing to successes or shortfalls in programs, interventions and outcomes. This will also allow MDCH to collaborate with other departments/agencies to improve Medicaid outcomes.
- Integrate Medicaid data with Corrections data to provide improved ability to identify the cross-population of Medicaid beneficiaries and prisoners, and therefore allow improved tracking and analysis of Medicaid beneficiaries.
- Integrate the data warehouse with other tool sets (e.g., Oracle, Access, ETL tools) to provide the ability to link to data that resides in source systems outside the data warehouse.
- Add new development to migrate data loads to the state's standard COTS ETL tool (DataStage) to improve data load processes, reduce risk and development/maintenance costs, and minimize differences between data warehouse and source system data.
- Evaluate and purchase tools to align technology framework with Medicaid Information Technology Architecture (MITA) standards (foster integrated, cross-functional business in order to improve administration of Michigan's Medicaid program).

Provide onsite analytic development for the various program models, and analytic tools

Tasks include:

- Update CHAMPS model-specific training manuals.
- Develop and deliver comprehensive training to educate end users on the use of the data based on the new CHAMPS and BRIDGES requirements. The implementation of these two systems resulted in substantial changes to the existing data warehouse and the need to integrate data from both post- and pre-implementation data models.
- Provide comprehensive training to help end users understand the business, and educate them on the relationship between the CHAMPS data and the Medicaid program. This will include development of materials for instructor-led classroom training as well as development of web-based training.
- Develop and deliver comprehensive training to educate developers on the new data warehouse structures and the use of data based on the new CHAMPS and BRIDGES requirements.
- Provide comprehensive training to help developers understand the business, and educate them on the relationship between the CHAMPS data and the Medicaid program.
- Provide first-line Help Desk Support to answer end user and developer questions related to the newly defined data models.
- Provide advanced analytic support and development at a level above the typical user's business and technical knowledge.
- Provide Business Objects training and support for development staff, related to developing production reports on the data warehouse.

Enhance the data warehouse as a result of CHAMPS and BRIDGES

Tasks include:

- Conduct Technical JAD sessions along with CNSI to redefine data extract layouts for the new CHAMPS data sets, as well as relationships between tables, referential integrity, key fields, etc.
- Conduct User JADs for CHAMPS Production model – to define usage requirements, data definitions, and alignment with CHAMPS screens.
- Complete development of various data structures to accommodate CHAMPS and BRIDGES data, based on input from JADs.
- Develop new data warehouse design to add CHAMPS identifiers as key fields in place of business keys, in order to eliminate duplicate records in the data warehouse and keep data synchronized between the two systems.
- Develop new BI Query Views in the data warehouse so that data presented to end users more closely aligns with what is displayed in the CHAMPS screens.
- Add and modify Metadata to reflect the CHAMPS and BRIDGES changes.
- Rewrite data warehouse structure and load programs as a result of changes being implemented in CHAMPS. As approved in the CHAMPS APD-Us, these changes include CHAMPS Change Requests (e.g., addition of new fields and new functionality) that result in a corresponding change to the data warehouse, as well as additional data warehouse testing during the approved CHAMPS implementation extensions.
- To ensure compliance with new Managed Care Organization (MCO) Drug Rebates mandated by Health Care Reform (PPACA – Patient Protection and Affordable Care Act) that went into effect 3/23/10, the following work is required:
 - Create, test and implement new process to provide an interface file to the State's PBM Pharmacy Benefits Management Services (PBM) (Magellan Medicaid Administration, Inc.) containing the MCO Drug claims (NCPDP encounters and Institution/Professional encounters for physician administered drug products) and MCO provider reference data. This data will then be used by the PBM to invoice manufacturers for CMS Federal Drug Rebates.
 - Utilize the NDC (National Drug Code):HCPCS (Healthcare Common procedure Coding System) crosswalk reference table to establish encounter edits and reports for purposes of ensuring the physician administered encounter claims are formatted properly for rebate invoicing.

- The following require redesign to accommodate the CHAMPS data warehouse changes:
 - MMA Part D submission files.
 - Eligible Months tables.
- Develop data warehouse structure and load programs to accommodate implementation of Medicaid encounter processing in CHAMPS.
- Develop and update end user queries and reports to use the newly defined models representing CHAMPS and BRIDGES data.
- Expand Situational Data in the warehouse. Situational data (fields not used directly to adjudicate a claim) are currently received from CHAMPS in a single, continuous, variable-size field, making it unusable by end users. This data will be parsed and stored in a format that makes it usable.
- Expand the data warehouse to accommodate HIPAA 5010.
- Perform ICD-10 gap analysis for MMIS and other Medicaid systems.
- Expand the data warehouse to accommodate ICD-10.
- Expand the data warehouse to include data needed to support electronic health record (EHR) (e.g., additional provider data, NLR data).
- Expand the data warehouse to include Prior Authorization data from CHAMPS.

Enhance the SURS process as a result of CHAMPS and BRIDGES

Tasks include:

- Develop new SURS extract process, which includes three parts:
 - Changes needed as a result of CHAMPS
 - Addition of Encounters to extract process
 - Replace quarterly extract with monthly extract.
- Develop new Audit programs as a result of CHAMPS.

Load Pharmacy data directly to the data warehouse

Tasks include:

- Convert all historical pharmacy claims and load to the new CHAMPS data warehouse structure (will be stored in the same data warehouse tables as fee-for-service (FFS) Claims and Encounters from CHAMPS). This process includes analysis of pharmacy data, mapping legacy data elements to the new data structure, and validation/resolution to synchronize data in the warehouse with PBM data.
- Design and develop processes to load pharmacy claims directly to both Staging and Production tables in the data warehouse (eliminate mainframe functionality and provide process to load data not adjudicated in CHAMPS). Includes implementation of data and file edits as well as processes to track receipt of files.
- Rewrite the CMS NDC Rebate data load to convert data from CMS cartridge tapes into electronic files and load directly to the data warehouse (eliminate mainframe functionality).
- Enhance the PBM data load process to include pharmacy paid claims enhancements. An example is the addition of data needed to further monitor and target outreach for purposes of increasing E-Prescribing in Michigan, and to collect information related to meaningful use.
- Load Pharmacy provider enrollment file from the State's PBM to the data warehouse.
- Rewrite NCPDP Encounter load programs to align with new CHAMPS structure and PBM data.
- Rewrite the Medicaid Health Plan Point-of-Sale (POS) pharmacy carve-out claim utilization extract to pull data from the new CHAMPS structure. This weekly process creates a file containing pharmacy carve-out claims for beneficiaries enrolled in each plan. The Medicaid Health Plans use the claim data for utilization and disease management programs.

Develop web-based Security application

Tasks include:

- Complete the Data Warehouse Security form/process in the web-based security application. User acceptance testing is currently underway in preparation for production implementation.
- At the request of Michigan Department of Technology, Management and Budget (DTMB), rewrite the internal SQL in the web-based security application to call external stored procedures to provide increased security.
- Develop the Security form/process for access to additional Medicaid applications, such as:

- Document Management System (FileNet)
- BRIDGES
- Medicaid Pharmacy Providers (MPP)
- SOLQ
- Buy-In
- MCIR (Immunization Registry)
- Lead
- Home Help
- MIHP
- CSHCS
- Post-Payment Recovery System
- Paternity/Casualty Recovery System
- CMS 1915(c) Waiver web site.
- Ambulatory Payment Classification (APC) web site (WebStrat)
- Integrate CHAMPS Customer Relationship Management (CRM subsystem) user information with DSA user database. This will provide MDCH with a complete picture of an individual's access across systems, via a single source application.
- Develop process to view an individual's approved/denied status across systems.
- Develop process to compare approved level of access in DSA with actual access in source system.
- Develop process to manage security of employee notifications from Human Resources (departures, position transfers, new hires) and/or integration with the Human Resource application. Actions include terminations of access, alerts to system owners, notifications to former and/or new managers, etc.
- Develop approval process for access to Medicaid data stored in the Cloud (Cloud Computing).

Enhance Data Warehouse Operability and Access

Analysis and development to optimize query and system performance will reduce data warehouse usage costs by improving efficiency and reducing storage space. Analysis of CHAMPS data warehouse usage will be performed to determine areas for improvement (e.g., rewrite queries, add statistics, and add/remove indexes to align with user access to data, compress databases). Solutions will then be identified, developed and implemented to address the identified areas for improvement.

Develop application to audit MDCH data warehouse usage. This application would provide web-based access to stored information such as identification of which users accessed which data and frequency of access.

Tasks include:

- Develop code to analyze databases and queries, identify potential areas for enhancement, develop and implement solutions.
- Develop web-based data warehouse audit application.

Develop Queries and Reports to support the Medicaid Program

The MDCH Data Warehouse is a critical component in the administration of the Medicaid Program. As such, it is frequently used as a source of information for audits, research, lawsuits, FOIA, and other similar requests for data. These requests typically require response within a short timeframe and require knowledge of both Medicaid and the data warehouse in order to provide required results within the defined timeframe.

Additionally, MDCH will be participating in the ARRA funded comparative effectiveness research (CER). As a participant of CER, MDCH will be providing data extracts related to specific proposals. MDCH will use the data warehouse to provide requested data.

Tasks include:

- Develop code to extract data as requested for CER.
- Develop code to extract data as needed for audits, research, lawsuits, FOIA, and other similar requests.
- Develop code to extract data for use in proof-of-concept of Prospective Payment editing and other

similar requests.

Develop and Configure Unique Client Identifier (UCI) Replacement

MDCH developed the UCI using custom code in 2001. The UCI links person-level records from one database to another by evaluating the available data elements such as name, address, IDs – beneficiary, client, consumer – to determine if a match exists. When a match exists, a UCI is assigned that is used in all the databases. Once linked, they remain linked unless manually removed.

Since 2001 when the UCI was first developed, there have been huge technology gains in master person technology. MDCH adopted a new COTS Product that is an independent system, yet fully integrated with the data warehouse, which will drastically reduce the amount of custom development required, speed integrations of additional sources, and reduce the ongoing operating cost of the system.

To enable these recent advances including enhanced person matching algorithms and new standards for identify management (including the required standards for HIE), the following Tasks are required.

Tasks include:

- Install and configure the new hardware and software.
- Implement the software to link all data sets currently included in UCI.
- Integrate the new product with other existing systems.
- Develop a Provider Index within the COTS product.

IT Classifications/Skills Set and Tasks:

The requirement is that the individual must possess the skills, knowledge, and experience required to perform the duties effectively and efficiently at the level specified in this Revised SOW, where DTMB and MDCH agrees that the individuals named in the PRICING SUMMARY of this Revised SOW for the applicable positions are deemed to have met these required levels of the indicated positions.

1. Data Warehouse Project Manager

Data warehouse project manager manages the integration and/or development and delivery of very large and complex deliverables directly to the customer. This position provides the primary interface between the Contractor, the State and third party providers.

- Establishes and manages the project plan, according to SUITE standards, including the development schedule, resource requirements and integration efforts of third party products. Periodically reports progress to State management.
- Motivates and directs project team; sets goals, objectives and priorities; assigns and reviews work.
- Acts as the primary interface with the State on issues regarding the project deliverable. Makes sure customer reviews are held with the customer user community and obtains sign-off on status reports and requirements.
- Makes sure approved methods, processes and tools are consistently used.
- Is accountable for meeting project schedule and results as well as for the State customer satisfaction and quality of the deliverables.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the BI tools available to them to support their own data needs where possible.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.
- Assists the MDCH Agency Project Manager with documentation for managing the data warehouse such as presentations, reports and Advanced Planning Documentation (APD) to be submitted to CMS for funding.

Required Experience

- 5+ Years Project Manager or Team Lead Experience.
- 5+ Years Business Intelligence Experience.
- 3+ Years Teradata DW Experience.

2. Data Warehouse Architect

Data warehouse architect designs total solutions involving multiple systems for large organizations. Solutions may use third party hardware and software. Participates/leads in the construction of models and pilot programs with senior level managers.

- Conducts model and pilot programs to test proposals or develop solutions to problems. Develops measurement criteria to evaluate programs and projects and develops or reviews estimates on technical aspects of projects.
- Responsible for data warehouse database design and providing technical direction to modelers, data analysts, ETL developers, and database administrators.
- Develops design proposals to meet MDCH needs
- Approves integrated systems design proposals for technical content.
- Monitors the implementation for technical correctness so that MDCH needs are met.
- Identifies, analyzes and evaluates alternative design solutions.

Required Experience

- 6+ Years Data Warehouse Architect and Model Experience.
- Teradata Version 12 or 13 Experience.
- Teradata Utilities Experience.
- 2+ Years Data Warehouse Administrator Experience.

3. Data Warehouse Database Administrator

Database administrator (DBA) is responsible for the availability, safety and usefulness of the MDCH data warehouse databases.

- Software Installation and database management system upgrades.
- Software upgrades to ensure the database is in compliance with critical security patches, or, software upgrades deemed necessary by the State.
- Working in conjunction with system administrators, server configuration to ensure that the entire database system is capable of providing the services needed.
- Performance monitoring to identify bottlenecks and places where throughput can be improved.
- Security administration to ensure that the database cannot be accessed by unauthorized parties or damaged by anyone.
- Configure access to the data warehouse and communication between the warehouse and other servers.
- Physical database design translates the logical database design to work optimally for the specific database environment.
- Working with MDCH data warehouse developers to establish standards and guidelines for access to MDCH data warehouse databases.
- Backup and Restore management to ensure that no data is lost and those backups can be restored in a timely manner.
- Work with MDCH data warehouse developers and MDCH clients to optimize their queries.

Required Experience

- 4+ Teradata Database Administrator Experience.
- 2+ Teradata Version 12 or 13 Experience.
- Teradata Utilities Experience.
- Teradata Manager Experience.
- SQL Assistant Experience.
- UNIX Experience.
- Oracle (9i, 10g, 11g) Experience.

4. Data Warehouse Database Administrator to serve as a Business Objects Administrator

The Data Warehouse Database Administrator to serve as a Business Objects Administrator is responsible for the availability, safety and usefulness of the MDCH Business Objects (BO) environment.

- Maintaining all BO user accounts and controlling user's access to MDCH BO reports.
- Maintaining all ODBC connections to respective data warehouse databases.
- Maintaining print queues and coordinates printing related activities with Consolidate Print Center (CPC).
- Publish Crystal Reports into Business Objects.
- Scheduling reports and verification reports ran at scheduled date/time.
- Coordinating/executing re-runs of reports when required as corrective action to issues.

- Troubleshooting any issues with Reports or the Business Objects Application (Technical support to End Users).
- Central point of contact for all questions related to the BO environment.
- Meeting with MDCH customers to discuss supporting activities. (Bi-weekly DW Projects meeting)
- Maintain web based end user training manual.
- Provide one on one support for DTMB developers and end users to assist them in accomplishing their data reporting needs.
- Oversee Business Objects enterprise environment changes, working with other departments to ensure modifications to the BO environment are properly planned and tested.

Required Experience

- 4+ Years Business Objects Administrator Experience.
- 3+ Years Business Objects Universe Development Experience.
- Business Intelligence Tools: Business Objects, Micro Strategy, Crystal Reports.
- Business Objects Version XI r2 and 3.1 Experience.
- Business Objects WEBi and InfoView Training Experience.
- 3+ Years Business Objects Report Developer.

5. Data Warehouse Developer Senior

Data warehouse developers perform application development tasks in support of building business intelligence applications and integrating data warehouse resources into other MDCH applications. In addition they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.
- Work with developers and end user query developers to design and improve database queries.
- Train developers in how best to design queries for a specific database.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.

Required Experience

- 6+ Years SQL Development Experience.
- Business Analyst Experience.
- SQL and Performance Tuning Experience.
- Teradata Utilities Experience
- SQL Assistant Experience.
- UNIX Shell Scripting Experience.

6. Data Warehouse Developer Junior

Data warehouse developers perform application development tasks in support of building business Intelligence applications and integrating data warehouse resources into other MDCH applications. In addition they provide database expertise to other application developers in close collaboration with DBAs and other data management staff.

- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.
- Work with developers and end user query developers to design and improve database queries.
- Train developers in how best to design queries for a specific database.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers.

Required Experience

- 2+ Years SQL Development Experience.
- Teradata Utilities Experience.

- SQL Assistant Experience.

7. Data Warehouse Designer/Modeler

Data warehouse designer is responsible for the layout and navigability of a database. This involves defining the tables, keys and relationships that will allow an application to retrieve and update data correctly and efficiently.

- Working with end users and developers to understand the data needs of MDCH clients.
- Documenting the MDCH data warehouse data involves including definitions, constraints and access needs.
- Creating and maintaining MDCH data warehouse logical designs, including Entity Relationship diagrams, which illustrate what data will be stored, how it is organized, how it can be retrieved (keys) and how it relates to other data in the database.
- Creating and maintaining MDCH data warehouse data definition language (DDL) that can be used to create and update the database.
- Working with the MDCH Data Warehouse DBA and ETL developers, modify the logical design to create a physical design most suited to the database environment and the applications that will use it.
- Work with MDCH Data Warehouse ETL developers and DBA to create and maintain database design standards.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their report development related tasks may include:
- Perform application development tasks in support of building business intelligence applications and integrating data warehouse resources into other Agency applications. Their development related activities may include tasks such as:
- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
- SQL development.
- Work with developers and end user query developers to design and improve database queries.
- Train developers in how best to design queries for a specific database.

Required Experience

- 5+ Years Data Warehouse Modeling Experience.
- 5+ Years of SQL Development.
- Data Warehouse Architect Experience.

8. Data Warehouse Business Intelligence Report Developer

Data warehouse Business Intelligence Report Developer is expected to be able to work with agency requestors to define and develop new reports, and provide training and technical support to both DTMB developers and end user query developers.

- Working with end user requestors to understand their data needs and create and implement solutions to those needs.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the BI tools available to them to support their own data needs where possible.
- Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the data warehouse.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 5+ Years of Business Objects Report Development Experience.
- 5+ Years of SQL Development.
- Business Objects universe development experience.
- Business Analyst Experience.

9. Data Warehouse Business Intelligence Analyst Senior

Data warehouse business intelligence/analyst works with end users to provide information in a number of

different ways.

- Running JAD sessions to understand what data is needed and how it is likely to be used.
- Creating ad-hoc queries to answer specific user questions.
- Program design and specification.
- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Supporting end user to enable them to create their own queries and reports as needed.
- Identify data problems and work with developers to correct them.
- Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
- Organize and run user groups to encourage self-support among end user and DTMB query and other BI application developers.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
- Working with end user requestors to understand their data needs and create and implement solutions to those needs.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the BI tools available to them to support their own data needs where possible.
- Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the data warehouse.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 6+ Years Project Lead/BI Analyst Experience.
- 4+ Years Business Objects Report Development.
- Business Objects Training Experience.
- SQL Assistant Experience.

10. Data Warehouse Business Intelligence Analyst Junior

Data warehouse business intelligence/analyst works with end users to provide information in a number of different ways.

- Running JAD sessions to understand what data is needed and how it is likely to be used.
- Creating ad-hoc queries to answer specific user questions.
- Program design and specification.
- Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
- Supporting end user to enable them to create their own queries and reports as needed.
- Identify data problems and work with developers to correct them.
- Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
- Organize and run user groups to encourage self-support among end user and DTMB query and other BI application developers.
- Work with agency requestors to define and develop new queries, and provide training and technical support to both DTMB developers and end user query developers. Their tasks may include:
- Working with end user requestors to understand their data needs and create and implement solutions to those needs.
- Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the BI tools available to them to support their own data needs where possible.
- Develop and present training classes for DTMB developers to better understand how to use the BI development tools to create and implement reporting solution using the data warehouse.
- Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

Required Experience

- 2+ Years Project Lead/BI Analyst Experience.
- 1+ Years Business Objects Report Development.

11. Data Warehouse Help Desk Analyst

Help desk staff provide first line support for end users and developers.

- Manages MDCH Data Warehouse mailbox.
 - Assesses user identified issues and provides guidance for resolution.
 - Directs unresolved problems and reports to appropriate staff, if necessary.
 - Tracks and analyzes problem occurrences and resolutions.
- Conducts data warehouse user group training.
- Develops training materials.
- Assists with query/report development.
- Provides user assistance with BI Services tool(s), model/database, business knowledge and recommendations for efficiency and solutions to meet user business needs.

Required Experience

- 3+ Years of Data Warehouse Help Desk Analyst Experience.
- Experience in supporting the end users in accessing the data warehouse and effectively utilize the desktop tools.

12. Web Developer

A Web Developer is responsible for designing and developing web-based applications that interact with and utilize the data warehouse to provide MDCH users with highly interactive, easy to use web-based BI applications.

- Defining and developing applications that rely on unique web-based technology and tools, and that will conform to standards defined by DTMB for user interface and usage of the data warehouse.
- Defining the web application user interface, business rules, database access and data warehouse access, and determining any data sources that need to be imported into the data warehouse for web application operation.
- Producing technical specification documents to review the web application with the user, and conducting JAD sessions to revise and finalize technical specifications.
- Prototyping of web application pages for user review and approval.
- Producing accurate and complete data mapping documents
- Performing user acceptance testing with users and DTMB to confirm that new web applications perform per specifications, and making adjustments to the web application as required
- Maintaining a development and staging environment for the development and testing of enhancements and updates to the web application.

Required Experience

- 5+ Years of Data Warehouse Web Developer Experience.
- Web development: HTML, JavaScript, PHP, Perl.

13. Subject Matter Expert (SME)

A Subject Matter Expert (SME) will be responsible for providing specialized, in-depth knowledge of a business area(s) such as Medicaid, 5010 HIPAA transactions, Pharmacy, ICD-10 and technology solutions.

- Leading or actively participating in work-groups with the need for specialized knowledge.
- Providing guidance on how their area of expertise can resolve an organizational need, and actively participates in all phases of a project/initiative by sharing their knowledge, expertise and ideas.
- Defining technology and business solutions based on thorough understanding of business processes and policies.
- Reviewing, helping re-engineer, or creating new processes and policies,
- Evaluating and defining technology requirements and solutions.
- Defining business needs, and identifying and recommending the most appropriate solutions.
- Providing documentation such as forms, manuals, correspondence, and procedures

- Understanding, articulating, and implementing best practices related to their area of expertise.

Required Experience

- 5+ Years of Data Warehouse design and development of BI applications using Business Object Toolsets and other BI technologies.
- Experience in recommending appropriate tools and technology required to meet immediate and long-term business and individual self-service reporting needs.

Transition Plan:

Not Applicable.

DELIVERABLES:

The deliverables and tasks agreed to in this Revised SOW shall comply with the following approval process:

APPROVAL OF DELIVERABLES, IN GENERAL:

(a) All Deliverables (Physical Deliverables, Written Deliverables, and Service Deliverables) require formal written approval by the State, in accordance with the following procedures. Formal approval by the State requires that the Deliverable be confirmed in writing by the State to meet its specifications, which will include the successful completion of Testing as applicable in Section 6.3, to be led by the State with the support and assistance of Contractor. The parties acknowledge that the approval process set forth herein will be facilitated by ongoing consultation between the parties, visibility of interim and intermediate Deliverables and collaboration on key decisions.

(b) The State's obligation to comply with any State Review Period is conditioned on the timely delivery of Deliverables being reviewed.

(c) Prior to commencement of its review or testing of a Deliverable, the State may inspect the Deliverable to confirm that all components of the Deliverable have been delivered without material deficiencies. If the State determines that the Deliverable has material deficiencies, the State may refuse delivery of the Deliverable without performing any further inspection or testing of the Deliverable. Otherwise, the review period will be deemed to have started on the day the State and Contractor receive the Deliverable and agree that the Deliverable is ready for use and, where applicable, Contractor has provided certification in accordance with Section 6.3(a).

(d) The State will approve in writing a Deliverable upon confirming that it conforms to and, performs in accordance with, its specifications without material deficiency. The State may, but shall not be required to, conditionally approve in writing a Deliverable that contains material deficiencies if the State elects to permit Contractor to rectify them post-approval. In any case, Contractor will be responsible for working diligently to correct within a reasonable time at Contractor's expense all deficiencies in the Deliverable that remain outstanding at the time of State approval.

(e) If, after three (3) opportunities (the original and two repeat efforts), Contractor is unable to correct all deficiencies preventing Final Acceptance of a Deliverable, the State may: (i) demand that Contractor cure the failure and give Contractor additional time to cure the failure at the sole expense of Contractor; or (ii) keep any resulting Contract(s) in force and do, either itself or through other parties, whatever Contractor has failed to do, in which event Contractor shall bear any excess expenditure incurred by the State in so doing beyond the Contract(s) price for such Deliverable and will pay the State an additional sum equal to ten percent (10%) of such excess expenditure to cover the State's general expenses provided the State can furnish proof of such general expenses; or (iii) terminate the particular Statement of Work for default, either in whole or in part by notice to Contractor provided Contractor is unable to cure such breach. Notwithstanding the foregoing, the State shall not use, as a basis for exercising its termination rights under this Section, deficiencies discovered in a repeat State Review Period that could reasonably have been discovered during a prior State Review Period.

(f) The State, at any time and in its reasonable discretion, may halt the testing or approval process if such process reveals deficiencies in or problems with a Deliverable in a sufficient quantity or of a sufficient severity as to make the continuation of such process unproductive or unworkable. In such case, the State may return the applicable Deliverable to Contractor for correction and re-delivery prior to resuming the testing or approval process.

PROCESS FOR APPROVAL WRITTEN DELIVERABLES:

The State Review Period for Written Deliverables will be the number of days set forth in the applicable Statement of Work/Purchase Order following delivery of the final version of the Deliverable (failing which the State Review Period, by default, shall be five (5) Business Days for Written Deliverables of one hundred (100) pages or less and ten (10) Business Days for Written Deliverables of more than one hundred (100) pages). The duration of the State Review Periods will be doubled if the State has not had an opportunity to review an interim draft of the Written Deliverable prior to its submission to the State. The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or

describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within five (5) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF SERVICE DELIVERABLES:

The State Review Period for approval of Service Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty- five (45) Business Days for a Service Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

PROCESS FOR APPROVAL OF PHYSICAL DELIVERABLES:

The State Review Period for approval of Physical Deliverables is governed by the applicable Statement of Work/Purchase Order (failing which the State Review Period, by default, shall be forty-five (45) continuous Business Days for a Physical Deliverable). The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Deliverable (or at the State's election, subsequent to approval of the Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within thirty (30) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

ACCEPTANCE CRITERIA:

As agreed upon through Statement of Work ITB-TH-00014, the T&M based services shall be accepted based upon time sheets submitted by Contractor and approved by the State for actual hours of Services performed.

PROJECT CONTROL AND REPORTS:

A monthly progress report must be submitted to DCH and DTMB Project Managers throughout the life of this project. The report may be submitted with the billing invoice. Each monthly progress report must contain the following information:

- **Hours:** Indicate the number of hours expended during the past month, and the cumulative total to date for the project.
- **Tasks accomplished:** Indicate what projects have been worked on, and what was completed during the current reporting period.
- **Planned Tasking:** Describe activities to be accomplished during the next reporting period.
- **Funds:** Indicate the amount of funds expended during the current reporting period, and the cumulative total to date for the project.
- **Issues:** Indicate major issues/risks/changes, real or perceived, in relation to the scope of this SOW, and recommend resolutions

SPECIFIC AGENCY STANDARDS:

Agency standards, if any, in addition to DTMB standards.

PAYMENT SCHEDULE:

Payment will be made on an all time and materials (hourly based) must submit time sheets with all invoices and include purchase order basis. DTMB will pay CONTRACTOR upon receipt of properly completed invoices which shall be submitted to the billing address on the State issued purchase order not more often than monthly. DTMB Accounts Payable area will coordinate obtaining Agency Project Manager and DTMB Project Manager approvals. All invoices should reflect actual work completed by payment date, and must be approved by the Agency Project

Manager and DTMB Project Manager prior to payment. The invoices shall describe and document to the State's satisfaction a description of the work performed the progress of the project, and fees.

Payment shall be considered timely if made by the DTMB within forty-five (45) days after receipt of properly completed invoices.

PRICING SUMMARY

Pricing for the 6 month extension will remain consistent with the pricing applicable to the current positions being provided to MDCH under the DTMB Contract prior to the effective date of this Revised SOW, where such pricing was contained in the Optum Proposal dated December 19, 2011, as amended by subsequent letter amendments and where, for administrative convenience, the named individuals, their titles and hourly rates for Services performed during the six (6) month period covered by this Revised SOW are set forth below:

TABLE 1

Resource Name	Position	Hourly Rate	Estimated Maximum Hours	Estimated Dollars
BARNSTEAD, JEANNE	Data Warehouse Project Manager	\$ 144.00	1,040	\$ 149,760
BHOGAL, PRADIP	Data Warehouse Developer Junior	\$ 136.00	1,040	\$ 141,440
BIEBER, MONTY	Data Warehouse BI Analyst Senior	\$ 136.00	1,040	\$ 141,440
BOAK, KATHY	Data Warehouse Help Desk Analyst	\$ 136.00	1,040	\$ 141,440
CAREY, TIM	Data Warehouse Project Manager	\$ 144.00	1,040	\$ 149,760
CHITIBOMMA, RAVI	Data Warehouse Developer Junior	\$ 136.00	1,040	\$ 141,440
CHRISTIANSEN, JEREMY	Data Warehouse Architect	\$ 140.00	1,040	\$ 145,600
COBURN, DEB	Data Warehouse BI Analyst Junior	\$ 136.00	1,040	\$ 141,440
ELIAS, CHRIS	Subject Matter Expert MPI	\$ 265.00	430	\$ 113,950
FOTH, CASEY	Subject Matter Expert MPI	\$ 265.00	210	\$ 55,650
FRANEY, JOSH	Data Warehouse Developer Senior	\$ 136.00	100	\$ 13,600
HOMER, DANIEL	Data Warehouse Developer Senior	\$ 136.00	1,040	\$ 141,440
JACOB, DANA	Data Warehouse BI Analyst Junior	\$ 136.00	1,040	\$ 141,440
JONES, PHILLIP	Data Warehouse Developer Senior	\$ 136.00	100	\$ 13,600
KRISHNAMOORTHY, RAJA	Subject Matter Expert MPI	\$ 265.00	240	\$ 63,600
MAKI, MARY JO	Data Warehouse BI Analyst Senior	\$ 136.00	1,040	\$ 141,440
MCEVOY, JAMES	Data Warehouse Developer Senior	\$ 136.00	1,040	\$ 141,440
MUKHTAR, MAZHAR	Data Warehouse Web Developer Senior	\$ 120.00	1,040	\$ 124,800
NURENBERG, ANN	Data Warehouse BI Analyst Senior	\$ 136.00	1,040	\$ 141,440
OLSON, LAURA	Data Warehouse Developer Senior	\$ 136.00	1,040	\$ 141,440
PEDERLA, ANUSH	Data Warehouse Web Developer Senior	\$ 120.00	1,040	\$ 124,800
PEDINEKALUVA, SIVA	Data Warehouse Database Administrator	\$ 136.00	1,040	\$ 141,440
ROTHAN, TOM	Data Warehouse Designer/Modeler	\$ 136.00	1,040	\$ 141,440
SABIR, MOHAMMAD	Data Warehouse Developer Junior	\$ 136.00	1,040	\$ 141,440
SCHUSTER, JOHN	Data Warehouse Developer Senior	\$ 136.00	1,040	\$ 141,440
SHAH, AMI	Data Warehouse Web Developer Junior	\$ 80.00	1,040	\$ 83,200
SNYDER, JOHN	Data Warehouse BI Analyst Junior	\$ 136.00	1,040	\$ 141,440
SUTHERLAND, DOUG	Data Warehouse Developer Senior	\$ 136.00	100	\$ 13,600
TANNEERU, VISHAL	Data Warehouse BI Report Developer	\$ 80.00	1,040	\$ 83,200
TATE, JEFF	Subject Matter Expert Champs	\$ 178.00	1,040	\$ 185,120
VARDE, ARUN	Data Warehouse Web Developer Senior	\$ 120.00	1,040	\$ 124,800
WADDELL, DANIEL	Data Warehouse Developer Senior	\$ 136.00	100	\$ 13,600
WILLIAMS, GEOFFREY	Data Warehouse Developer Junior	\$ 136.00	1,040	\$ 141,440
Total Estimated Hours and Dollars			28,320	\$ 3,863,120

ADDITIONAL TIME & MATERIALS LABOR RATES FOR PROFESSIONAL SERVICES:

To the extent the parties agree that certain specific services must be provided on a time and materials basis, such services must be provided at the Labor Rates (Not to Exceed Hourly Rate cost column). Future amendments to this Revised Statement of Work may utilize this rate structure, as agreed between the Contractor and State. Additionally the Contractor may utilize the rates in order to provide the State with a not to exceed time and materials price. Prices quoted herein will be used for change, addition, and / or deletion of work associated with this Revised SOW. The Estimated Hours is provided below as an estimate only and is not meant to preclude or limit the State from requesting a resource/staffing mix for future projects that exceeds the hours estimate for a specific Staffing Category as long as the Total Additional Professional Services Cost is not exceeded.

TABLE 2

Staffing Category	Not to Exceed Hourly Rate	Estimated Hours	Total Estimated Price (Multiply NTE Hourly Rate x Estimated Hours)
Data Warehouse Project Manager	\$144.00	2,000	\$288,000.00
Data Warehouse Architect	\$140.00	1,000	\$140,000.00
Data Warehouse Database Administrator	\$136.00	1,000	\$136,000.00
Data Warehouse Developer Junior	\$136.00	3,000	\$408,000.00
Data Warehouse Developer Senior	\$136.00	3,000	\$408,000.00
Data Warehouse Designer/Modeler	\$136.00	2,000	\$272,000.00
Data Warehouse Business Intelligence Report Developer	\$85.00	2,000	\$170,000.00
Data Warehouse Business Intelligence Analyst Junior	\$136.00	3,000	\$408,000.00
Data Warehouse Business Intelligence Analyst Senior	\$136.00	3,000	\$408,000.00
Data Warehouse Help Desk Analyst	\$136.00	1,000	\$136,000.00
Data Warehouse Web Developer Junior	\$80.00	1,206	\$96,480.00
Data Warehouse Web Developer Senior	\$120.00	2,000	\$240,000.00
Data Warehouse Subject Matter Expert	\$195.00	1,000	\$195,000.00
Subject Matter Expert HEDIS	\$250.00	800	\$200,000.00
Subject Matter Expert MPI	\$265.00	1,000	\$265,000.00
Total Additional Professional Services Cost	N/A	27,006	\$3,770,480.00

EXPENSES:

The State will NOT pay for any travel expenses, including hotel, mileage, meals, parking, etc.

PROJECT CONTACTS:

The MDCH Project Manager is:

Cynthia Green-Edwards
Director, Office of Medicaid Health Information Technology
Michigan Department of Community Health (MDCH)
500 Pine Street, Capitol Commons Center
Lansing, Michigan 48933
517-241-9998
EDWARDSC@michigan.gov

The DTMB Project Manager is:

Carmen Redwine
Business Relationship Manager - MDCH
Michigan Department of Technology Management and Budget (DTMB)
Agency Services – Department of Community Health (DCH)
300 East Michigan Avenue, Chandler Building
Lansing, MI
517-241-2925
RedwineC1@michigan.gov

The DTMB Contract Administrator for this project is:

Joseph Kelly
Michigan Department of Technology, Management and Budget
DTMB Procurement - Stevens T. Mason Building – 2nd Floor
530 W. Allegan Street
Lansing, MI 48933
517-373-3993
Email: kellyj11@michigan.gov

AGENCY RESPONSIBILITIES:

- The State may discontinue the services of any vendor(s) -supplied staff with two weeks' notice without cause at any time.
- The State will provide access to networks, servers, software license (as appropriate), etc. needed for Vendor to perform tasks required for this Revised SOW.

LOCATION OF WHERE THE WORK IS TO BE PERFORMED:

The work is to be performed, completed, and managed at locations determined by the Vendor, but with the expectation that personnel will be available, on hand and able to complete emergency tasks. In addition, onsite support may be needed and will be identified at such time.

EXPECTED CONTRACTOR WORK HOURS AND CONDITIONS:

Contractor(s) must provide services during normal working hours (Monday through Friday, 7:00 a.m. to 6:00 p.m. ET.) and possible night and weekend hours depending on position and project requirements. 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. Contractor(s) shall observe the same standard holidays as State employees. The State does not compensate for holiday pay. Contractor(s) will not be reimbursed for travel expenses or travel time. No overtime will be permitted.

RIGHT TO OWNERSHIP:**State intends to own the Software at the end of the Contract**

- Ownership of Work Product by State. All Deliverables shall be owned by the State and shall be considered works made for hire by the Contractor for the State. The State shall own all United States and international copyrights, trademarks, patents or other proprietary rights in the Deliverables.
- Vesting of Rights. The Contractor agrees to assign, and upon creation of each Deliverable automatically assigns, to the State, ownership of all United States and international copyrights, trademarks, patents, or other proprietary rights in each and every Deliverable, whether or not registered by the Contractor, insofar as any such Deliverable, by operation of law, may not be considered work made for hire by the Contractor for the State. From time to time upon State's request, the Contractor and/or its personnel shall confirm such assignment by execution and delivery of such assignments, confirmations of assignment, or other written instruments as the State may request. The State shall have the right to obtain and hold in its own name all copyright, trademark, and patent registrations and other evidence of rights that may be available for Deliverables.

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

January 28, 2013

CHANGE NOTICE NO. 17
 to
CONTRACT NO. 071B1300138
 between
THE STATE OF MICHIGAN
 and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Joe Kelly	517-373-3993	Kellyj11@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
<u>EXTEND CONTRACT EXPIRATION DATE</u>	<u>EXERCISE CONTRACT OPTION YEAR(S)</u>	<u>EXTENSION BEYOND CONTRACT OPTION YEARS</u>	<u>LENGTH OF OPTION/EXTENSION</u>	<u>EXPIRATION DATE AFTER CHANGE</u>
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		
<u>VALUE/COST OF CHANGE NOTICE:</u>		<u>ESTIMATED REVISED AGGREGATE CONTRACT VALUE:</u>		
\$280,000.00		\$16,672,528.00		
Effective Immediately, the following resource is incorporated into this contract, based on the State’s work requests ITB-JK-DW-0011: Named Resource: Ravichand Kollia rate of \$140.00/hr. not to exceed 2000 hours State’s Work Request: #ITB-JK-DW-0011 for One (1) Data Warehouse Architect. Vendor’s Work Request Response: Dated January 10, 2013 to work request ITB- JK-DW-0010.				
This contract is also hereby INCREASED by \$280,000.00. All other terms, conditions, specifications and pricing remain the same. Per vendor and agency agreement and the approval of DTMB Procurement.				

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

January 28, 2013

CHANGE NOTICE NO. 16
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Joe Kelly	517-373-3993	Kellyj11@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		
VALUE/COST OF CHANGE NOTICE:		ESTIMATED REVISED AGGREGATE CONTRACT VALUE:		
\$130,000.00		\$16,392,528.00		
Effective Immediately, the following resource is incorporated into this contract, based on the State's work requests ITB-JK-DW-0011:				
Named Resource: Amarnath Kogantiat a rate of \$125.00/hr. not to exceed 1040 hours				
State's Work Request: #ITB-JK-DW-0011 for One (1) Data Warehouse Developer.				
Vendor's Work Request Response: Dated January 10, 2013 to work request ITB- JK-DW-0011.				
This contract is also hereby INCREASED by \$130,000.00. All other terms, conditions, specifications and pricing remain the same. Per vendor and agency agreement and the approval of DTMB Procurement.				

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

December 7, 2012

CHANGE NOTICE NO. 15
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Joe Kelly	517-373-3993	Kellyj11@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		
VALUE/COST OF CHANGE NOTICE:		ESTIMATED REVISED AGGREGATE CONTRACT VALUE:		
\$280,000.00		\$16,262,528.00		
Effective November 28, 2012, the following resources are incorporated into this contract, based on the State's work requests ITB-JK-DW-0005: Named Resource: Vigneshwar Reddymasu at a rate of \$140.00/hr. not to exceed 2000 hours State's Work Request: #ITB-JK-DW-0005 for One (1) Data Warehouse Modeler. Vendor's Work Request Response: Dated November 8, 2012 to work request ITB- JK-DW-0005.				
This contract is also hereby INCREASED by \$280,000.00. All other terms, conditions, specifications and pricing remain the same. Per vendor and agency agreement and the approval of DTMB Procurement.				

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

CHANGE NOTICE NO. 14
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Joe Kelly	517-373-3993	Kellyj11@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:							
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE			
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>					
VALUE/COST OF CHANGE NOTICE:		ESTIMATED REVISED AGGREGATE CONTRACT VALUE:					
\$0.00		\$15,982,528.00					
Effective immediately, the following resources are incorporated into this contract, based on the State's work request ITB-TH-00014: Named Resource: Raja Krishnamoorthy – Subject Matter Expert MPI (PM focus) Casey Foth – Subject Matter Expert MPI Jeremy Valcourt – Subject Matter Expert MPI Tim Carey - Data Warehouse Project Manager							
All other terms, conditions, specifications and pricing remain the same. Per vendor and agency agreement and the approval of DTMB Procurement.							

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

CHANGE NOTICE NO. 13
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Joe Kelly	517-373-3993	Kellyj11@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:				
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>		
VALUE/COST OF CHANGE NOTICE:		ESTIMATED REVISED AGGREGATE CONTRACT VALUE:		
\$530,000.00		\$15,982,528.00		
Effective November 5, 2012, the following resources are incorporated into this contract, based on the State's work requests ITB-JK-DW-0003 and ITB-JK-DW-0004:				
Named Resource: Kiran Vootkuri at a rate of \$135.00/hr not to exceed 2000 hours				
State's Work Request: #ITB-JK-DW-0003 for One (1) Data Warehouse Senior Developer.				
Vendor's Work Request Response: Dated October 2, 2012 to work request ITB- JK-DW-0003.				
Named Resource: Dheeraj Kumar at a rate of \$130.00/hr not to exceed 2000 hours				
State's Work Request: #ITB-JK-DW-0004 for One (1) Data Warehouse Senior Developer.				
Vendor's Work Request Response: Dated October 2, 2012 to work request ITB- JK-DW-0004.				

This contract is also hereby INCREASED by \$530,000.00. All other terms, conditions, specifications and pricing remain the same. Per vendor and agency agreement and the approval of DTMB Procurement.

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

CHANGE NOTICE NO. 12
to
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR				
BUYER	DTMB	Joe Kelly	517-373-3993	Kellyj11@michigan.gov

CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
December 21, 2010	December 20, 2015	5, 2 year	December 20, 2015
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MIDEAL PARTICIPANTS
<input type="checkbox"/> P-card	<input type="checkbox"/> Direct Voucher (DV)	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:						
EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/>	<input type="checkbox"/>				
VALUE/COST OF CHANGE NOTICE:			ESTIMATED REVISED AGGREGATE CONTRACT VALUE:			
\$250,000.00			\$15,452,528.00			
Effective September 30, 2012, the following resource is incorporated into this contract, based on the State's work request ITB-JK-0001:						
Named Resource: Jagdish Kannappan						
State's Work Request: #ITB-JK-0001 for One (1) Data Warehouse BI ETL Developer.						
Vendor's Work Request Response: Dated September 24, 2012 to work request ITB-JK-0001.						
This contract is also hereby INCREASED by \$250,000.00. All other terms, conditions, specifications and pricing remain the same. Per vendor and agency agreement and the approval of DTMB Procurement.						

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
PROCUREMENT
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48913

July 19, 2012

CHANGE NOTICE NO. 11
To
CONTRACT NO. 071B1300138
Between
THE STATE OF MICHIGAN
And

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR:				
BUYER:	DTMB	Joe Kelly	(517) 373-3993	kellyj11@michigan.gov

INITIAL CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL TERM	EFFECTIVE DATE	INITIAL EXPIRATION DATE	AVAILABLE OPTIONS
5 years	December 21, 2010	December 20, 2015	5, 2 year options
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MIDEAL PARTICIPANTS
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:	
OPTION EXERCISED: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES	IF YES, NEW EXPIRATION DATE:
Effective immediately, the following resource is incorporated into this contract, based on the State's work request ITB-TH-00017:	
Named Resource: Amarnath Koganti	
State's Work Request: #ITB-TH-00017 for One (1) Data Warehouse BI ETL Developer.	
Vendor's Work Request Response: Dated June 27, 2012 to work request ITB-TH-00017.	
All other terms, conditions, specifications and pricing remain the same.	
VALUE/COST OF CHANGE NOTICE:	\$130,000.00

ESTIMATED AGGREGATE CONTRACT VALUE:	\$14,121,088.00
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STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
PROCUREMENT
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48913

July 17, 2012

CHANGE NOTICE NO. 10
To
CONTRACT NO. 071B1300138
Between
THE STATE OF MICHIGAN
And

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR:				
BUYER:	DTMB	Joe Kelly	(517) 373-3993	kellyj11@michigan.gov

INITIAL CONTRACT SUMMARY:

DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL TERM	EFFECTIVE DATE	INITIAL EXPIRATION DATE	AVAILABLE OPTIONS
5 years	December 21, 2010	December 20, 2015	5, 2 year options
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card	<input type="checkbox"/> Direct Voucher (DV)	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:

OPTION EXERCISED: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES		IF YES, NEW EXPIRATION DATE:	
Effective immediately, this Contract is INCREASED by \$2,204,000.00 to cover the cost of the following resources for year 2.			
DW Project Manganer	Melissa Jourden	\$144.00	
DW Architect	Ray Desmeules	\$160.00	
DW Modeler	Lee Ritchie	\$140.00	
DW Database Administrator	Mohommod Khan	\$136.00	
BO Administrator	Murali Mahadevan	\$146.00	
DW Business Analyst	Jim Davis	\$140.00	
DW Developer	Bruce Grant	\$136.00	
DW Developer	Sai Swaroop Mudduluru	\$100.00	
1300138			

All other terms, conditions, specifications, and pricing remain the same.

VALUE/COST OF CHANGE NOTICE:

\$2,204,000.00

ESTIMATED AGGREGATE CONTRACT VALUE:

\$16,195,088.00

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
PROCUREMENT
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48913

July 11, 2012

CHANGE NOTICE NO. 9
To
CONTRACT NO. 071B1300138
Between
THE STATE OF MICHIGAN
And

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917	David Wieber	David.wieber@optum.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR:				
BUYER:	DTMB	Joe Kelly	(517) 373-3993	kellyj11@michigan.gov

INITIAL CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL TERM	EFFECTIVE DATE	INITIAL EXPIRATION DATE	AVAILABLE OPTIONS
5 years	December 21, 2010	December 20, 2015	5, 2 year options
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:	
OPTION EXERCISED: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES	IF YES, NEW EXPIRATION DATE:
Effective immediately, this Contract is INCREASED by \$1,666,560.	
All other terms, conditions, specifications, and pricing remain the same.	
Per agency (ITB-TH-00016) request for Department of Human Services Data Warehouse Project, vendor agreement (dated June 19, 2012) and State selection of Madhu Gajula and Manju Sabbaiah for 3 years at 1984 hours per year, and DTMB Procurement approval.	
VALUE/COST OF CHANGE NOTICE:	\$1,666,560.00
ESTIMATED AGGREGATE CONTRACT VALUE:	\$13,991,088.00

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
PROCUREMENT
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48913

CHANGE NOTICE NO. 8
To
CONTRACT NO. 071B1300138

Between
THE STATE OF MICHIGAN
And

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Optum Government Solutions, Inc.	David Wieber	David.wieber@optum.com
822 Centennial Way, Suite 100	TELEPHONE	CONTRACTOR #, MAIL CODE
Lansing, MI 48917	(517) 993-0929	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR:				
BUYER:	DTMB	Tammi Hart	(517) 335-4770	Hartt3@michigan.gov

INITIAL CONTRACT SUMMARY:			
DESCRIPTION: DTMB Data Warehouse Business Intelligence (BI)			
INITIAL TERM	EFFECTIVE DATE	INITIAL EXPIRATION DATE	AVAILABLE OPTIONS
5 years	December 21, 2010	December 20, 2015	5 two year options
PAYMENT TERMS	F.O.B	SHIPPED	SHIPPED FROM
N/A	N/A	N/A	N/A
ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS
<input type="checkbox"/> P-card	<input type="checkbox"/> Direct Voucher (DV)	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
MINIMUM DELIVERY REQUIREMENTS:			
N/A			

DESCRIPTION OF CHANGE NOTICE:	
OPTION EXERCISED: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES	IF YES, NEW EXPIRATION DATE:
Effective immediately, Integris Inc name has changed to Optum Government Solutions, Inc., with no change to the FEIN number. Per vendor and agency agreement and DTMB Procurement approval.	
VALUE/COST OF CHANGE NOTICE:	\$0
ESTIMATED AGGREGATE CONTRACT VALUE:	\$12,324,582.00

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

February 9, 2012

CHANGE NOTICE NO. 7
TO
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR Integrus Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917 Email: david.wieber@optum.com	TELEPHONE: (517) 327-2199 David Wieber
	VENDOR NUMBER/MAIL CODE
	BUYER/CA (517) 335-4770 Tammi Hart
Contract Compliance Inspector: DTMB-Data Warehouse Business Intelligence (BI)	
CONTRACT PERIOD: 5 yrs. + 5 two-year options From: December 21, 2010 To: December 20, 2015	
TERMS NA	SHIPMENT NA
F.O.B. NA	SHIPPED FROM NA
MINIMUM DELIVERY REQUIREMENTS	
MISCELLANEOUS INFORMATION:	

THIS CONTRACT IS EXTENDED TO ALL LOCAL UNITS OF GOVERNMENT.

NATURE OF CHANGE (S):

Effective immediately, this contract is hereby INCREASED by \$9,556,928.00 per State's work request: #ITB-TH-00014 for DCH Data Warehouse project. Vendor's work request response: dated December 19, 2011, to work request ITB-TH-00014..

All other terms, conditions, specifications and pricing remain the same.

AUTHORITY/REASON:

Per vendor and agency agreement and the approval of DTMB Procurement.

INCREASE: \$9,556,928.00

TOTAL REVISED ESTIMATED CONTRACT VALUE: \$12,324,528.00

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

February 9, 2012

CHANGE NOTICE NO. 6
TO
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR Integris Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917 Email: david.wieber@optum.com	TELEPHONE: (517) 327-2199 David Wieber
	VENDOR NUMBER/MAIL CODE
	BUYER/CA (517) 335-4770 Tammi Hart
Contract Compliance Inspector: DTMB-Data Warehouse Business Intelligence (BI)	
CONTRACT PERIOD: 5 yrs. + 5 two-year options From: December 21, 2010 To: December 20, 2015	
TERMS NA	SHIPMENT NA
F.O.B. NA	SHIPPED FROM NA
MINIMUM DELIVERY REQUIREMENTS	
MISCELLANEOUS INFORMATION:	

THIS CONTRACT IS EXTENDED TO ALL LOCAL UNITS OF GOVERNMENT.

NATURE OF CHANGE (S):

Effective immediately, the following changes are incorporated into the contract, as a result of February 7, 2012 Admin Board review:

The total estimated contract value has been reduced by \$7,949,387.50.

The reduced funds have been reallocated into a pool to support the Data Warehouse Business Intelligence program, administered by DTMB Procurement. Funds will be made available following a second tier selection process.

All other terms, conditions, specifications and pricing remain the same.

AUTHORITY/REASON:

Per vendor and agency agreement and the approval of DTMB Procurement and the approval of the State Administrative Board on February 7, 2012.

DECREASE: \$7,949,387.50

TOTAL REVISED ESTIMATED CONTRACT VALUE: \$2,767,600.00

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET December 19, 2011
PROCUREMENT
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48933

CHANGE NOTICE NO. 5
TO
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR Integris Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917 Email: david.wieber@optum.com		TELEPHONE: (517) 327-2199 David Wieber
		VENDOR NUMBER/MAIL CODE
		BUYER/CA (517) 335-4770 Tammi Hart
Contract Compliance Inspector: DTMB-Data Warehouse Business Intelligence (BI)		
CONTRACT PERIOD: 5 yrs. + 5 two-year options From: December 21, 2010 To: December 20, 2015		
TERMS NA	SHIPMENT NA	
F.O.B. NA	SHIPPED FROM NA	
MINIMUM DELIVERY REQUIREMENTS		
MISCELLANEOUS INFORMATION:		

THIS CONTRACT IS EXTENDED TO ALL LOCAL UNITS OF GOVERNMENT.

NATURE OF CHANGE (S):

Effective immediately, the following resource is incorporated into this contract, based on the State's work request ITB-TH-00013:

Named Resource: Ravichand Kolli

State's Work Request: #ITB-TH-00013 for One (1) Data Warehouse Architect.

Vendor's Work Request Response: Dated December 16, 2011 to work request ITB-TH-00013.

All other terms, conditions, specifications and pricing remain the same.

AUTHORITY/REASON:

Per vendor and agency agreement and the approval of DTMB Procurement.

TOTAL ESTIMATED CONTRACT VALUE REMAINS: \$10,716,987.50

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET November 4, 2011
PROCUREMENT
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48933

CHANGE NOTICE NO. 4
TO
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR Integris Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917 Email: david.wieber@optum.com	TELEPHONE: (517) 327-2199 David Wieber
	VENDOR NUMBER/MAIL CODE
	BUYER/CA (517) 335-4770 Tammi Hart
Contract Compliance Inspector: DTMB-Data Warehouse Business Intelligence (BI)	
CONTRACT PERIOD: 5 yrs. + 5 two-year options From: December 21, 2010 To: December 20, 2015	
TERMS NA	SHIPMENT NA
F.O.B. NA	SHIPPED FROM NA
MINIMUM DELIVERY REQUIREMENTS	
MISCELLANEOUS INFORMATION:	

THIS CONTRACT IS EXTENDED TO ALL LOCAL UNITS OF GOVERNMENT.

NATURE OF CHANGE (S):

Effective immediately, the following resource is incorporated into this contract, based on work request ITB-TH-00010:

Named Resource: Vigneshwar Reddymasu @ \$120/hour.

State's Work Request: #ITB-TH-00010 for One (1) Data Warehouse Modeler.

All other terms, conditions, specifications and pricing remain the same.

AUTHORITY/REASON:

Per vendor and agency agreement and the approval of DTMB Procurement.

TOTAL ESTIMATED CONTRACT VALUE REMAINS: \$10,716,987.50

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

August 2, 2011

CHANGE NOTICE NO. 3
TO
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR Integris Inc. 822 Centennial Way, Suite 100 Lansing, MI 48917 Email: david.wieber@bull.com	TELEPHONE: (517) 327-2199 David Wieber
	VENDOR NUMBER/MAIL CODE
	BUYER/CA (517) 335-4770 Tammi Hart
Contract Compliance Inspector: DTMB-Data Warehouse Business Intelligence (BI)	
CONTRACT PERIOD: 5 yrs. + 5 two-year options From: December 21, 2010 To: December 20, 2015	
TERMS NA	SHIPMENT NA
F.O.B. NA	SHIPPED FROM NA
MINIMUM DELIVERY REQUIREMENTS	
MISCELLANEOUS INFORMATION:	

THIS CONTRACT IS EXTENDED TO ALL LOCAL UNITS OF GOVERNMENT.

NATURE OF CHANGE (S):

Effective immediately, the contract is updated with the following contact information:

David Wieber
(517) 327-2199
David.Wieber@bull.com
822 Centennial Way, Suite 100
Lansing, MI 48917

All other terms, conditions, specifications and pricing remain the same.

AUTHORITY/REASON:

Per vendor request.

TOTAL ESTIMATED CONTRACT VALUE REMAINS: \$10,716,987.50

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

July 18, 2011

CHANGE NOTICE NO. 2
TO
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR Integris Inc. 12125 Technology Drive Eden Prairie, MN 55344 Email: Renee.Owings@ingenix.com	TELEPHONE: (517) 327-2280 Renee Owings
	VENDOR NUMBER/MAIL CODE
	BUYER/CA (517) 335-4770 Tammi Hart
Contract Compliance Inspector: DTMB-Data Warehouse Business Intelligence (BI)	
CONTRACT PERIOD: 5 yrs. + 5 two-year options From: December 21, 2010 To: December 20, 2015	
TERMS NA	SHIPMENT NA
F.O.B. NA	SHIPPED FROM NA
MINIMUM DELIVERY REQUIREMENTS	
MISCELLANEOUS INFORMATION:	

THIS CONTRACT IS EXTENDED TO ALL LOCAL UNITS OF GOVERNMENT.

NATURE OF CHANGE (S):

Effective immediately, the following resource is added to this contract:

Mohommod Khan, reduced rate from \$140, to \$136, for years one and two, and reduce rate from \$143 to \$140 for years three, four and five.

All other terms, conditions, specifications and pricing remain the same.

AUTHORITY/REASON:

Per DTMB-Purchasing Operations approval.

TOTAL ESTIMATED CONTRACT VALUE REMAINS: \$10,716,987.50

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

July 7, 2011

CHANGE NOTICE NO. 1
 TO
 CONTRACT NO. 071B1300138
 between
 THE STATE OF MICHIGAN
 and

NAME & ADDRESS OF VENDOR Integrus Inc. 12125 Technology Drive Eden Prairie, MN 55344		TELEPHONE: (517) 327-2280 Renee Owings
		VENDOR NUMBER/MAIL CODE
Email: Renee.Owings@ingenix.com		BUYER/CA (517) 335-4770 Tammi Hart
Contract Compliance Inspector: DTMB-Data Warehouse Business Intelligence (BI)		
CONTRACT PERIOD: 5 yrs. + 5 two-year options		From: December 21, 2010 To: December 20, 2015
TERMS NA	SHIPMENT NA	
F.O.B. NA	SHIPPED FROM NA	
MINIMUM DELIVERY REQUIREMENTS		
MISCELLANEOUS INFORMATION:		

THIS CONTRACT IS EXTENDED TO ALL LOCAL UNITS OF GOVERNMENT.

NATURE OF CHANGE (S):

Effective July 7, 2011, the following resources are hereby incorporated into this Contract based on the State's Work Request for the Labor Category corresponding to such resource (the "Work Request") and Vendor's Work Request response corresponding to such Work Request (the "Work Request Response"), where the pricing, terms and conditions of the Work Request and Work Request Responses are hereby incorporated by reference as part of this Contract:

Named Resource	State's Work Request	Vendor's Work Request Response
Raynald Desmeules	WORK REQUEST NO. ITB-TH-00003 FOR ONE (1) DATA WAREHOUSE ARCHITECT	Vendor's Response dated June 21, 2011, as amended by Revision dated July 7, 2011, in both cases to Work Request Response to Work Request No. ITB-TH-00003
Lee Ritchie	Work Request No. ITB-TH-00004 FOR ONE (1) DATA WAREHOUSE MODELER	Vendor's Response dated June 21, 2011 to Work Request No. ITB-TH-00004
Jim Davis	WORK REQUEST NO. ITB-TH-00005 FOR ONE (1) DATA WAREHOUSE BUSINESS INTELLIGENCE ANALYST SENIOR	Vendor's Response dated June 21, 2011, as amended by Revision dated July 7, 2011, in both cases to Work Request Response to Work Request No. ITB-TH-00005
Melissa Jourden	WORK REQUEST NO. ITB-TH-	Vendor's Response dated June 21, 2011 to Work

	00006 FOR ONE (1) DATA WAREHOUSE PROJECT MANAGER	Request No. ITB-TH-00006
Bruce Grant	WORK REQUEST No. ITB-TH-00007 FOR THREE (3) DATA WAREHOUSE SENIOR DEVELOPERS	Vendor's Response dated June 21, 2011 to Work Request No. ITB-TH-00007
Santosh Gangisetty	WORK REQUEST No. ITB-TH-00007 FOR THREE (3) DATA WAREHOUSE SENIOR DEVELOPERS	Vendor's Response dated June 21, 2011 to Work Request No. ITB-TH-00007
Sai Swaroop Mudduluru	WORK REQUEST No. ITB-TH-00007 FOR THREE (3) DATA WAREHOUSE SENIOR DEVELOPERS	Vendor's Response dated June 21, 2011 to Work Request No. ITB-TH-00007
Murali K. Mahadevan	WORK REQUEST No. ITB-TH-00008 FOR ONE (1) DATA WAREHOUSE BUSINESS OBJECTS ADMINISTRATOR	Vendor's Response dated June 21, 2011, as amended by Revision dated July 7, 2011, in both cases to Work Request Response to Work Request No. ITB-TH-00008

Please also note that the buyer has been CHANGED to Tammi Hart. All other terms, conditions, specifications and pricing remain the same.

AUTHORITY/REASON:

Per the above referenced Work Requests and Vendor's Work Request Responses, along with DTMB-Purchasing Operations approval.

TOTAL ESTIMATED CONTRACT VALUE REMAINS: \$10,716,987.50

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
ACQUISITION SERVICES
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48933

December 28, 2010

NOTICE
TO
CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR Integris Inc. 12125 Technology Drive Eden Prairie, MN 55344		TELEPHONE: (517) 327-2280 Renee Owings
		VENDOR NUMBER/MAIL CODE
Email: Renee.Owings@ingenix.com		BUYER/CA (517) 241-0239 Jacque Kuch
Contract Compliance Inspector: DTMB-Data Warehouse Business Intelligence (BI)		
CONTRACT PERIOD: 5 yrs. + 5 two-year options From: December 21, 2010 To: December 20, 2015		
TERMS NA	SHIPMENT NA	
F.O.B. NA	SHIPPED FROM NA	
MINIMUM DELIVERY REQUIREMENTS		
MISCELLANEOUS INFORMATION:		

THIS CONTRACT IS EXTENDED TO ALL LOCAL UNITS OF GOVERNMENT.

The terms and conditions of this Contract are those of ITB #07110200068 this Contract Agreement and the vendor's quote dated May 25, 2010. In the event of any conflicts between the specifications, terms and conditions indicated by the State and those indicated by the vendor, those of the State take precedence.

Estimated Contract Value: **\$10,716,987.50**

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
ACQUISITION SERVICES
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48933

CONTRACT NO. 071B1300138
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR Integris Inc. 12125 Technology Drive Eden Prairie, MN 55344		TELEPHONE: (517) 327-2280 Renee Owings
		VENDOR NUMBER/MAIL CODE
Email: Renee.Owings@ingenix.com		BUYER/CA (517) 241-0239 Jacque Kuch
Contract Compliance Inspector: DTMB-Data Warehouse Business Intelligence (BI)		
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All terms and conditions of the invitation to bid are made a part hereof.

FOR THE VENDOR:	FOR THE STATE:
Integris, Inc.	Signature
Firm Name	Greg Faremouth
Authorized Agent Signature	Name/Title
Jerry Knutson, Chief Financial Officer	IT Division Director
Authorized Agent (Print or Type)	Division
Date	Date



STATE OF MICHIGAN
Department of Management and Budget
Purchasing Operations

Contract No.071B1300138
[Data Warehouse Business Intelligence](#)

Buyer Name: [Jacque Kuch](#)
Telephone Number: [517-241-0239](#)
E-Mail Address: kuchj@michigan.gov



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DEFINITIONS

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 2.110
Backup and Restore	Two processes required for ensuring that data is not lost due to failure. Backup is the process of saving the data from the Data Warehouse to tape or some other persistent storage medium. Restore is the process of replacing that data on the Data Warehouse (in its original form) from the backup medium.
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.
Blanket Purchase Order	An alternate term for Contract as used in the States computer system.
Business Critical	Any function identified in any Statement of Work as Business Critical.
Chronic Failure	Defined in any applicable Service Level Agreements.
Conversion	Conversion is the process of modifying the State's current application that utilizes the Teradata data warehouse to operate with the Vendor's proposed solution. This will include conversion of the Extract Transform and Load (ETL) processes, reporting system configuration, production system conversion, and testing.
Deliverable	Physical goods and/or commodities as required or identified by a Statement of Work
Test/Development/DR System	This is a smaller version of the production data warehouse system used on a day by day basis for testing and development purposes, but can be used to replace the majority of the production data warehouse functionality in the event of a catastrophic failure of the production system.
Disaster Recovery	This is the process/system that provides a way to continue to use data warehouse functionality in the event of a catastrophic failure of the production data warehouse that makes it unavailable for an extended time.
DMB	Michigan Department of Management and Budget
Environmentally preferable products	A product or service that has a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. Such products or services may include, but are not limited to, those that contain recycled content, minimize waste, conserve energy or water, and reduce the amount of toxics either disposed of or consumed.
Excusable Failure	See Section 2.244.
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.
Migration	For the purpose of this RFP migration will be defined as the movement of the data from the State's existing data warehouse to the new data warehouse platform
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.



Ozone-depleting substance	Any substance the Environmental Protection Agency designates in 40 CFR part 82 as: (1) Class I, including, but not limited to, chlorofluorocarbons, halons, carbon tetrachloride, and methyl chloroform; or (2) Class II, including, but not limited to, hydro chlorofluorocarbons
Platform	the hardware and software components that comprise the entire data warehouse system
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.
Recycling	The series of activities by which materials that are no longer useful to the generator are collected, sorted, processed, and converted into raw materials and used in the production of new products. This definition excludes the use of these materials as a fuel substitute or for energy production.
Deleted – Not Applicable	Section is not applicable or included in this RFP. This is used as a placeholder to maintain consistent numbering.
Reuse	Using a product or component of municipal solid waste in its original form more than once.
RFP	Request for Proposal designed to solicit proposals for services
Services	Any function performed for the benefit of the State.
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 without the prior written consent of the State.
Waste prevention	Source reduction and reuse, but not recycling.
Waste reduction and Pollution prevention	The practice of minimizing the generation of waste at the source and, when wastes cannot be prevented, utilizing environmentally sound on-site or off-site reuse and recycling. The term includes equipment or technology modifications, process or procedure modifications, product reformulation or redesign, and raw material substitutions. Waste treatment, control, management, and disposal are not considered pollution prevention, per the definitions under Part 143, Waste Minimization, of the Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451, as amended.
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.



Article 1 – Statement of Work (SOW)

1.000 Project Identification

1.001 Project Request

The purpose of this contract is to provide a source of Business Intelligence professional services to support the State's data warehouse and related development.

The data warehouse is maintained and hosted by the Department of Technology, Management and Budget (DTMB) and currently supports multiple agencies, including the Michigan Department of Community Health (DCH), the Michigan Department of Human Services (DHS), the Michigan Department of Treasury (Treasury), the Michigan Department of Energy, Labor and Economic Growth (DELEG), and the State Courts Administrative Office (SCAO). Additional agencies may be supported in the future. The State of Michigan wishes to continue to host and administer any replacement systems with existing State staff in existing State facilities.

1.100 Scope of Work and Deliverables

1.101 In Scope

Providing staff augmentation and project development support for data warehouse and related application development.

1.103 Environment

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

All services and products provided in this Contract must comply with all applicable State IT policies and standards. The Contractor must request any exception to State IT policies and standards in accordance with DTMB processes. The State may deny the exception request or seek a policy or standards exception.

Enterprise IT Policies, Standards and Procedures:

<http://www.michigan.gov/dit/0,1607,7-139-34305---,00.html>

Enterprise IT Security Policy and Procedures:

All computer information systems and applications operate in a secure manner and comply with State Enterprise IT Security Policy and Procedures as found on the website:

<http://www.michigan.gov/dit/0,1607,7-139-34305-108216--,00.html>

**The State's security environment includes:**

- DTMB Single Login.
- DTMB provided SQL security database.
- Secured Socket Layers.
- SecurID (State Security Standard for external network access and high risk Web systems)

IT Strategic Plan:

<http://www.michigan.gov/dit/0,1607,7-139-30637-135173--,00.html>

IT eMichigan Web Development Standard Tools:

http://www.michigan.gov/documents/Look_and_Feel_Standards_2006_v3_166408_7.pdf

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>

Agency Specific Technical Environment

The agencies that use the Teradata use a range of databases and operating systems including Oracle on HP/UX, Solaris and Windows, SQL/Server on Windows and My SQL on Linux.

The State supports a common Business Objects reporting/query system that is used by several agencies to access the data warehouse. It runs on HP/UX with an Oracle 10g repository.

Three of the agencies (DCH, Treasury, and SCAO) use BI/Query to access the data warehouse.

1.104 Work and Deliverables

Deliverables described in section 1.104 are not all inclusive.

Professional Business Intelligence (BI) Services*Requirements:*

The State requires BI services in support of the data warehouse. In some cases this will be to support agencies without sufficient DTMB support to enable them to accomplish this with state staff. In other cases the agency has extensive DTMB support, but requires staff augmentation to assist them to deal with agency demand for services. In yet others an agency may ask for the pre-qualified BI service Contractor to quote and build a system for the agency to maintain.

Pre-qualified Contractors will be required to sign this Primary Contract with DTMB Purchasing Operations.

The Primary Contracts and any resulting Work Contracts will be written so as to incorporate by reference all the terms of this Contract. DTMB may include additional terms and conditions within their specific Work Request. There is no stated or implied guarantee that Work Contracts will be awarded to any pre-qualified Contractor(s) by the SOM.

In any of these cases there will be specific skill sets required including:

1. Data Warehouse Project Manager

- Manages the integration and/or development and delivery of very large and complex deliverables directly to the customer, or in support of a major enterprise-wide program. This position provides the primary interface between the Contractor, the State and third party providers.
- Establishes and manages the project plan, according to SUITE standards, including the development schedule, resource requirements and integration efforts of third party products. Periodically reports progress to State management.



- Motivates and directs project team; sets goals, objectives and priorities; assigns and reviews work.
- Acts as the primary interface with the State on issues regarding the project deliverable. Makes sure customer reviews are held with the customer user community and obtains sign-off on status reports and requirements.
- Makes sure approved methods, processes and tools are consistently used.
- Is accountable for meeting project schedule and results as well as for the State customer satisfaction and quality of the deliverables.

2. Data Warehouse Architect

- The data warehouse architect designs total solutions involving multiple systems for large organizations. Solutions may use third party hardware and software. Participates/leads in the construction of models and pilot programs with senior level managers.
- Conducts models and pilot programs to test proposals or develop solutions to problems. Develops measurement criteria to evaluate programs and projects and develops or reviews estimates on technical aspects of projects.
- Develops design proposals to meet customer needs
- Approves integrated systems design proposals for technical content.
- Monitors the implementation for technical correctness so that customer needs are met.
- Identifies, analyzes and evaluates alternative design solutions.

3. Data Warehouse Database Administrator

- A database administrator (DBA) is responsible for the availability, safety and usefulness of a database. This may include tasks such as:
 - Software Installation and database management system upgrades.
 - Software upgrades to ensure the database is in compliance with critical security patches, or, software upgrades deemed necessary by the State.
 - Working in conjunction with system administrators, server configuration to ensure that the entire database system is capable of providing the services needed.
 - Performance monitoring to identify bottlenecks and places where throughput can be improved.
 - Security administration to ensure that the database cannot be accessed by unauthorized parties or damaged by anyone.
 - Configure access to the data warehouse and communication between the warehouse and other servers.
 - Physical database design translates the logical database design to work optimally for the specific database environment.
 - Working with developers, establish standards and guidelines for access to the database.
 - Backup and Restore management to ensure that no data is lost and that backups can be restored in a timely manner.
 - Work with developers to optimize their queries.



4. Data Warehouse Developer Senior/Junior

- Data warehouse developers perform application development tasks in support of building business intelligence applications and integrating data warehouse resources into other Agency applications. In addition they provide database expertise to other application developers in close collaboration with DBAs and other data management staff. This may include tasks such as:
 - Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.
 - Extract, transform and load systems to move data from the various operational systems in which it is collected to a cleansed, consolidated data warehouse.
 - SQL development.
 - Work with developers and end user query developers to design and improve database queries.
 - Train developers in how best to design queries for a specific database.

5. Data Warehouse Designer/Modeler

- A data warehouse designer is responsible for the layout and navigability of a database. This involves defining the tables, keys and relationships that will allow an application to retrieve and update data correctly and efficiently. This may include tasks such as:
 - Working with end users and developers to understand the data needs of an application and the larger systems.
 - Providing different designs for different database uses. For example an OLTP database design will not be the same as one for a data warehouse. Designers must understand the uses to which their designs will be put.
 - Documenting the data involved including definitions, constraints and access needs.
 - Creating and maintaining logical designs, including Entity Relationship diagrams, which illustrate what data will be stored, how it is organized, how it can be retrieved (keys) and how it relates to other data in the database.
 - Creating and maintaining data definition language (DDL) that can be used to create and update the database.
 - Working with the DBA and application developers, modify the logical design to create a physical design most suited to the database environment and the applications that will use it..
 - Work with developers and DBA to create and maintain database design standards.

6. Data Warehouse Business Intelligence Report Developer

- Data reporting staff work with agency requestors to define and develop new queries, and provide training and technical support to both DIT developers and end user query developers. Their tasks may include:
 - Working with end user requestors to understand their data needs and create and implement solutions to those needs.
 - Develop and present training classes for end user developers to help learn how to most effectively use the data warehouse platform and the BI tools available to them to support their own data needs where possible.
 - Develop and present training classes for DIT developers to better understand how to use the BI development tools to create and implement reporting solution using the data warehouse.
 - Provide one on one support for developers and end users to assist them in accomplishing their data reporting needs.

7. Data Warehouse Business Intelligence Analyst Senior/Junior

- Business Intelligence/Data Warehouse staff work with end users to provide information in a number of different ways. This may include tasks such as:
 - Running Joint Application Design (JAD) sessions to understand what data is needed and how it is likely to be used.
 - Creating ad-hoc queries to answer specific user questions.
 - Program design and specification.
 - Creating data warehouse based applications including reporting, dashboards and other information analysis and delivery systems.



- Supporting end user to enable them to create their own queries and reports as needed.
- Identify data problems and work with developers to correct them.
- Using advanced analytics, provide agencies with predictive and explanatory analysis to enable them to better accomplish their missions
- Organize and run user groups to encourage self support among end user and DTMB query and other BI application developers

8. Data Warehouse Help Desk Analyst

- Help desk staff provide first line support for end users and developers, when there are problems with their use of the data warehouse and BI tools.
 - Accept problem reports and provide guidance for correction, or pass on status information where possible.
 - Direct unresolved problem reports to second line support (this may be either DTMB DCO or developer staff or Contractor staff responsible for a BI application).
 - Track and analyze problem occurrences and resolution.

9. Subject Matter Expert

- The Subject Matter Expert (SME) is an individual who has special, in-depth knowledge of one or more business area(s), for example tax compliance or Medicaid, and who understands business processes and policies well enough to work with Agency stakeholders and business leaders to help define technology solutions in support of new BI initiatives. This may include tasks such as:
 - Helping evaluate and define technology requirements in support of strategic Business Intelligence objectives, whether enterprise wide or Agency specific.
 - Helping define business needs and identifying and recommending the most appropriate solution in support of new Business Intelligence initiatives.

10. Web Developer

- The Web Developer is a technical specialist who designs and develops web-based applications that interact with and utilize the data warehouse to provide Agency users with highly interactive, easy to use web-based BI applications. Many of the job duties and responsibilities of the Web Developer are similar to the DW Developer role, but differ in that the Web developer works with agency staff and DTMB developers to define and develop applications that rely on unique web-based technology and tools, and that will conform to standards defined by DTMB for user interface and usage of the data warehouse. This may include tasks such as:
 - Working with department requestors to define the web application user interface, business rules, database access and data warehouse access;
 - Producing technical specification documents to review the web application with the user, and conducting JAD sessions to revise and finalize technical specifications;
 - Producing prototypes of web application pages for user review and approval;
 - Working with users to determine any data sources that need to be imported into the data warehouse for web application operation;
 - Producing accurate and complete data mapping documents;
 - Creating web pages using business rules, user interface standards and data warehouse access, as defined by users and conforming to DTMB guidelines;
 - Performing user acceptance tests with users and DTMB to confirm that new web applications perform per specifications and making adjustments to the web applications, as required;
 - Maintaining a developing and staging environment for the development and testing of enhancements to the web applications; and
 - Producing the proper RFC documentation, application package and database packages for DTMB to implement.

11. Advanced Analytics Software Consultant



- The Advanced Analytics Software Consultant (AASC) is a technical specialist with strong expertise designing and implementing BI solutions that are based on the use of advanced analytical technologies and tools. The AASC has hands-on experience evaluating, selecting, customizing, integrating, and deploying sophisticated data analysis tools to enable the use of data mining, predictive analytics and statistical analysis applications, along with the training to use and support them. The job duties and responsibilities of the AASC include:
 - Evaluating and selecting appropriate 3rd party product solutions based on specific customer business needs for advanced analytics, including recommending strategies for integration, required customizations, and implementation
 - Customizing and integrating the advanced data analysis tools in a data warehouse environment to enable the use of predictive analytics, data mining, grouping technologies, and statistical analysis tools;
 - Monitoring the integration and implementation for technical correctness assuring that Agency and DTMB needs are met; and
 - Developing and delivering customized training for the end users and DTMB staff on the effective use the advanced analytical solutions

12. Principal Consultant

- The Principal Consultant has a deep and diverse background in data warehouse technologies with extensive experience in a variety of relational database systems, business intelligence and advanced analytical tools, data integration technologies, development languages, data governance and data management strategies, methodologies and solutions. The tasks may include:
 - Counseling business stakeholders and executives in the planning and use of advanced data warehousing and business intelligence technology to address key business issues and challenges
 - Assessing the needs of large organizations;
 - Evaluating solution alternatives and helping to define the scope of the solution;
 - Defining critical success factors for implementation projects;
 - If required, assisting in the development of functional requirements specific to the Agency's business needs and operational environment;
 - Assessing and advising management on the project approach to deploying data warehousing, data management and/or business intelligence solutions;
 - Providing senior level public healthcare policy and program expertise by assisting the State with coverage initiatives, interpretation of federal regulations, waiver proposals and other strategic program and planning initiatives.

13. Knowledge Transfer/Transition

While the BI services Contractor(s) will be working closely with DTMB staff in most cases, they are still required to provide documentation for any work that they do, which describes both what was done and why it was done in that fashion. In addition BI services staff will be required to perform informal training to state staff on platform issues, applications written by the Contractor, and general data warehouse usage.

1.200 Roles and Responsibilities

1.201 Contractor Staff, Roles, and Responsibilities

Business Intelligence Services Staff Requirements

1. Contractor(s) must manage and implement BI projects with minimal State involvement.
2. Contractor(s) must provide services during normal working hours (Monday through Friday, 7:00 a.m. to 6:00 p.m. ET.) and possible night and weekend hours depending on position and project requirements. No overtime will be authorized or paid. 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. Contractor(s) shall observe the same standard holidays as State employees. The State does not compensate for holiday pay. Contractor(s) will not be reimbursed for travel expenses or travel time.

3. Contractor(s) work is to be performed, completed, and managed in the Lansing, MI area:
4. Obtaining BI Services
The State after formalizing a comprehensive Work Request will facilitate the second tier selection process for each Contracting effort. A Work Request template will identify the statement of work, category of service, period of performance, deliverables, specific response information required, work evaluation and payment criteria, and any special terms and conditions.
 - a. Contractor(s) must respond fully to a service request with the following candidate information within five (5) days of issuance by the State on the Bid4Michigan site. Responses must include:

Resumes of qualified staff for each position the State has requested.
Date of availability for each candidate.
The results of two reference checks that the Contractor(s) has performed on the proposed individual, including the names and telephone numbers of the references themselves. At least one of these reference checks must be from a supervisor.
Verification of a candidate's permission to work in the United States.
Rate for each resume submitted. Rates may not exceed the rates in the Contract. However, the rates may be less, depending on the State's requirements, nature of the job market, and the candidate's abilities.
 - b. Contractor(s) may request clarification regarding the State's request during the response period. If the Contractor is unable to provide the personnel requested, the Contractor must record this fact in a written response to the State.
 - c. The State will evaluate the resumes and references of submitted candidates. Selection will be based on a best value evaluation using the criteria identified in the Work Request and the rate provided by the Contractor. Other selection criteria or tools which may be in the best interest of the State may be utilized to make a selection.

The State may contact the Contractor to request an interview with a candidate. The Contractor will be responsible for setting up all interviews. At the State's discretion, the interview may be conducted over the telephone. The State may, at its discretion, request a face-to-face interview. In this case, all expenses travel or otherwise, resulting from such a request must be borne by the Contractor.
 - d. After selecting the resume(s) that present the best value to the State, the State will notify Contractor(s) regarding its selection.
5. Contractor(s) will be responsible for setting up all interviews between the candidates and DTMB/Agency management, if requested by DTMB.
6. Contractor(s) will provide a mechanism for expedited procurement of staff to meet a need for immediate replacement or for mission critical services.
7. Contractor(s) will ensure that the staff proposed for this assignment are fully trained and meet the skill set requirements of the job position being filled. The State makes changes to its technical architectures from time to time. If a Contract individual is assigned to a State project or support area and the technology associated with their assignment changes, the Contractor (s) are responsible for training in the new or changed technology (e.g., Contractor personnel needs training in a particular tool in order to perform their State assignment.) or providing new resources who are trained in the new tool, at the State's discretion. Contractor (s) or the assigned Contract staff may elect to pay for the training necessary to continue working on the assignment. The cost of the course, including any travel expenses, and the training hours will not be billable to the State.



8. Contractor(s) is responsible for providing a 30 day written notice to the State in addition to a plan for transitioning to a new resource including knowledge transfer in the event an individual is terminated or voluntarily withdrawn from an assignment. The State will not reimburse the Contractor for both the departing resource and the incoming resource during the transition period. The State can request the Contractor replace the individual with an individual of equal or greater qualifications.
 - a. Contractor(s) staff will be subject to the rules, regulations, and policies of DTMB and the Michigan Department of Civil Service.
 - b. Contractor(s) staff assigned to work with restricted (a.k.a. sensitive) data have an obligation to safeguard and protect the confidentiality of such data. Further, if the staff member accidentally or purposefully releases restricted or sensitive data, the Contractor assumes full responsibility for any resulting penalties.
 - c. Contractor(s) assumes full responsibility for the acts of all subcontractors.
 - d. Contractor(s) may use subcontractors to fulfill requirements of the Contract. If subcontractors are employed, Contractor will pay subcontractors within 30 days of the Contractor's monthly invoice, to the extent that Ingenix's invoice includes work done by it's sub-contractors that meets the requirements of the corresponding subcontract, and as long as the State has not withheld payments to contractor due to the unsatisfactory performance of the sub-contractor.
 - e. Contractor(s) will ensure that staff exhibits professional conduct and act in the best interest of the State.

Contractor(s) may not remove or reassign staff to other Contracts unless mutually agreed upon by the State and the Contractor(s). If staff is removed without compliance the State has the right to impose a monetary penalty of up to 1% of the previous month's invoice total as the State's sole and exclusive remedy.

On Site Work Requirements

Requirements:

1. Location of Work

The work is to be performed, completed, and managed at the following locations:

- State office buildings in the immediate Lansing, MI area.
- Some professional services related to projects may be performed in the Contractor's office in the Lansing area on a case by case basis as mutually agreed upon.

2. Travel:

- a. No travel or expenses will be reimbursed. This includes travel costs related to training provided to the State by the Contractor.
- b. Travel time will not be reimbursed.

3. 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.

All proposed Contractor personnel for platform and BI services must satisfy the security requirements for the agencies in which they will be working—at the minimum signing the Agency security forms. In addition some Agencies (Treasury for example) require personnel to attend additional security training and agree to be bound by their requirements.

In addition, proposed Contractor personnel will be required to complete and submit an RI-8 Fingerprint Card for the National Crime Information Center (NCIC) Finger Prints, if required by project.



Contractor will pay for all costs associated with ensuring their staff meets all requirements.

1.202 State Staff, Roles, and Responsibilities

A. The State will provide the following resources for the Contractor's use:

- Work space
- Minimal clerical support
- Telephone
- PC workstation
- Printer
- Access to copiers and fax machine. This includes software licenses as appropriate.

B. A purchase order (PO) will be issued for all resources working under this Contract.

C. The State will notify Contractor(s) in writing if a senior resource is not performing at senior level. The Contractor(s) will be responsible for finding a senior level replacement, or will reduce the hourly rate for the person to that of a non-senior resource, at the discretion of the State.

The State project team for the Data Warehouse Platform Contract (071B1300109), will consist of Executive Subject Matter Experts (SME's), project support, and a DTMB and Agency project managers.

D. Executive Subject Matter Experts

1. The Executive Subject Matter Experts (SME) representing the business units involved will provide the business knowledge required for any conversion activities. The Executive SME's will be empowered to:
 - Resolve project issues in a timely manner
 - Review project plan, status, and issues
 - Resolve deviations from project plan
 - Provide acceptance sign-off
 - Utilize change control procedures
 - Ensure timely availability of State resources
 - Make key implementation decisions, as identified by the Contractor's project manager, within 48-hours of their expected decision date.

Name	Agency/Division	Title	Phone/e-mail
Forrest Cumberworth	Treasury		
Cynthia Green-Edwards	Community Health		
George Noonan	Human Services	Manager Data Analysis and Information Management	
Dean Feldpausch	MSHDA	Department Manager	
Marcus Dobek	SCAO		
Carol Steel Sherman	DTMB/DCO	Director	
Richard Burgis	DTMB	Manager	

E. State Project Managers - (DTMB and Agency)

1. DTMB and Agencies will provide Project Managers who will be responsible for the State's infrastructure and coordinate with the Contractor in determining the system configuration.

The State's Project Manager will provide the following services:

- Provide State facilities, as needed
- Coordinate the State resources necessary for the project
- Facilitate coordination between various external Contractor s
- Facilitate communication between different State departments/divisions
- Provide acceptance and sign-off of deliverable/milestone
- Review and sign-off on timesheets and invoices
- Resolve project issues



- 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.

Name/DTMB/Agency PM	Agency/Division	Title
Tess Layman	DTMB	Project Manager
George Noonan	Human Services	Manager Data Analysis and Information Management
Cynthia Green Edwards	Community Health	
Dean Feldpausch	MSHDA	Department Manager
Marcus Dobek	SCAO	

2. The Data Warehouse Platform Contract (071B1300109) will be managed by the DTMB DCO Project Manager.

DTMB DCO Project Manager	Agency/Division	Title
Carol Steel Sherman	DTMB	DCO Director

3. DTMB shall provide a Contract Administrator whose duties shall include, but not be limited to, supporting the management of the BI Services Contract.

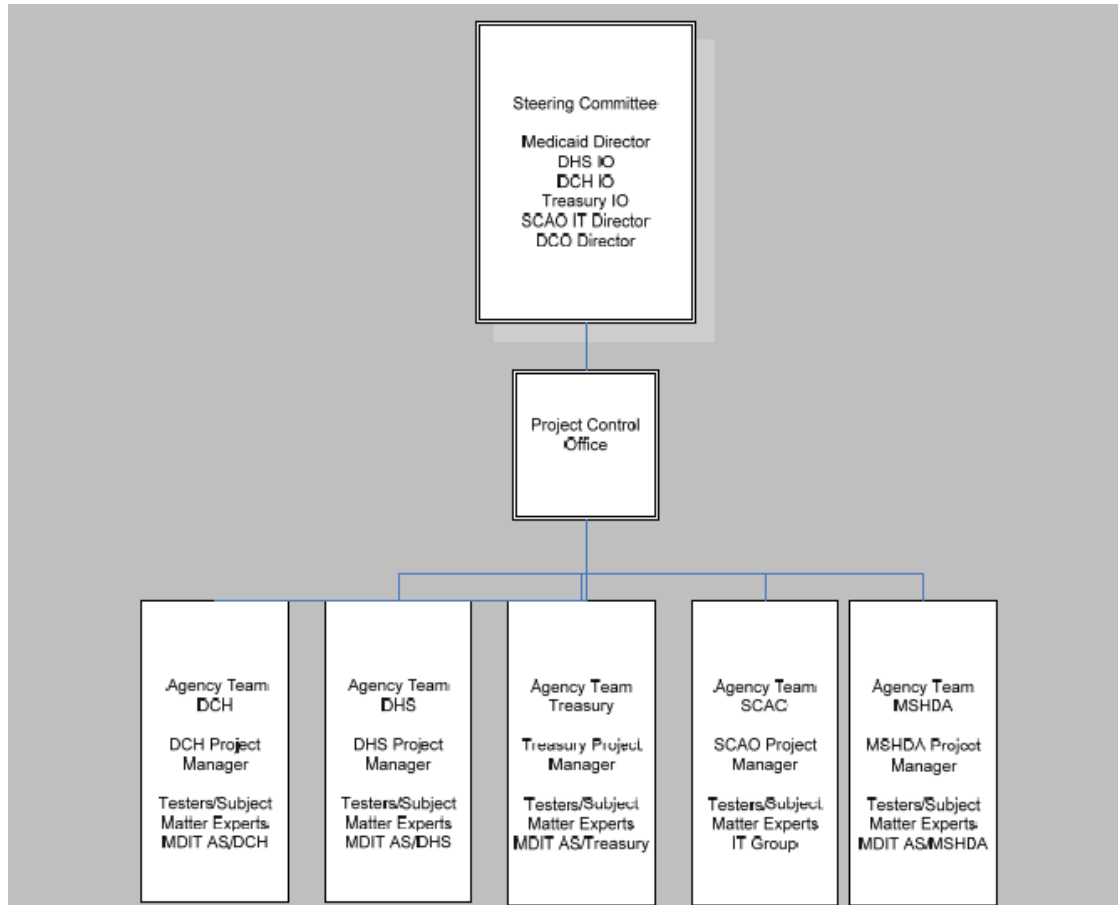
Name	Agency/Division	Title
	DTMB/Bureau of Strategic Policy	Contract Administrator



F. State Project Structure

The Data Warehouse Platform Contract and the projects under this Contract will be managed by a Steering committee consisting of the Medicaid Director, the Agency IOs responsible for the groups that use the Data Warehouse, the SCAO IT director and the DTMB DCO director. They will be responsible for overall direction and resolving any issues that arise.

A Project Control Office (PCO) will be used to manage the day-to-day operations of the Data Warehouse Platform Contract and projects under this Contract on a state-wide basis. Each agency will manage its own migration and implementation under the Data Warehouse Platform Contract, and the activities required under this Contract, in each case under the coordination of the PCO. This structure is illustrated below:



1.400 Project Management - Reserved

1.600 Compensation and Payment

1.601 Compensation And Payment

A. Method of Payment

The BI services will be paid according to specified payment terms in each Work Request.

B. Travel

The State will not pay for any travel expenses, including hotel, mileage, meals, parking, etc., except on an exception basis as set forth in Section 1.601(C) below. Travel time will not be reimbursed.

C. Out-of-Pocket Expenses



Contractor out-of-pocket expenses are not separately reimbursable by the State unless, on a case-by-case basis for unusual expenses, the State has agreed in advance and in writing to reimburse Contractor for such an expense at the State's current travel reimbursement rates.

In the event travel is required, all travel reimbursement will be paid according to the State of Michigan's Standardized Travel Rates and Regulations. This information may be found at:

http://www.michigan.gov/dmb/0,1607,7-150-9141_13132---,00.html

All air, car and hotel reservations must be made through the State Contract with Passageways Travel at (517) 333-5880 or (800) 915-8729. All original receipts must be included with your travel voucher and invoices, which must include the purchase order number. Failure to follow this policy will result in reduced reimbursement.

D. Purchase Orders

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

E. Invoicing

Contractor will submit properly itemized invoices to "Bill To" Address on Purchase Order. 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.
- Hours worked and time period for invoiced hours.
- Name of Contracted employee.

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



Article 2. Terms and Conditions

2.000 Contract Structure and Term

2.001 Contract Term

This Contract is for a period of five (5) years beginning December 21, 2010 through December 20, 2015. All outstanding Purchase Orders must also expire upon the termination (cancellation for any of the reasons listed in **Section 2.150**) of the Contract, unless otherwise extended under the Contract. Absent an early termination for any reason, Purchase Orders issued but not expired, by the end of the Contract's stated term, will remain in effect for the balance of the fiscal year for which they were issued.

2.002 Options to Renew

This Contract may be renewed in writing by mutual agreement of the parties not less than 30 days before its expiration. The Contract may be renewed for up to five (5) additional two (2) year periods.

2.003 Legal Effect

Contractor shall show acceptance of this Contract by signing two copies of the Contract and returning them to the Contract Administrator. The Contractor shall not proceed with the performance of the work to be done under the Contract, including the purchase of necessary materials, until both parties have signed the Contract to show acceptance of its terms, and the Contractor receives a Contract release/purchase order that authorizes and defines specific performance requirements.

Except as otherwise agreed in writing by the parties, the State assumes no liability for costs incurred by Contractor or payment under this Contract, until Contractor is notified in writing that this Contract (or Change Order) has been approved by the State Administrative Board (if required), approved and signed by all the parties, and a Purchase Order against the Contract has been issued.

2.004 Attachments & Exhibits

All Attachments and Exhibits affixed to any and all Statement(s) of Work, or appended to or referencing this Contract, are incorporated in their entirety and form part of this Contract.

2.005 Ordering

The State will issue a written Purchase Order, Blanket Purchase Order, Direct Voucher or Procurement Card Order, which must be approved by the Contract Administrator or the Contract Administrator's designee, to order any Services/Deliverables under this Contract. All orders are subject to the terms and conditions of this Contract. No additional terms and conditions contained on either a Purchase Order or Blanket Purchase Order apply unless they are also specifically contained in that Purchase Order or Blanket Purchase Order's accompanying Statement of Work. Exact quantities to be purchased are unknown, however, the Contractor will be required to furnish all such materials and services as may be ordered during the CONTRACT period. Quantities specified, if any, are estimates based on prior purchases, and the State is not obligated to purchase in these or any other quantities.

2.006 Order of Precedence

The Contract, including any Statements of Work and Exhibits, to the extent not contrary to the Contract, each of which is incorporated for all purposes, constitutes the entire agreement between the parties with respect to the subject matter and supersedes all prior agreements, whether written or oral, with respect to the subject matter and as additional terms and conditions on the purchase order must apply as limited by **Section 2.005**.

In the event of any inconsistency between the terms of the Contract and a Statement of Work, the terms of the Statement of Work will take precedence (as to that Statement of Work only); provided, however, that a Statement of Work may not modify or amend the terms of the Contract, which may be modified or amended only by a formal Contract amendment.



2.007 Headings

Captions and headings used in the Contract are for information and organization purposes. Captions and headings, including inaccurate references, do not, in any way, define or limit the requirements or terms and conditions of the Contract.

2.008 Form, Function & Utility

If the Contract is for use of more than one State agency and if the Deliverable/Service does not meet the form, function, and utility required by that State agency, that agency may, subject to State purchasing policies, procure the Deliverable/Service from another source.

2.009 Reformation and Severability

Each provision of the Contract is severable from all other provisions of the Contract and, if one or more of the provisions of the Contract is declared invalid, the remaining provisions of the Contract remain in full force and effect.

2.010 Consents and Approvals

Except as expressly provided otherwise in the Contract, if either party requires the consent or approval of the other party for the taking of any action under the Contract, the consent or approval must be in writing and must not be unreasonably withheld or delayed.

2.011 No Waiver of Default

If a party fails to insist upon strict adherence to any term of the Contract then the party has not waived the right to later insist upon strict adherence to that term, or any other term, of the Contract.

2.012 Survival

Any provisions of the Contract that impose continuing obligations on the parties, including without limitation the parties' respective warranty, indemnity and confidentiality obligations, survive the expiration or termination of the Contract for any reason. Specific references to survival in the Contract are solely for identification purposes and not meant to limit or prevent the survival of any other section

2.020 Contract Administration

2.021 Issuing Office

This Contract is issued by the Department of Technology, Management and Budget, Purchasing Operations (collectively, including all other relevant State of Michigan departments and agencies, the "State"). Purchasing Operations is the sole point of contact in the State with regard to all procurement and Contractual matters relating to the Contract. The Purchasing Operations Contract Administrator for this Contract is:

Jacque Kuch, Buyer
Purchasing Operations
Department of Technology, Management and Budget
Mason Bldg, 2nd Floor
PO Box 30026
Lansing, MI 48909
kuchj@michigan.gov
517-241-0239

2.022 Contract Compliance Inspector

The Director of Purchasing Operations directs the person named below, or his or her designee, to monitor and coordinate the activities for the Contract on a day-to-day basis during its term. **Monitoring Contract activities does not imply the authority to change, modify, clarify, amend, or otherwise alter the prices, terms, conditions and specifications of the Contract. Purchasing Operations is the only State office authorized to change, modify, amend, alter or clarify the prices, specifications, terms and conditions of this Contract.** The Contract Compliance Inspector for this Contract is:



Patty Bogard
Purchasing Operations
Department of Technology, Management and Budget
Mason Bldg, 2nd Floor
PO Box 30026
Lansing, MI 48909
bogardp@michigan.gov
517-335-4051

2.023 Project Manager

The following individual will oversee the project:

Tess Layman
Michigan Department of Technology, Management and Budget
235 S Grand Ave
Lansing, MI 48933
Email laymant@michigan.gov
Phone: (517)335-3779

2.024 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 work to be performed by the Contractor under the Contract. During the course of ordinary business, it may become necessary for the State to discontinue certain business practices or create Additional Services/Deliverables. At a minimum, to the extent applicable, the State would like the Contractor to provide a detailed outline of all work to be done, including tasks necessary to accomplish the 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, and before commencing performance of the requested activities, that it believes the requested activities 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 Services/Deliverables, 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 Services/Deliverables being provided by the Contractor under the Contract, but which the Contractor reasonably and in good faith believes are not included within the Statements of Work, 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 should require 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 shall be entitled to propose a Change to the State, on its own initiative, should it be of the opinion that this 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 will 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 Amendment 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 must be entitled to accept a Contractor proposal for Change, to reject it, or to reach another agreement with Contractor. Should 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 must 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, Purchasing Operations.
- (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.

2.025 Notices

Any notice given to a party under the Contract must be deemed effective, if addressed to the party as addressed below, upon: (i) delivery, if hand delivered; (ii) receipt of a confirmed transmission by facsimile if a copy of the notice is sent by another means specified in this Section; (iii) the third Business Day after being sent by U.S. mail, postage pre-paid, return receipt requested; or (iv) the next Business Day after being sent by a nationally recognized overnight express courier with a reliable tracking system.

State:

State of Michigan
Purchasing Operations
Attention: Jacque Kuch
PO Box 30026
530 West Allegan
Lansing, Michigan 48909

Integrus, Inc.
285 Billerica Road, Suite 200
Chelmsford, MA 01824
Attn: Vice President and General Manager, Ingenix Government Solutions

Either party may change its address where notices are to be sent by giving notice according to this Section.

2.026 Binding Commitments

Representatives of Contractor must have the authority to make binding commitments on Contractor's behalf within the bounds set forth in the Contract. Contractor may change the representatives from time to time upon written notice.

2.027 Relationship of the Parties

The relationship between the State and Contractor is that of client and independent Contractor. No agent, employee, or servant of Contractor or any of its Subcontractors must be or must be deemed to be an employee, agent or servant of the State for any reason. Contractor will be solely and entirely responsible for



its acts and the acts of its agents, employees, servants and Subcontractors during the performance of the Contract.

2.028 Covenant of Good Faith

Each party must act reasonably and in good faith. Unless stated otherwise in the Contract, the parties will not unreasonably delay, condition or withhold the giving of any consent, decision or approval that is either requested or reasonably required of them in order for the other party to perform its responsibilities under the Contract.

2.029 Assignments

Neither party may assign the Contract, or assign or delegate any of its duties or obligations under the Contract, to any other party (whether by operation of law or otherwise), without the prior written consent of the other party; provided, however, that the State may assign the Contract to any other State agency, department, division or department without the prior consent of Contractor and Contractor may assign the Contract to an affiliate so long as the affiliate is adequately capitalized and can provide adequate assurances that the affiliate can perform the Contract. The State may withhold consent from proposed assignments, subcontracts, or novations when the transfer of responsibility would operate to decrease the State's likelihood of receiving performance on the Contract or the State's ability to recover damages.

Contractor may not, without the prior written approval of the State, assign its right to receive payments due under the Contract. If the State permits an assignment, the Contractor is not relieved of its responsibility to perform any of its Contractual duties, and the requirement under the Contract that all payments must be made to one entity continues.

If the Contractor intends to assign the Contract or any of the Contractor's rights or duties under the Contract, the Contractor must notify the State in writing at least 90 days before the assignment. The Contractor also must provide the State with adequate information about the assignee within a reasonable amount of time before the assignment for the State to determine whether to approve the assignment.

2.030 General Provisions

2.031 Media Releases

News releases (including promotional literature and commercial advertisements) pertaining to the RFP and Contract or project to which it relates shall not be made without prior written State approval, and then only in accordance with the explicit written instructions from the State. No results of the activities associated with the RFP and Contract are to be released without prior written approval of the State and then only to persons designated.

2.032 Contract Distribution

Purchasing Operations retains the sole right of Contract distribution to all State agencies and local units of government unless other arrangements are authorized by Purchasing Operations.

2.033 Permits

Contractor must obtain and pay any associated costs for all required governmental permits, licenses and approvals for the delivery, installation and performance of the Services. The State must pay for all costs and expenses incurred in obtaining and maintaining any necessary easements or right of way.

2.034 Website Incorporation

The State is not bound by any content on the Contractor's website, even if the Contractor's documentation specifically referenced that content and attempts to incorporate it into any other communication, unless the State has actual knowledge of the content and has expressly agreed to be bound by it in a writing that has been manually signed by an authorized representative of the State.

**2.035 Future Bidding Preclusion**

Contractor acknowledges that, to the extent this Contract involves the creation, research, investigation or generation of a future RFP; it may be precluded from bidding on the subsequent RFP. The State reserves the right to disqualify any bidder if the State determines that the bidder has used its position (whether as an incumbent Contractor, or as a Contractor hired to assist with the RFP development, or as a Contractor offering free assistance) to gain a competitive advantage on the RFP

2.036 Freedom of Information

All information in any proposal submitted to the State by Contractor and this Contract is subject to the provisions of the Michigan Freedom of Information Act, 1976 Public Act No. 442, as amended, MCL 15.231, et seq (the "FOIA").

2.037 Disaster Recovery

Contractor and the State recognize that the State provides essential services in times of natural or man-made disasters. Therefore, except as so mandated by Federal disaster response requirements, Contractor personnel dedicated to providing Services/Deliverables under this Contract will provide the State with priority service for repair and work around in the event of a natural or man-made disaster.

2.040 Financial Provisions**2.041 Fixed Prices for Services/Deliverables**

Each Statement of Work or Purchase Order issued under this Contract shall specify (or indicate by reference to the appropriate Contract Exhibit) the firm, fixed prices for all Services/Deliverables, and the associated payment milestones and payment amounts, where such firm fixed price shall be expressed on an hourly rates by labor categories and in no event shall such rates exceed those set forth as not to exceed rates in Exhibit A attached hereto and incorporated by reference herein. The State may make progress payments to the Contractor when requested as work progresses, but not more frequently than monthly, in amounts approved by the Contract Administrator, after negotiation. Contractor must show verification of measurable progress at the time of requesting progress payments.

2.042 Adjustments for Reductions in Scope of Services/Deliverables

If the scope of the Services/Deliverables under any Statement of Work issued under this Contract is subsequently reduced by the State, the parties shall negotiate an equitable reduction in Contractor's charges under such Statement of Work commensurate with the reduction in scope.

2.043 Services/Deliverables Covered

For all Services/Deliverables to be provided by Contractor (and its Subcontractors, if any) under this Contract, the State shall not be obligated to pay any amounts in addition to the charges specified in this Contract.

2.044 Invoicing and Payment – In General

- (a) Each Statement of Work issued under this Contract shall list (or indicate by reference to the appropriate Contract Exhibit) the prices for all Services/Deliverables, equipment and commodities to be provided, and the associated payment milestones and payment amounts.
- (b) Each Contractor invoice will show details as to charges by Service/Deliverable component and location at a level of detail reasonably necessary to satisfy the State's accounting and charge-back requirements. Invoices for Services performed on a time and materials basis will show, for each individual, the number of hours of Services performed during the billing period, the billable skill/labor category for such person and the applicable hourly billing rate. Prompt payment by the State is contingent on the Contractor's invoices showing the amount owed by the State.
- (c) Correct invoices will be due and payable by the State, in accordance with the State's standard payment procedure as specified in 1984 Public Act No. 279, MCL 17.51 et seq., within 45 days after receipt, provided the State determines that the invoice was properly rendered.
- (d1) All invoices should reflect actual work done. Specific details of invoices and payments will be agreed upon between the Contract Administrator and the Contractor after the proposed Contract Agreement has



been signed and accepted by both the Contractor and the Director of Purchasing Operations, Department of Technology, Management and Budget. This activity will occur only upon the specific written direction from Purchasing Operations.

The specific payment schedule for any Contract(s) entered into, as the State and the Contractor(s) will mutually agree upon. The schedule should show payment amount and should reflect actual work done by the payment dates, less any penalty cost charges accrued by those dates. As a general policy statements shall be forwarded to the designated representative by the 15th day of the following month.

The Government may make progress payments to the Contractor when requested as work progresses, but not more frequently than monthly, in amounts approved by the Contract Administrator, after negotiation. Contractor must show verification of measurable progress at the time of requesting progress payments.

2.045 Pro-ration

To the extent there are any Services that are to be paid for on a monthly basis, the cost of such Services shall be pro-rated for any partial month.

2.046 Antitrust Assignment

The Contractor assigns to the State any claim for overcharges resulting from antitrust violations to the extent that those violations concern materials or services supplied by third parties to the Contractor, toward fulfillment of this Contract.

2.047 Final Payment

The making of final payment by the State to Contractor does not constitute a waiver by either party of any rights or other claims as to the other party's continuing obligations under the Contract, nor will it constitute a waiver of any claims by one party against the other arising from unsettled claims or failure by a party to comply with this Contract, including claims for Services and Deliverables not reasonably known until after acceptance to be defective or substandard. Contractor's acceptance of final payment by the State under this Contract shall constitute 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 unsettled.

2.048 Electronic Payment Requirement

Electronic transfer of funds is required for payments on State Contracts. Contractors are required to register with the State electronically at <http://www.cpexpress.state.mi.us>. As stated in Public Act 431 of 1984, all Contracts that the State enters into for the purchase of goods and services shall provide that payment will be made by electronic fund transfer (EFT).

2.050 Taxes

2.051 Employment Taxes

Contractors are expected to collect and pay all applicable federal, state, and local employment taxes, including the taxes.

2.052 Sales and Use Taxes

Contractors are required to be registered and to remit sales and use taxes on taxable sales of tangible personal property or services delivered into the State. Contractors that lack sufficient presence in Michigan to be required to register and pay tax must do so as a volunteer. This requirement extends to: (1) all members of any controlled group as defined in § 1563(a) of the Internal Revenue Code and applicable regulations of which the company is a member, and (2) all organizations under common control as defined in § 414(c) of the Internal Revenue Code and applicable regulations of which the company is a member that make sales at retail for delivery into the State are registered with the State for the collection and remittance of sales and use taxes. In applying treasury regulations defining "two or more trades or businesses under common control" the term "organization" means sole proprietorship, a partnership (as defined in § 701(a) (2) of the Internal Revenue Code), a trust, an estate, a corporation, or a limited liability company.



2.060 Contract Management

2.061 Contractor Personnel Qualifications

All persons assigned by Contractor to the performance of Services under this Contract must be employees of Contractor or its majority-owned (directly or indirectly, at any tier) subsidiaries (or a State-approved Subcontractor) and must be fully qualified to perform the work assigned to them. Contractor must include a similar provision in any subcontract entered into with a Subcontractor. For the purposes of this Contract, independent Contractors engaged by Contractor solely in a staff augmentation role must be treated by the State as if they were employees of Contractor for this Contract only; however, the State understands that the relationship between Contractor and Subcontractor is an independent Contractor relationship.

2.062 Contractor Key Personnel

- (a) The Contractor must provide the Contract Compliance Inspector with the names of the Key Personnel.
- (b) Key Personnel must be dedicated as defined in the Statement of Work to the Project for its duration in the applicable Statement of Work.
- (c) The State will 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 will notify the State of the proposed assignment, will introduce the individual to the appropriate State representatives, and will 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 will provide a written explanation including reasonable detail outlining the reasons for the rejection.
- (d) Contractor must not remove any Key Personnel from their assigned roles on 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. Unauthorized Removals does not include replacing Key Personnel because of promotions or other job movements allowed by Contractor personnel policies or Collective Bargaining Agreement(s) as long as the State receives prior written notice before shadowing occurs and Contractor provides 30 days of shadowing unless parties agree to a different time period. 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.
- (e) 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.

2.063 Re-assignment of Personnel at the State's Request

The State reserves the right to require the removal from the Project of Contractor personnel found, in the judgment of the State, to be unacceptable. The State's request must be written with reasonable detail outlining the reasons for the removal request. Additionally, the State's request must be based on legitimate, good faith reasons. Replacement personnel for the removed person must be fully qualified for the position. If the State exercises this right, and the Contractor cannot immediately replace the removed personnel, the State agrees to an equitable adjustment in schedule or other terms that may be affected by the State's required removal. If any incident with removed personnel results in delay not reasonably anticipatable under the circumstances and which is attributable to the State, the applicable SLAs for the affected Service will not be counted for a time as agreed to by the parties.

**2.064 Contractor Personnel Location**

All staff assigned by Contractor to work on the Contract will perform their duties either primarily at Contractor's offices and facilities or at State facilities. Without limiting the generality of the foregoing, Key Personnel will, 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.

2.065 Contractor Identification

Contractor employees must be clearly identifiable while on State property by wearing a State-issued badge, as required. Contractor employees are required to clearly identify themselves and the company they work for whenever making contact with State personnel by telephone or other means.

2.066 Cooperation with Third Parties

Contractor agrees to cause its personnel and the personnel of any Subcontractors to cooperate with the State and its agents and other Contractors including the State's Quality Assurance personnel. As reasonably requested by the State in writing, the Contractor will provide to the State's agents and other Contractors reasonable access to Contractor's Project personnel, systems and facilities to the extent the access relates to activities specifically associated with this Contract and will not interfere or jeopardize the safety or operation of the systems or facilities. The State acknowledges that Contractor's time schedule for the Contract is very specific and agrees not to unnecessarily or unreasonably interfere with, delay or otherwise impeded Contractor's performance under this Contract with the requests for access.

2.067 Contract Management Responsibilities

Contractor shall be responsible for all acts and omissions of its employees, as well as the acts and omissions of any other personnel furnished by Contractor to perform the Services. Contractor shall have overall responsibility for managing and successfully performing and completing the Services/Deliverables, subject to the overall direction and supervision of the State and with the participation and support of the State as specified in this Contract. Contractor's duties will include monitoring and reporting the State's performance of its participation and support responsibilities (as well as Contractor's own responsibilities) and providing timely notice to the State in Contractor's reasonable opinion if the State's failure to perform its responsibilities in accordance with the Project Plan is likely to delay the timely achievement of any Contract tasks.

The Contractor will provide the Services/Deliverables directly or through its affiliates, subsidiaries, subcontractors or resellers. Regardless of the entity providing the Service/Deliverable, the Contractor will act as a single point of contact coordinating these entities to meet the State's need for Services/Deliverables. Nothing in this Contract, however, shall be construed to authorize or require any party to violate any applicable law or regulation in its performance of this Contract.

2.068 Contractor Return of State Equipment/Resources

The Contractor must return to the State any State-furnished equipment, facilities and other resources when no longer required for the Contract in the same condition as when provided by the State, reasonable wear and tear excepted.

2.070 Subcontracting by Contractor**2.071 Contractor full Responsibility**

Contractor shall have full responsibility for the successful performance and completion of all of the Services and Deliverables. The State will consider Contractor to be the sole point of contact with regard to all Contractual matters under this Contract, including payment of any and all charges for Services and Deliverables.

2.072 State Consent to delegation

Contractor shall not delegate any duties under this Contract to a Subcontractor unless the Department of Technology, Management and Budget, Purchasing Operations has given written consent to such delegation.



The State shall have the right of prior written approval of all Subcontractors and to require Contractor to replace any Subcontractors found, in the reasonable judgment of the State, to be unacceptable. The State's request shall be written with reasonable detail outlining the reasons for the removal request. Additionally, the State's request shall be based on legitimate, good faith reasons. Replacement Subcontractor(s) for the removed Subcontractor shall be fully qualified for the position. If the State exercises this right, and the Contractor cannot immediately replace the removed Subcontractor, the State will agree to an equitable adjustment in schedule or other terms that may be affected by the State's required removal. If any such incident with a removed Subcontractor results in delay not reasonable anticipatable under the circumstances and which is attributable to the State, the applicable SLA for the affected Work will not be counted for a time agreed upon by the parties.

2.073 Subcontractor bound to Contract

In any subcontracts entered into by Contractor for the performance of the Services, Contractor shall require the Subcontractor, to the extent of the Services to be performed by the Subcontractor, to be bound to Contractor by the terms of this Contract and to assume toward Contractor all of the obligations and responsibilities that Contractor, by this Contract, assumes toward the State. The State reserves the right to receive copies of and review all subcontracts, although Contractor may delete or mask any proprietary information, including pricing, contained in such Contracts before providing them to the State. The management of any Subcontractor will be the responsibility of Contractor, and Contractor shall remain responsible for the performance of its Subcontractors to the same extent as if Contractor had not subcontracted such performance. Contractor shall make all payments to Subcontractors or suppliers of Contractor. Except as otherwise agreed in writing by the State and Contractor, the State will not be obligated to direct payments for the Services other than to Contractor. The State's written approval of any Subcontractor engaged by Contractor to perform any obligation under this Contract shall not relieve Contractor of any obligations or performance required under this Contract. A list of the Subcontractors, if any, approved by the State as of the execution of this Contract, together with a copy of the applicable subcontract is attached.

2.074 Flow Down

Except where specifically approved in writing by the State on a case-by-case basis, Contractor shall flow down the obligations in **Sections 2.031, 2.060, 2.100, 2.110, 2.120, 2.130, and 2.200** in all of its agreements with any Subcontractors.

2.075 Competitive Selection

The Contractor shall select subcontractors (including suppliers) on a competitive basis to the maximum practical extent consistent with the objectives and requirements of the Contract.

2.080 State Responsibilities

2.81 Equipment

The State will provide only the equipment and resources identified in the Statements of Work and other Contract Exhibits.

2.082 Facilities

The State must designate space as long as it is available and as provided in the Statement of Work, to house the Contractor's personnel whom the parties agree will perform the Services/Deliverables at State facilities (collectively, the "State Facilities"). The Contractor must have reasonable access to, and unless agreed otherwise by the parties in writing must observe and comply with all rules and regulations relating to each of the State Facilities (including hours of operation) used by the Contractor in the course of providing the Services. Contractor agrees that it will not, without the prior written consent of the State, use any State Facilities or access any State information systems provided for the Contractor's use, or to which the Contractor otherwise gains access in the course of performing the Services, for any purpose other than providing the Services to the State.



2.090 Security

2.091 Background Checks

On a case-by-case basis, the State may investigate the Contractor's personnel before they may have access to State facilities and systems. The scope of the background check is at the discretion of the State and the results will be used to determine Contractor personnel eligibility for working within State facilities and systems. The investigations will include Michigan State Police Background checks (ICHAT) and may include the National Crime Information Center (NCIC) Finger Prints. Proposed Contractor personnel may be required to complete and submit an RI-8 Fingerprint Card for the NCIC Finger Print Check. Any request for background checks will be initiated by the State and will be reasonably related to the type of work requested.

All Contractor personnel will also be expected to comply with the State's security and acceptable use policies for State IT equipment and resources. See <http://www.michigan.gov/dit>. Furthermore, Contractor personnel will be expected to agree to the State's security and acceptable use policies before the Contractor personnel will be accepted as a resource to perform work for the State. It is expected the Contractor will present these documents to the prospective employee before the Contractor presents the individual to the State as a proposed resource. Contractor staff will be expected to comply with all Physical Security procedures in place within the facilities where they are working.

2.092 Security Breach Notification

If the Contractor breaches this Section, the Contractor must (i) promptly cure any deficiencies and (ii) comply with any applicable federal and state laws and regulations pertaining to unauthorized disclosures. Contractor and the State will cooperate to mitigate, to the extent practicable, the effects of any breach, intrusion, or unauthorized use or disclosure. Contractor must report to the State in writing any use or disclosure of Confidential Information, whether suspected or actual, other than as provided for by the Contract within 10 days of becoming aware of the use or disclosure or the shorter time period as is reasonable under the circumstances.

2.093 PCI DATA Security Requirements

Contractors with access to credit/debit card cardholder data must adhere to the Payment Card Industry (PCI) Data Security requirements. Contractor agrees that they are responsible for security of cardholder data in their possession. Contractor agrees that data can ONLY be used for assisting the State in completing a transaction, supporting a loyalty program, supporting the State, providing fraud control services, or for other uses specifically required by law.

Contractor agrees to provide business continuity in the event of a major disruption, disaster or failure.

The Contractor will contact the Department of Technology, Management and Budget, Financial Services immediately to advise them of any breaches in security where card data has been compromised. In the event of a security intrusion, the Contractor agrees the Payment Card Industry representative, or a Payment Card Industry approved third party, will be provided with full cooperation and access to conduct a thorough security review. The review will validate compliance with the Payment Card Industry Data Security Standard for protecting cardholder data.

Contractor agrees to properly dispose sensitive cardholder data when no longer needed. The Contractor will continue to treat cardholder data as confidential upon Contract termination.

The Contractor will provide the Department of Technology, Management and Budget, Financial Services documentation showing PCI Data Security certification has been achieved. The Contractor will advise the Department of Technology, Management and Budget, Financial Services of all failures to comply with the PCI Data Security Requirements. Failures include, but are not limited to system scans and self-assessment questionnaires. The Contractor will provide a time line for corrective action.



2.100 Confidentiality

2.101 Confidentiality

Contractor and the State each acknowledge that the other possesses and will continue to possess confidential information that has been developed or received by it. As used in this Section, "Confidential Information" of Contractor must mean all non-public proprietary information of Contractor (other than Confidential Information of the State as defined below), which is marked confidential, restricted, proprietary, or with a similar designation. "Confidential Information" of the State must mean any information which is retained in confidence by the State (or otherwise required to be held in confidence by the State under applicable federal, state and local laws and regulations) or which, in the case of tangible materials provided to Contractor by the State under its performance under this Contract, is marked as confidential, proprietary or with a similar designation by the State. "Confidential Information" excludes any information (including this Contract) that is publicly available under the Michigan FOIA.

2.102 Protection and Destruction of Confidential Information

The State and Contractor will each use at least the same degree of care to prevent disclosing to third parties the Confidential Information of the other as it employs to avoid unauthorized disclosure, publication or dissemination of its own confidential information of like character, but in no event less than reasonable care. Neither Contractor nor the State will (i) make any use of the Confidential Information of the other except as contemplated by this Contract, (ii) acquire any right in or assert any lien against the Confidential Information of the other, or (iii) if requested to do so, refuse for any reason to promptly return the other party's Confidential Information to the other party. Each party will limit disclosure of the other party's Confidential Information to employees and Subcontractors who must have access to fulfill the purposes of this Contract. Disclosure to, and use by, 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 scope of responsibility, 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 and of any Subcontractor having access or continued access to the State's Confidential Information may be required to execute an acknowledgment that the employee has been advised of Contractor's and the Subcontractor's obligations under this Section and of the employee's obligation to Contractor or Subcontractor, as the case may be, to protect the Confidential Information from unauthorized use or disclosure.

Promptly upon termination or cancellation of the Contract for any reason, Contractor must certify to the State that Contractor has destroyed all State Confidential Information.

2.103 Exclusions

Notwithstanding the foregoing, the provisions in this Section will not apply to any particular information which the State or Contractor can demonstrate (i) was, at the time of disclosure to it, in the public domain; (ii) after disclosure to it, is published or otherwise becomes part of the public domain through no fault of the receiving party; (iii) was in the possession of the receiving party at the time of disclosure to it without an obligation of confidentiality; (iv) was received after disclosure to it from a third party who had a lawful right to disclose the information to it without any obligation to restrict its further disclosure; or (v) was independently developed by the receiving party without reference to Confidential Information of the furnishing party. Further, the provisions of this Section will not apply to any particular Confidential Information to the extent the receiving party is required by law to disclose the Confidential Information, provided that the receiving party (i) promptly provides the furnishing party with notice of the legal request, and (ii) assists the furnishing party in resisting or limiting the scope of the disclosure as reasonably requested by the furnishing party.

2.104 No Implied Rights

Nothing contained in this Section must be construed as obligating a party to disclose any particular Confidential Information to the other party, or as granting to or conferring on a party, expressly or impliedly, any right or license to the Confidential Information of the other party.



2.105 Respective Obligations

The parties' respective obligations under this Section must survive the termination or expiration of this Contract for any reason.

2.110 Records and Inspections

2.111 Inspection of Work Performed

The State's authorized representatives must at all reasonable times and with 10 days prior written request, have the right to enter Contractor's premises, or any other places, where the Services are being performed, and must have access, upon reasonable request, to interim drafts of Deliverables or work-in-progress. Upon 10 Days prior written notice and at all reasonable times, the State's representatives must be allowed to inspect, monitor, or otherwise evaluate the work being performed and to the extent that the access will not reasonably interfere or jeopardize the safety or operation of the systems or facilities. Contractor must provide all reasonable facilities and assistance for the State's representatives.

2.112 Examination of Records

For seven years after the Contractor provides any work under this Contract (the "Audit Period"), the State may examine and copy any of Contractor's books, records, documents and papers pertinent to establishing Contractor's compliance with the Contract and with applicable laws and rules. The State must notify the Contractor 20 days before examining the Contractor's books and records. The State does not have the right to review any information deemed confidential by the Contractor to the extent access would require the confidential information to become publicly available. This provision also applies to the books, records, accounts, documents and papers, in print or electronic form, of any parent, affiliated or subsidiary organization of Contractor, or any Subcontractor of Contractor performing services in connection with the Contract.

2.113 Retention of Records

Contractor must maintain at least until the end of the Audit Period all pertinent financial and accounting records (including time sheets and payroll records, and information pertaining to the Contract and to the Services, equipment, and commodities provided under the Contract) pertaining to the Contract according to generally accepted accounting principles and other procedures specified in this Section. Financial and accounting records must be made available, upon request, to the State at any time during the Audit Period. If an audit, litigation, or other action involving Contractor's records is initiated before the end of the Audit Period, the records must be retained until all issues arising out of the audit, litigation, or other action are resolved or until the end of the Audit Period, whichever is later.

2.114 Audit Resolution

If necessary, the Contractor and the State will meet to review each audit report promptly after issuance. The Contractor will respond to each audit report in writing within 30 days from receipt of the report, unless a shorter response time is specified in the report. The Contractor and the State must develop, agree upon and monitor an action plan to promptly address and resolve any deficiencies, concerns, and/or recommendations in the audit report.

2.115 Errors

If the audit demonstrates any errors in the documents provided to the State, then the amount in error must be reflected as a credit or debit on the next invoice and in subsequent invoices until the amount is paid or refunded in full. However, a credit or debit may not be carried for more than four invoices. If a balance remains after four invoices, then the remaining amount will be due as a payment or refund within 45 days of the last quarterly invoice that the balance appeared on or termination of the Contract, whichever is earlier.

In addition to other available remedies, the difference between the payment received and the correct payment amount is greater than 10%, then the Contractor must pay all of the reasonable costs of the audit.



2.120 Warranties

2.121 Warranties and Representations

The Contractor represents and warrants:

- (a) It is capable in all respects of fulfilling and must fulfill all of its obligations under this Contract. The performance of all obligations under this Contract must be provided in a timely, professional, and workman-like manner and must meet the performance and operational standards required under this Contract.
- (b) The Contractor's response to Work Request(s) identify the equipment and software and services necessary for the Deliverable(s) to perform and Services to operate in compliance with the Contract's requirements and other standards of performance.
- (c) It is the lawful owner or licensee of any Deliverable licensed or sold to the State by Contractor or developed by Contractor under this Contract, and Contractor has all of the rights necessary to convey to the State the ownership rights or licensed use, as applicable, of any and all Deliverables. None of the Deliverables provided by Contractor to the State under neither this Contract, nor their use by the State will infringe the patent, copyright, trade secret, or other proprietary rights of any third party.
- (d) If, under this Contract, Contractor procures any equipment, software or other Deliverable for the State (including equipment, software and other Deliverables manufactured, re-marketed or otherwise sold by Contractor under Contractor's name), then in addition to Contractor's other responsibilities with respect to the items in this Contract, Contractor must assign or otherwise transfer to the State or its designees, or afford the State the benefits of, any manufacturer's warranty for the Deliverable.
- (e) The Contract signatory has the power and authority, including any necessary corporate authorizations, necessary to enter into this Contract, on behalf of Contractor.
- (f) It is qualified and registered to transact business in all locations where required.
- (g) Neither the Contractor nor any Affiliates, nor any employee of either, has, must have, or must acquire, any Contractual, financial, business, or other interest, direct or indirect, that would conflict in any manner or degree with Contractor's performance of its duties and responsibilities to the State under this Contract or otherwise create an appearance of impropriety with respect to the award or performance of this Agreement. Contractor must notify the State about the nature of the conflict or appearance of impropriety within two days of learning about it.
- (h) Neither Contractor nor any Affiliates, nor any employee of either has accepted or must accept anything of value based on an understanding that the actions of the Contractor or Affiliates or employee on behalf of the State would be influenced. Contractor must not attempt to influence any State employee by the direct or indirect offer of anything of value.
- (i) Neither Contractor nor any Affiliates, nor any employee of either has paid or agreed to pay any person, other than bona fide employees and consultants working solely for Contractor or the Affiliate, any fee, commission, percentage, brokerage fee, gift, or any other consideration, contingent upon or resulting from the award or making of this Contract.
- (j) The prices proposed by Contractor were arrived at independently, without consultation, communication, or agreement with any other bidder for the purpose of restricting competition; the prices quoted were not knowingly disclosed by Contractor to any other bidder; and no attempt was made by Contractor to induce any other person to submit or not submit a proposal for the purpose of restricting competition.
- (k) All financial statements, reports, and other information furnished by Contractor to the State as part of its response to the RFP or otherwise in connection with the award of this Contract fairly and accurately represent the business, properties, financial condition, and results of operations of Contractor as of the respective dates, or for the respective periods, covered by the financial statements, reports, other information. Since the respective dates or periods covered by the financial statements, reports, or other information, there have been no material adverse changes in the business, properties, financial condition, or results of operations of Contractor.
- (l) All written information furnished to the State by or for the Contractor in connection with this Contract, including its bid, is true, accurate, and complete, and contains no untrue statement of material fact or omits any material fact necessary to make the information not misleading.
- (m) It is not in material default or breach of any other Contract or agreement that it may have with the State or any of its departments, commissions, boards, or agencies. Contractor further represents and warrants that it has not been a party to any Contract with the State or any of its departments that was terminated



by the State or the department within the previous five years for the reason that Contractor failed to perform or otherwise breached an obligation of the Contract.

- (n) If any of the certifications, representations, or disclosures made in the Contractor's original bid response change after Contract award, the Contractor is required to report those changes immediately to the Department of Technology, Management and Budget, Purchasing Operations.

2.122 Warranty of Merchantability-Reserved

2.123 Warranty of Fitness for a Particular Purpose-Reserve

2.124 Warranty of Title

Contractor shall, in providing goods to the State, convey good title in those goods, whose transfer is right and lawful. All goods provided by Contractor shall be delivered free from any security interest, lien, or encumbrance of which the State, at the time of Contracting, has no knowledge. Goods provided by Contractor, under this Contract, shall be delivered free of any rightful claim of any third person by of infringement or the like.

2.125 Equipment Warranty-Reserved

2.126 Equipment to be New-Reserved

2.127 Prohibited Products-Reserved

2.128 Consequences for Breach

In addition to any remedies available in law, if the Contractor breaches any of the warranties contained in this section, the breach may be considered as a default in the performance of a material obligation of this Contract.

2.130 Insurance

2.131 Liability Insurance

The Contractor must provide proof of the minimum levels of insurance coverage as indicated below. The insurance must protect the State from claims that may arise out of or result from the Contractor's performance of services under the terms of this Contract, whether the services are performed by the Contractor, or by any subcontractor, or by anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable.

The Contractor waives all rights against the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees and agents for recovery of damages to the extent these damages are covered by the insurance policies the Contractor is required to maintain under this Contract.

All insurance coverage provided relative to this Contract/Purchase Order is PRIMARY and NON-CONTRIBUTING to any comparable liability insurance (including self-insurances) carried by the State.

The insurance must be written for not less than any minimum coverage specified in this Contract or required by law, whichever is greater.

The insurers selected by Contractor must have an A.M. Best rating of A or better, or as otherwise approved in writing by the State, or if the ratings are no longer available, with a comparable rating from a recognized insurance rating agency. All policies of insurance required in this Contract must be issued by companies that have been approved to do business in the State.

See www.michigan.gov/dleg.

Where specific limits are shown, they are the minimum acceptable limits. If Contractor's policy contains higher limits, the State must be entitled to coverage to the extent of the higher limits.

The Contractor is required to pay for and provide the type and amount of insurance checked ☒ below:



- ☒ 1. Commercial General Liability with the following minimum coverage:
 \$2,000,000 General Aggregate Limit other than Products/Completed Operations
 \$2,000,000 Products/Completed Operations Aggregate Limit
 \$1,000,000 Personal & Advertising Injury Limit
 \$1,000,000 Each Occurrence Limit

The Contractor must list the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees and agents as ADDITIONAL INSUREDS on the Commercial General Liability certificate. The Contractor also agrees to provide evidence that insurance policies contain a waiver of subrogation by the insurance company.

- ☐ 2. If a motor vehicle is used to provide services or products under this Contract, the Contractor must have vehicle liability insurance on any auto including owned, hired and non-owned vehicles used in Contractor's business for bodily injury and property damage as required by law.

The Contractor must list the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees and agents as ADDITIONAL INSUREDS on the vehicle liability certificate. The Contractor also agrees to provide evidence that insurance policies contain a waiver of subrogation by the insurance company.

- ☒ 3. Workers' compensation coverage must be provided according to applicable laws governing the employees and employers work activities in the state of the Contractor's domicile. If a self-insurer provides the applicable coverage, proof must be provided of approved self-insured authority by the jurisdiction of domicile. For employees working outside of the state of qualification, Contractor must provide appropriate certificates of insurance proving mandated coverage levels for the jurisdictions where the employees' activities occur.

Any certificates of insurance received must also provide a list of states where the coverage is applicable.

The Contractor also agrees to provide evidence that insurance policies contain a waiver of subrogation by the insurance company. This provision must not be applicable where prohibited or limited by the laws of the jurisdiction in which the work is to be performed.

- ☒ 4. Employers liability insurance with the following minimum limits:
 \$100,000 each accident
 \$100,000 each employee by disease
 \$500,000 aggregate disease

- ☐ 5. Employee Fidelity, including Computer Crimes, insurance naming the State as a loss payee, providing coverage for direct loss to the State and any legal liability of the State arising out of or related to fraudulent or dishonest acts committed by the employees of Contractor or its Subcontractors, acting alone or in collusion with others, in a minimum amount of one million dollars (\$1,000,000.00) with a maximum deductible of fifty thousand dollars (\$50,000.00).

- ☐ 6. Umbrella or Excess Liability Insurance in a minimum amount of ten million dollars (\$10,000,000.00), which must apply, at a minimum, to the insurance required in Subsection 1 (Commercial General Liability) above.

- ☒ 7. Professional Liability (Errors and Omissions) Insurance with the following minimum coverage: three million dollars (\$3,000,000.00) each occurrence and three million dollars (\$3,000,000.00) annual aggregate.

- ☐ 8. Fire and Personal Property Insurance covering against any loss or damage to the office space used by Contractor for any reason under this Contract, and the equipment, software and other contents of the office space, including without limitation, those contents used by Contractor to provide the Services to the State, up to its replacement value, where the office space and its contents are under the care, custody and control of Contractor. The policy must cover all risks of direct physical loss or damage, including without limitation, flood and earthquake coverage and coverage for computer hardware and software. The State must be endorsed on the policy as a loss payee as its interests appear.



2.132 Subcontractor Insurance Coverage

Except where the State has approved in writing a Contractor subcontract with other insurance provisions, Contractor must require all of its Subcontractors under this Contract to purchase and maintain the insurance coverage as described in this Section for the Contractor in connection with the performance of work by those Subcontractors. Alternatively, Contractor may include any Subcontractors under Contractor's insurance on the coverage required in this Section. Subcontractor(s) must fully comply with the insurance coverage required in this Section. Failure of Subcontractor(s) to comply with insurance requirements does not limit Contractor's liability or responsibility.

2.133 Certificates of Insurance and Other Requirements

Contractor must furnish to DTMB Purchasing Operations, certificate(s) of insurance verifying insurance coverage or providing satisfactory evidence of self-insurance as required in this Section (the "Certificates"). The Certificate must be on the standard "accord" form or equivalent. **The Contract Number or the Purchase Order Number must be shown on the Certificate Of Insurance To Assure Correct Filing.** All Certificate(s) are to be prepared and submitted by the Insurance Provider. All Certificate(s) must contain a provision indicating that coverage afforded under the policies WILL NOT BE CANCELLED, MATERIALLY CHANGED, OR NOT RENEWED without 30 days prior written notice, except for 10 days for non-payment of premium, having been given to the Director of Purchasing Operations, Department of Technology, Management and Budget. The notice must include the Contract or Purchase Order number affected. Before the Contract is signed, and not less than 20 days before the insurance expiration date every year thereafter, the Contractor must provide evidence that the State and its agents, officers and employees are listed as additional insured under each commercial general liability and commercial automobile liability policy. In the event the State approves the representation of the State by the insurer's attorney, the attorney may be required to be designated as a Special Assistant Attorney General by the Attorney General of the State of Michigan.

The Contractor must maintain all required insurance coverage throughout the term of the Contract and any extensions and, in the case of claims-made Commercial General Liability policies, must secure tail coverage for at least three years following the expiration or termination for any reason of this Contract. The minimum limits of coverage specified above are not intended, and must not be construed; to limit any liability or indemnity of Contractor under this Contract to any indemnified party or other persons. Contractor is responsible for all deductibles with regard to the insurance. If the Contractor fails to pay any premium for required insurance as specified in this Contract, or if any insurer cancels or significantly reduces any required insurance as specified in this Contract without the State's written consent, then the State may, after the State has given the Contractor at least 30 days written notice, pay the premium or procure similar insurance coverage from another company or companies. The State may deduct any part of the cost from any payment due the Contractor, or the Contractor must pay that cost upon demand by the State.

2.140 Indemnification

2.141 General Indemnification

To the extent permitted by law, the Contractor must indemnify, defend and hold harmless the State from liability, including all claims and losses, and all related costs and expenses (including reasonable attorneys' fees and costs of investigation, litigation, settlement, judgments, interest and penalties), accruing or resulting to any person, firm or corporation that may be injured or damaged by the Contractor in the performance of this Contract and that are attributable to the negligence or tortious acts of the Contractor or any of its subcontractors, or by anyone else for whose acts any of them may be liable.

2.142 Code Indemnification

To the extent permitted by law, the Contractor shall indemnify, defend and hold harmless the State from any claim, loss, or expense arising from Contractor's breach of the No Surreptitious Code Warranty.



2.143 Employee Indemnification

In any claims against the State of Michigan, its departments, divisions, agencies, sections, commissions, officers, employees and agents, by any employee of the Contractor or any of its subcontractors, the indemnification obligation under the Contract must not be limited in any way by the amount or type of damages, compensation or benefits payable by or for the Contractor or any of its subcontractors under worker's disability compensation acts, disability benefit acts or other employee benefit acts. This indemnification clause is intended to be comprehensive. Any overlap in provisions, or the fact that greater specificity is provided as to some categories of risk, is not intended to limit the scope of indemnification under any other provisions.

2.144 Patent/Copyright Infringement Indemnification

To the extent permitted by law, the Contractor must indemnify, defend and hold harmless the State from and against all losses, liabilities, damages (including taxes), and all related costs and expenses (including reasonable attorneys' fees and costs of investigation, litigation, settlement, judgments, interest and penalties) incurred in connection with any action or proceeding threatened or brought against the State to the extent that the action or proceeding is based on a claim that any piece of equipment, software, commodity or service supplied by the Contractor or its subcontractors, or the operation of the equipment, software, commodity or service, or the use or reproduction of any documentation provided with the equipment, software, commodity or service infringes any United States patent, copyright, trademark or trade secret of any person or entity, which is enforceable under the laws of the United States.

In addition, should the equipment, software, commodity, or service, or its operation, become or in the State's or Contractor's opinion be likely to become the subject of a claim of infringement, the Contractor must at the Contractor's sole expense (i) procure for the State the right to continue using the equipment, software, commodity or service or, if the option is not reasonably available to the Contractor, (ii) replace or modify to the State's satisfaction the same with equipment, software, commodity or service of equivalent function and performance so that it becomes non-infringing, or, if the option is not reasonably available to Contractor, (iii) accept its return by the State with appropriate credits to the State against the Contractor's charges and reimburse the State for any losses or costs incurred as a consequence of the State ceasing its use and returning it.

Notwithstanding the foregoing, the Contractor has no obligation to indemnify or defend the State for, or to pay any costs, damages or attorneys' fees related to, any claim based upon (i) equipment developed based on written specifications of the State; (ii) use of the equipment in a configuration other than implemented or approved in writing by the Contractor, including, but not limited to, any modification of the equipment by the State; or (iii) the combination, operation, or use of the equipment with equipment or software not supplied by the Contractor under this Contract.

2.145 Continuation of Indemnification Obligations

The Contractor's duty to indemnify under this Section continues in full force and effect, notwithstanding the expiration or early cancellation of the Contract, with respect to any claims based on facts or conditions that occurred before expiration or cancellation.

2.146 Indemnification Procedures

The procedures set forth below must apply to all indemnity obligations under this Contract.

- (a) After the State receives notice of the action or proceeding involving a claim for which it will seek indemnification, the State must promptly notify Contractor of the claim in writing and take or assist Contractor in taking, as the case may be, any reasonable action to avoid the imposition of a default judgment against Contractor. No failure to notify the Contractor relieves the Contractor of its indemnification obligations except to the extent that the Contractor can prove damages attributable to the failure. Within 10 days following receipt of written notice from the State relating to any claim, the Contractor must notify the State in writing whether Contractor agrees to assume control of the defense and settlement of that claim (a "Notice of Election"). After notifying Contractor of a claim and before the State receiving Contractor's Notice of Election, the State is entitled to defend against the claim, at the



Contractor's expense, and the Contractor will be responsible for any reasonable costs incurred by the State in defending against the claim during that period.

- (b) If Contractor delivers a Notice of Election relating to any claim: (i) the State is entitled to participate in the defense of the claim and to employ counsel at its own expense to assist in the handling of the claim and to monitor and advise the State about the status and progress of the defense; (ii) the Contractor must, at the request of the State, demonstrate to the reasonable satisfaction of the State, the Contractor's financial ability to carry out its defense and indemnity obligations under this Contract; (iii) the Contractor must periodically advise the State about the status and progress of the defense and must obtain the prior written approval of the State before entering into any settlement of the claim or ceasing to defend against the claim and (iv) to the extent that any principles of Michigan governmental or public law may be involved or challenged, the State has the right, at its own expense, to control the defense of that portion of the claim involving the principles of Michigan governmental or public law. But the State may retain control of the defense and settlement of a claim by notifying the Contractor in writing within 10 days after the State's receipt of Contractor's information requested by the State under clause (ii) of this paragraph if the State determines that the Contractor has failed to demonstrate to the reasonable satisfaction of the State the Contractor's financial ability to carry out its defense and indemnity obligations under this Section. 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. In the event the insurer's attorney represents the State under this Section, the insurer's attorney may be required to be designated as a Special Assistant Attorney General by the Attorney General of the State of Michigan.
- (c) If Contractor does not deliver a Notice of Election relating to any claim of which it is notified by the State as provided above, the State may defend the claim in the manner as it may deem appropriate, at the cost and expense of Contractor. If it is determined that the claim was one against which Contractor was required to indemnify the State, upon request of the State, Contractor must promptly reimburse the State for all the reasonable costs and expenses.

2.150 Termination/Cancellation

2.151 Notice and Right to Cure

If the Contractor breaches the Contract, and the State in its sole discretion determines that the breach is curable, then the State will provide the Contractor with written notice of the breach and a time period (not less than 30 days) to cure the Breach. The notice of breach and opportunity to cure is inapplicable for successive or repeated breaches or if the State determines in its sole discretion that the breach poses a serious and imminent threat to the health or safety of any person or the imminent loss, damage, or destruction of any real or tangible personal property.

2.152 Termination for Cause

- (a) The State may terminate this Contract, for cause, by notifying the Contractor in writing, if the Contractor (i) breaches any of its material duties or obligations under this Contract (including a Chronic Failure to meet any particular SLA), or (ii) fails to cure a breach within the time period specified in the written notice of breach provided by the State
- (b) If this Contract is terminated for cause, the Contractor must pay all costs incurred by the State in terminating this Contract, including but not limited to, State administrative costs, reasonable attorneys' fees and court costs, and any reasonable additional costs the State may incur to procure the Services/Deliverables required by this Contract from other sources. Re-procurement costs are not consequential, indirect or incidental damages, and cannot be excluded by any other terms otherwise included in this Contract, provided the costs are not in excess of 50% more than the prices for the Service/Deliverables provided under this Contract.
- (c) If the State chooses to partially terminate this Contract for cause, charges payable under this Contract will be equitably adjusted to reflect those Services/Deliverables that are terminated and the State must pay for all Services/Deliverables for which Final Acceptance has been granted provided up to the termination date. Services and related provisions of this Contract that are terminated for cause must cease on the effective date of the termination.
- (d) If the State terminates this Contract for cause under this Section, and it is determined, for any reason, that Contractor was not in breach of Contract under the provisions of this section, that termination for cause



must be deemed to have been a termination for convenience, effective as of the same date, and the rights and obligations of the parties must be limited to that otherwise provided in this Contract for a termination for convenience.

2.153 Termination for Convenience

The State may terminate this Contract for its convenience, in whole or part, if the State determines that a termination is in the State's best interest. Reasons for the termination must be left to the sole discretion of the State and may include, but not necessarily be limited to (a) the State no longer needs the Services or products specified in the Contract, (b) relocation of office, program changes, changes in laws, rules, or regulations make implementation of the Services no longer practical or feasible, (c) unacceptable prices for Additional Services or New Work requested by the State, or (d) falsification or misrepresentation, by inclusion or non-inclusion, of information material to a response to any RFP issued by the State. The State may terminate this Contract for its convenience, in whole or in part, by giving Contractor written notice at least 30 days before the date of termination. If the State chooses to terminate this Contract in part, the charges payable under this Contract must be equitably adjusted to reflect those Services/Deliverables that are terminated. Services and related provisions of this Contract that are terminated for cause must cease on the effective date of the termination.

2.154 Termination for Non-Appropriation

- (a) Contractor acknowledges that, if this Contract extends for several fiscal years, continuation of this Contract is subject to appropriation or availability of funds for this Contract. If funds to enable the State to effect continued payment under this Contract are not appropriated or otherwise made available, the State must terminate this Contract and all affected Statements of Work, in whole or in part, at the end of the last period for which funds have been appropriated or otherwise made available by giving written notice of termination to Contractor. The State must give Contractor at least 30 days advance written notice of termination for non-appropriation or unavailability (or the time as is available if the State receives notice of the final decision less than 30 days before the funding cutoff).
- (b) If funding for the Contract is reduced by law, or funds to pay Contractor for the agreed-to level of the Services or production of Deliverables to be provided by Contractor are not appropriated or otherwise unavailable, the State may, upon 30 days written notice to Contractor, reduce the level of the Services or the change the production of Deliverables in the manner and for the periods of time as the State may elect. The charges payable under this Contract will be equitably adjusted to reflect any equipment, services or commodities not provided by reason of the reduction.
- (c) If the State terminates this Contract, eliminates certain Deliverables, or reduces the level of Services to be provided by Contractor under this Section, the State must pay Contractor for all Work-in-Process performed through the effective date of the termination or reduction in level, as the case may be and as determined by the State, to the extent funds are available. This Section will not preclude Contractor from reducing or stopping Services/Deliverables or raising against the State in a court of competent jurisdiction, any claim for a shortfall in payment for Services performed or Deliverables finally accepted before the effective date of termination.

2.155 Termination for Criminal Conviction

The State may terminate this Contract immediately and without further liability or penalty in the event Contractor, an officer of Contractor, or an owner of a 25% or greater share of Contractor is convicted of a criminal offense related to a State, public or private Contract or subcontract.

2.156 Termination for Approvals Rescinded

The State may terminate this Contract if any final administrative or judicial decision or adjudication disapproves a previously approved request for purchase of personal services under Constitution 1963, Article 11, § 5, and Civil Service Rule 7-1. In that case, the State will pay the Contractor for only the work completed to that point under the Contract. Termination may be in whole or in part and may be immediate as of the date of the written notice to Contractor or may be effective as of the date stated in the written notice.

2.157 Rights and Obligations upon Termination

- (a) If the State terminates this Contract for any reason, the Contractor must (a) stop all work as specified in the notice of termination, (b) take any action that may be necessary, or that the State may direct, for



- preservation and protection of Deliverables or other property derived or resulting from this Contract that may be in Contractor's possession, (c) return all materials and property provided directly or indirectly to Contractor by any entity, agent or employee of the State, (d) transfer title in, and deliver to, the State, unless otherwise directed, all Deliverables intended to be transferred to the State at the termination of the Contract and which are resulting from the Contract (which must be provided to the State on an "As-Is" basis except to the extent the amounts paid by the State in respect of the items included compensation to Contractor for the provision of warranty services in respect of the materials), and (e) take any action to mitigate and limit any potential damages, or requests for Contractor adjustment or termination settlement costs, to the maximum practical extent, including terminating or limiting as otherwise applicable those subcontracts and outstanding orders for material and supplies resulting from the terminated Contract.
- (b) If the State terminates this Contract before its expiration for its own convenience, the State must pay Contractor for all charges due for Services provided before the date of termination and, if applicable, as a separate item of payment under this Contract, for Work In Process, on a percentage of completion basis at the level of completion determined by the State. All completed or partially completed Deliverables prepared by Contractor under this Contract, at the option of the State, becomes the State's property, and Contractor is entitled to receive equitable fair compensation for the Deliverables. Regardless of the basis for the termination, the State is not obligated to pay, or otherwise compensate, Contractor for any lost expected future profits, costs or expenses incurred with respect to Services not actually performed for the State.
- (c) Upon a good faith termination, the State may assume, at its option, any subcontracts and agreements for services and deliverables provided under this Contract, and may further pursue completion of the Services/Deliverables under this Contract by replacement Contract or otherwise as the State may in its sole judgment deem expedient.

2.158 Reservation of Rights

Any termination of this Contract or any Statement of Work issued under it by a party must be with full reservation of, and without prejudice to, any rights or remedies otherwise available to the party with respect to any claims arising before or as a result of the termination.

2.160 Termination by Contractor

2.161 Termination by Contractor

If the State breaches the Contract, and the Contractor in its sole discretion determines that the breach is curable, then the Contractor will provide the State with written notice of the breach and a time period (not less than 30 days) to cure the breach. The Notice of Breach and opportunity to cure is inapplicable for successive and repeated breaches.

The Contractor may terminate this Contract if the State (i) materially breaches its obligation to pay the Contractor undisputed amounts due and owing under this Contract, (ii) breaches its other obligations under this Contract to an extent that makes it impossible or commercially impractical for the Contractor to perform the Services, or (iii) does not cure the breach within the time period specified in a written notice of breach. But the Contractor must discharge its obligations under **Section 2.160** before it terminates the Contract.

2.170 Transition Responsibilities

2.171 Contractor Transition Responsibilities

If the State terminates this Contract, for convenience or cause, or if the Contract is otherwise dissolved, voided, rescinded, nullified, expires or rendered unenforceable, the Contractor agrees to comply with direction provided by the State to assist in the orderly transition of equipment, services, software, leases, etc. to the State or a third party designated by the State. If this Contract expires or terminates, the Contractor agrees to make all reasonable efforts to effect an orderly transition of services within a reasonable period of time that in no event will exceed 90 days. These efforts must include, but are not limited to, those listed in **Sections 2.141, 2.142, 2.143, 2.144, and 2.145.**



2.172 Contractor Personnel Transition

The Contractor must work with the State, or a specified third party, to develop a transition plan setting forth the specific tasks and schedule to be accomplished by the parties, to effect an orderly transition. The Contractor must allow as many personnel as practicable to remain on the job to help the State, or a specified third party, maintain the continuity and consistency of the services required by this Contract. In addition, during or following the transition period, in the event the State requires the Services of the Contractor's subcontractors or vendors, as necessary to meet its needs, Contractor agrees to reasonably, and with good-faith, work with the State to use the Services of Contractor's subcontractors or vendors. Contractor will notify all of Contractor's subcontractors of procedures to be followed during transition.

2.173 Contractor Information Transition

The Contractor agrees to provide reasonable detailed specifications for all Services/Deliverables needed by the State, or specified third party, to properly provide the Services/Deliverables required under this Contract. The Contractor will provide the State with asset management data generated from the inception of this Contract through the date on which this Contractor is terminated in a comma-delineated format unless otherwise requested by the State. The Contractor will deliver to the State any remaining owed reports and documentation still in Contractor's possession subject to appropriate payment by the State.

2.174 Contractor Software Transition

The Contractor must reasonably assist the State in the acquisition of any Contractor software required to perform the Services/use the Deliverables under this Contract. This must include any documentation being used by the Contractor to perform the Services under this Contract. If the State transfers any software licenses to the Contractor, those licenses must, upon expiration of the Contract, transfer back to the State at their current revision level. Upon notification by the State, Contractor may be required to freeze all non-critical changes to Deliverables/Services.

2.175 Transition Payments

If the transition results from a termination for any reason, the termination provisions of this Contract must govern reimbursement. If the transition results from expiration, the Contractor will be reimbursed for all reasonable transition costs (i.e. costs incurred within the agreed period after Contract expiration that result from transition operations) at the rates agreed upon by the State. The Contractor will prepare an accurate accounting from which the State and Contractor may reconcile all outstanding accounts.

2.176 State Transition Responsibilities

In the event that this Contract is terminated, dissolved, voided, rescinded, nullified, or otherwise rendered unenforceable, the State agrees to reconcile all accounts between the State and the Contractor, complete any pending post-project reviews and perform any others obligations upon which the State and the Contractor agree.

- (a) Reconciling all accounts between the State and the Contractor;
- (b) Completing any pending post-project reviews.

2.180 Stop Work

2.181 Stop Work Orders

The State may, at any time, by written stop work order to Contractor, require that Contractor stop all, or any part, of the work called for by the Contract for a period of up to 90 calendar days after the stop work order is delivered to Contractor, and for any further period to which the parties may agree. The stop work order must be identified as a stop work order and must indicate that it is issued under this **Section 2.150**. Upon receipt of the stop work order, Contractor must immediately comply with its terms and take all reasonable steps to minimize incurring costs allocable to the work covered by the stop work order during the period of work stoppage. Within the period of the stop work order, the State must either: (a) cancel the stop work order; or (b) terminate the work covered by the stop work order as provided in **Section 2.130**.



2.182 Cancellation or Expiration of Stop Work Order

The Contractor must resume work if the State cancels a Stop Work Order or if it expires. The parties will agree upon an equitable adjustment in the delivery schedule, the Contract price, or both, and the Contract must be modified, in writing, accordingly, if: (a) the stop work order results in an increase in the time required for, or in Contractor's costs properly allocable to, the performance of any part of the Contract; and (b) Contractor asserts its right to an equitable adjustment within 30 calendar days after the end of the period of work stoppage; provided that, if the State decides the facts justify the action, the State may receive and act upon a Contractor proposal submitted at any time before final payment under the Contract. Any adjustment will conform to the requirements of **Section 2.024**.

2.183 Allowance of Contractor Costs

If the stop work order is not canceled and the work covered by the stop work order is terminated for reasons other than material breach, the termination must be deemed to be a termination for convenience under **Section 2.153**, and the State will pay reasonable costs resulting from the stop work order in arriving at the termination settlement. For the avoidance of doubt, the State is not liable to Contractor for loss of profits because of a stop work order issued under this Section.

2.190 Dispute Resolution

2.191 In General

Any claim, counterclaim, or dispute between the State and Contractor arising out of or relating to the Contract or any Statement of Work must be resolved as follows. For all Contractor claims seeking an increase in the amounts payable to Contractor under the Contract, or the time for Contractor's performance, Contractor must submit a letter, together with all data supporting the claims, executed by Contractor's Contract Administrator or the Contract Administrator's designee certifying that (a) the claim is made in good faith, (b) the amount claimed accurately reflects the adjustments in the amounts payable to Contractor or the time for Contractor's performance for which Contractor believes the State is liable and covers all costs of every type to which Contractor is entitled from the occurrence of the claimed event, and (c) the claim and the supporting data are current and complete to Contractor's best knowledge and belief.

2.192 Informal Dispute Resolution

(a) All disputes between the parties must be resolved under the Contract Management procedures in this Contract. If the parties are unable to resolve any disputes after compliance with the processes, the parties must meet with the Director of Purchasing Operations, DTMB, or designee, for the purpose of attempting to resolve the dispute without the need for formal legal proceedings, as follows:

(1) The representatives of Contractor and the State must meet as often as the parties reasonably deem necessary to gather and furnish to each other all information with respect to the matter in issue which the parties believe to be appropriate and germane in connection with its resolution. The representatives must discuss the problem and negotiate in good faith in an effort to resolve the dispute without the necessity of any formal proceeding.

(2) During the course of negotiations, all reasonable requests made by one party to another for non-privileged information reasonably related to the Contract will be honored in order that each of the parties may be fully advised of the other's position.

(3) The specific format for the discussions will be left to the discretion of the designated State and Contractor representatives, but may include the preparation of agreed upon statements of fact or written statements of position.

(4) Following the completion of this process, the Director of Purchasing Operations, DTMB, or designee, must issue a written opinion regarding the issue(s) in dispute within 30 calendar days. The opinion regarding the dispute must be considered the State's final action and the exhaustion of administrative remedies.

(b) This Section will not be construed to prevent either party from instituting, and a party is authorized to institute, formal proceedings earlier to avoid the expiration of any applicable limitations period, to preserve a superior position with respect to other creditors, or under Section 2.193.

(c) The State will not mediate disputes between the Contractor and any other entity, except state agencies, concerning responsibility for performance of work under the Contract.



2.193 Injunctive Relief

The only circumstance in which disputes between the State and Contractor will not be subject to the provisions of **Section 2.192** is where a party makes a good faith determination that a breach of the terms of the Contract by the other party is the that the damages to the party resulting from the breach will be so immediate, so large or severe and so incapable of adequate redress after the fact that a temporary restraining order or other immediate injunctive relief is the only adequate remedy.

2.194 Continued Performance

Each party agrees to continue performing its obligations under the Contract while a dispute is being resolved except to the extent the issue in dispute precludes performance (dispute over payment must not be deemed to preclude performance) and without limiting either party's right to terminate the Contract as provided in **Section 2.150**, as the case may be.

2.200 Federal and State Contract Requirements

2.201 Nondiscrimination

In the performance of the Contract, Contractor agrees not to discriminate against any employee or applicant for employment, with respect to his or her hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of race, color, religion, national origin, ancestry, age, sex, height, weight, and marital status, physical or mental disability. Contractor further agrees that every subcontract entered into for the performance of this Contract or any purchase order resulting from this Contract will contain a provision requiring non-discrimination in employment, as specified here, binding upon each Subcontractor. This covenant is required under the Elliot 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., and any breach of this provision may be regarded as a material breach of the Contract.

2.202 Unfair Labor Practices

Under 1980 PA 278, MCL 423.321, et seq., the State must not award a Contract or subcontract to an employer whose name appears in the current register of employers failing to correct an unfair labor practice compiled under section 2 of the Act. This information is compiled by the United States National Labor Relations Board. A Contractor of the State, in relation to the Contract, must not enter into a Contract with a Subcontractor, manufacturer, or supplier whose name appears in this register. Under section 4 of 1980 PA 278, MCL 423.324, the State may void any Contract if, after award of the Contract, the name of Contractor as an employer or the name of the Subcontractor, manufacturer or supplier of Contractor appears in the register.

2.203 Workplace Safety and Discriminatory Harassment

In performing Services for the State, the Contractor must comply with the Department of Civil Services Rule 2-20 regarding Workplace Safety and Rule 1-8.3 regarding Discriminatory Harassment. In addition, the Contractor must comply with Civil Service regulations and any applicable agency rules provided to the Contractor. For Civil Service Rules, see <http://www.mi.gov/mdcs/0,1607,7-147-6877---,00.html>.

2.204 Prevailing Wage

The rates of wages and fringe benefits to be paid each class of individuals employed by the Contractor, its subcontractors, their subcontractors, and all persons involved with the performance of this Contract in privity of Contract with the Contractor shall not be less than the wage rates and fringe benefits established by the Michigan Department of Labor and Economic Development, Wage and Hour Bureau, schedule of occupational classification and wage rates and fringe benefits for the local where the work is to be performed. The term Contractor shall include all general Contractors, prime Contractors, project managers, trade Contractors, and all of their Contractors or subcontractors and persons in privity of Contract with them.

The Contractor, its subcontractors, their subcontractors and all persons involved with the performance of this Contract in privity of Contract with the Contractor shall keep posted on the work site, in a conspicuous place, a copy of all wage rates and fringe benefits as prescribed in the Contract. You must also post, in a conspicuous place, the address and telephone number of the Michigan Department of Labor and Economic Development, the office responsible for enforcement of the wage rates and fringe benefits. You shall keep an accurate



record showing the name and occupation of the actual wage and benefits paid to each individual employed in connection with this Contract. This record shall be available to the State upon request for reasonable inspection.

If any trade is omitted from the list of wage rates and fringe benefits to be paid to each class of individuals by the Contractor, it is understood that the trades omitted shall also be paid not less than the wage rate and fringe benefits prevailing in the local where the work is to be performed.

2.210 Governing Law

2.211 Governing Law

The Contract must in all respects be governed by, and construed according to, the substantive laws of the State of Michigan without regard to any Michigan choice of law rules that would apply the substantive law of any other jurisdiction to the extent not inconsistent with, or pre-empted by federal law.

2.212 Compliance with Laws

Contractor shall comply with all applicable state, federal and local laws and ordinances in providing the Services/Deliverables.

2.213 Jurisdiction

Any dispute arising from the Contract must be resolved in the State of Michigan. With respect to any claim between the parties, Contractor consents to venue in Ingham County, Michigan, and irrevocably waives any objections it may have to the jurisdiction on the grounds of lack of personal jurisdiction of the court or the laying of venue of the court or on the basis of forum non conveniens or otherwise. Contractor agrees to appoint agents in the State of Michigan to receive service of process.

2.220 Limitation of Liability

2.221 Limitation of Liability

Neither the Contractor nor the State is liable to each other, regardless of the form of action, for consequential, incidental, indirect, or special damages. This limitation of liability does not apply to claims for infringement of United States patent, copyright, trademark or trade secrets; to claims for personal injury or damage to property caused by the gross negligence or willful misconduct of the Contractor; to claims covered by other specific provisions of this Contract calling for liquidated damages; or to court costs or attorney's fees awarded by a court in addition to damages after litigation based on this Contract.

The Contractor's liability for damages to the State is limited to two times the value of the Individual Statement of Work or \$500,000 which ever is higher. The foregoing limitation of liability does not apply to claims for infringement of United States patent, copyright, trademarks or trade secrets; to claims for personal injury or damage to property caused by the gross negligence or willful misconduct of the Contractor; to claims covered by other specific provisions of this Contract calling for liquidated damages; or to court costs or attorney's fees awarded by a court in addition to damages after litigation based on this Contract.

The State's liability for damages to the Contractor is limited to the value of the Contract.

2.230 Disclosure Responsibilities

2.231 Disclosure of Litigation

Contractor must disclose any material criminal litigation, investigations or proceedings involving the Contractor (and each Subcontractor) or any of its officers or directors or any litigation, investigations or proceedings under the Sarbanes-Oxley Act. In addition, each Contractor (and each Subcontractor) must notify the State of any material civil litigation, arbitration or proceeding which arises during the term of the Contract and extensions, to which Contractor (or, to the extent Contractor is aware, any Subcontractor) is a party, and which involves: (i) disputes that might reasonably be expected to adversely affect the viability or financial stability of Contractor or any Subcontractor; or (ii) a claim or written allegation of fraud against Contractor or, to the extent Contractor is aware, any Subcontractor by a governmental or public entity arising out of their business dealings with



governmental or public entities. The Contractor must disclose in writing to the Contract Administrator any litigation, investigation, arbitration or other proceeding (collectively, "Proceeding") within 30 days of its occurrence. Details of settlements that are prevented from disclosure by the terms of the settlement may be annotated. Information provided to the State from Contractor's publicly filed documents referencing its material litigation will be deemed to satisfy the requirements of this Section.

If any Proceeding disclosed to the State under this Section, or of which the State otherwise becomes aware, during the term of this Contract would cause a reasonable party to be concerned about:

- (a) the ability of Contractor (or a Subcontractor) to continue to perform this Contract according to its terms and conditions, or
- (b) whether Contractor (or a Subcontractor) in performing Services for the State is engaged in conduct which is similar in nature to conduct alleged in the Proceeding, which conduct would constitute a breach of this Contract or a violation of Michigan law, regulations or public policy, then the Contractor must provide the State all reasonable assurances requested by the State to demonstrate that:
 - (1) Contractor and its Subcontractors will be able to continue to perform this Contract and any Statements of Work according to its terms and conditions, and
 - (2) Contractor and its Subcontractors have not and will not engage in conduct in performing the Services which is similar in nature to the conduct alleged in the Proceeding.
- (c) Contractor must make the following notifications in writing:
 - (1) Within 30 days of Contractor becoming aware that a change in its ownership or officers has occurred, or is certain to occur, or a change that could result in changes in the valuation of its capitalized assets in the accounting records, Contractor must notify DTMB Purchasing Operations.
 - (2) Contractor must also notify DMB Purchasing Operations within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership or officers.
 - (3) Contractor must also notify DMB Purchase Operations within 30 days whenever changes to company affiliations occur.

2.232 Call Center Disclosure

Contractor and/or all subcontractors involved in the performance of this Contract providing call or contact center services to the State must disclose the location of its call or contact center services to inbound callers. Failure to disclose this information is a material breach of this Contract.

2.233 Bankruptcy

The State may, without prejudice to any other right or remedy, terminate this Contract, in whole or in part, and, at its option, may take possession of the "Work in Process" and finish the Works in Process by whatever appropriate method the State may deem expedient if:

- (a) the Contractor files for protection under the bankruptcy laws;
- (b) an involuntary petition is filed against the Contractor and not removed within 30 days;
- (c) the Contractor becomes insolvent or if a receiver is appointed due to the Contractor's insolvency;
- (d) the Contractor makes a general assignment for the benefit of creditors; or
- (e) the Contractor or its affiliates are unable to provide reasonable assurances that the Contractor or its affiliates can deliver the services under this Contract.

Contractor will fix appropriate notices or labels on the Work in Process to indicate ownership by the State. To the extent reasonably possible, materials and Work in Process must be stored separately from other stock and marked conspicuously with labels indicating ownership by the State.



2.240 Performance

2.241 Time of Performance

- (a) Contractor must use commercially reasonable efforts to provide the resources necessary to complete all Services and Deliverables according to the time schedules contained in the Statements of Work and other Exhibits governing the work, and with professional quality.
- (b) Without limiting the generality of **Section 2.241**, Contractor must notify the State in a timely manner upon becoming aware of any circumstances that may reasonably be expected to jeopardize the timely and successful completion of any Deliverables/Services on the scheduled due dates in the latest State-approved delivery schedule and must inform the State of the projected actual delivery date.
- (c) If the Contractor believes that a delay in performance by the State has caused or will cause the Contractor to be unable to perform its obligations according to specified Contract time periods, the Contractor must notify the State in a timely manner and must use commercially reasonable efforts to perform its obligations according to the Contract time periods notwithstanding the State's failure. Contractor will not be in default for a delay in performance to the extent the delay is caused by the State.

2.242 Service Level Agreement (SLA)

- (a) SLAs will be completed with the following operational considerations:
 - (1) SLAs will not be calculated for individual Incidents where any event of Excusable Failure has been determined; Incident means any interruption in Services.
 - (2) SLAs will not be calculated for individual Incidents where loss of service is planned and where the State has received prior notification or coordination.
 - (3) SLAs will not apply if the applicable Incident could have been prevented through planning proposed by Contractor and not implemented at the request of the State. To invoke this consideration, complete documentation relevant to the denied planning proposal must be presented to substantiate the proposal.
 - (4) Time period measurements will be based on the time Incidents are received by the Contractor and the time that the State receives notification of resolution based on 24x7x365 time period, except that the time period measurement will be suspended based on the following:
 - (i) Time period(s) will not apply where Contractor does not have access to a physical State Location and where access to the State Location is necessary for problem identification and resolution.
 - (ii) Time period(s) will not apply where Contractor needs to obtain timely and accurate information or appropriate feedback and is unable to obtain timely and accurate information or appropriate feedback from the State.
- (b) Chronic Failure for any Service(s) will be defined as three unscheduled outage(s) or interruption(s) on any individual Service for the same reason or cause or if the same reason or cause was reasonably discoverable in the first instance over a rolling 30 day period. Chronic Failure will result in the State's option to terminate the effected individual Service(s) and procure them from a different vendor for the chronic location(s) with Contractor to pay the difference in charges for up to three additional months. The termination of the Service will not affect any tiered pricing levels.
- (c) Root Cause Analysis will be performed on any Business Critical outage(s) or outage(s) on Services when requested by the Contract Administrator. Contractor will provide its analysis within two weeks of outage(s) and provide a recommendation for resolution.
- (d) All decimals must be rounded to two decimal places with five and greater rounding up and four and less rounding down unless otherwise specified.

2.243 Liquidated Damages - Reserved

2.244 Excusable Failure

Neither party will be liable for any default, damage or delay in the performance of its obligations under the Contract to the extent the default, damage or delay is caused by government regulations or requirements (executive, legislative, judicial, military or otherwise), power failure, electrical surges or current fluctuations, lightning, earthquake, war, water or other forces of nature or acts of God, delays or failures of transportation, equipment shortages, suppliers' failures, or acts or omissions of common carriers, fire; riots, civil disorders;



strikes or other labor disputes, embargoes; injunctions (provided the injunction was not issued as a result of any fault or negligence of the party seeking to have its default or delay excused); or any other cause beyond the reasonable control of a party; provided the non-performing party and its Subcontractors are without fault in causing the default or delay, and the default or delay could not have been prevented by reasonable precautions and cannot reasonably be circumvented by the non-performing party through the use of alternate sources, workaround plans or other means, including disaster recovery plans.

If a party does not perform its Contractual obligations for any of the reasons listed above, the non-performing party will be excused from any further performance of its affected obligation(s) for as long as the circumstances prevail. But the party must use commercially reasonable efforts to recommence performance whenever and to whatever extent possible without delay. A party must promptly notify the other party in writing immediately after the excusable failure occurs, and also when it abates or ends.

If any of the above-enumerated circumstances substantially prevent, hinder, or delay the Contractor's performance of the Services/provision of Deliverables for more than 10 Business Days, and the State determines that performance is not likely to be resumed within a period of time that is satisfactory to the State in its reasonable discretion, then at the State's option: (a) the State may procure the affected Services/Deliverables from an alternate source, and the State is not be liable for payment for the unperformed Services/ Deliverables not provided under the Contract for so long as the delay in performance continues; (b) the State may terminate any portion of the Contract so affected and the charges payable will be equitably adjusted to reflect those Services/Deliverables terminated; or (c) the State may terminate the affected Statement of Work without liability to Contractor as of a date specified by the State in a written notice of termination to the Contractor, except to the extent that the State must pay for Services/Deliverables provided through the date of termination.

The Contractor will not have the right to any additional payments from the State as a result of any Excusable Failure occurrence or to payments for Services not rendered/Deliverables not provided as a result of the Excusable Failure condition. Defaults or delays in performance by Contractor which are caused by acts or omissions of its Subcontractors will not relieve Contractor of its obligations under the Contract except to the extent that a Subcontractor is itself subject to an Excusable Failure condition described above and Contractor cannot reasonably circumvent the effect of the Subcontractor's default or delay in performance through the use of alternate sources, workaround plans or other means.

2.250 Approval of Deliverables

2.251 Delivery of Deliverables

A list of the Deliverables to be prepared and delivered by Contractor including, for each Deliverable, the scheduled delivery date and a designation of whether the Deliverable is a document ("Written Deliverable") or a Custom Software Deliverable is attached, if applicable. All Deliverables shall be completed and delivered for State review and written approval and, where applicable, installed in accordance with the State-approved delivery schedule and any other applicable terms and conditions of this Contract.

Prior to delivering any Deliverable to the State, Contractor will first perform all required quality assurance activities, and, in the case of Custom Software Deliverables, System Testing to verify that the Deliverable is complete and in conformance with its specifications. Before delivering a Deliverable to the State, Contractor shall certify to the State that (1) it has performed such quality assurance activities, (2) it has performed any applicable testing, (3) it has corrected all material deficiencies discovered during such quality assurance activities and testing, (4) the Deliverable is in a suitable state of readiness for the State's review and approval, and (5) the Deliverable/Service has all Critical Security patches/updates applied.

In discharging its obligations under this Section, Contractor shall be at all times (except where the parties agree otherwise in writing) in compliance with Level 3 of the Software Engineering Institute's Capability Maturity Model for Software ("CMM Level 3") or its equivalent.

2.252 Contractor System Testing



Contractor will be responsible for System Testing each Custom Software Deliverable in Contractor's development environment prior to turning over the Custom Software Deliverable to the State for User Acceptance Testing and approval. Contractor's System Testing shall include the following, at a minimum, plus any other testing required by CMM Level 3 or Contractor's system development methodology:

Contractor will be responsible for performing Unit Testing and incremental Integration Testing of the components of each Custom Software Deliverable.

Contractor's System Testing will also include Integration Testing of each Custom Software Deliverable to ensure proper inter-operation with all prior software Deliverables, interfaces and other components that are intended to inter-operate with such Custom Software Deliverable, and will include Regression Testing, volume and stress testing to ensure that the Custom Software Deliverables are able to meet the State's projected growth in the number and size of transactions to be processed by the Application and number of users, as such projections are set forth in the applicable Statement of Work.

Contractor's System Testing will also include Business Function Testing and Technical Testing of each Application in a simulated production environment. Business Function Testing will include testing of full work streams that flow through the Application as the Application will be incorporated within the State's computing environment. The State shall participate in and provide support for the Business Function Testing to the extent reasonably requested by Contractor. Within ten (10) days before the commencement of Business Function Testing pursuant to this Section, Contractor shall provide the State for State review and written approval Contractor's test plan for Business Function Testing.

Within five (5) Business Days following the completion of System Testing pursuant to this **Section**, Contractor shall provide to the State a testing matrix establishing that testing for each condition identified in the System Testing plans has been conducted and successfully concluded. To the extent that testing occurs on State premises, the State shall be entitled to observe or otherwise participate in testing under this Section as the State may elect.



2.253 Approval of Deliverables, In General

All Deliverables (Written Deliverables and Custom Software Deliverables) require formal written approval by the State, in accordance with the following procedures. Formal approval by the State requires that the Deliverable be confirmed in writing by the State to meet its specifications, which, in the case of Custom Software Deliverables, will include the successful completion of State User Acceptance Testing, to be led by the State with the support and assistance of Contractor. The parties acknowledge that the approval process set forth herein will be facilitated by ongoing consultation between the parties, visibility of interim and intermediate Deliverables and collaboration on key decisions.

The State's obligation to comply with any State Review Period is conditioned on the timely delivery of Deliverables being reviewed. If Contractor fails to provide a Deliverable to the State in a timely manner, the State will nevertheless use commercially reasonable efforts to complete its review or testing within the applicable State Review Period.

Before commencement of its review or testing of a Deliverable, the State may inspect the Deliverable to confirm that all components of the Deliverable (e.g., software, associated documentation, and other materials) have been delivered. If the State determines that the Deliverable is incomplete, the State may refuse delivery of the Deliverable without performing any further inspection or testing of the Deliverable. Otherwise, the review period will be deemed to have started on the day the State receives the Deliverable and the applicable certification by Contractor in accordance with this Section.

The State will approve in writing a Deliverable upon confirming that it conforms to and, in the case of a Custom Software Deliverable, performs in accordance with, its specifications without material deficiency. The State may, but shall not be required to, conditionally approve in writing a Deliverable that contains material deficiencies if the State elects to permit Contractor to rectify them post-approval. In any case, Contractor will be responsible for working diligently to correct within a reasonable time at Contractor's expense all deficiencies in the Deliverable that remain outstanding at the time of State approval.

If, after three (3) opportunities (the original and two repeat efforts), Contractor is unable to correct all deficiencies preventing State approval of a Deliverable, the State may: (i) demand that Contractor cure the failure and give Contractor additional time to cure the failure at the sole expense of Contractor; or (ii) keep this Contract in force and do, either itself or through other parties, whatever Contractor has failed to do, in which event Contractor shall bear any excess expenditure incurred by the State in so doing beyond the Contract price for such Deliverable and will pay the State an additional sum equal to ten percent (10%) of such excess expenditure to cover the State's general expenses without the need to furnish proof in substantiation of such general expenses; or (iii) terminate this Contract for default, either in whole or in part by notice to Contractor (and without the need to afford Contractor any further opportunity to cure). Notwithstanding the foregoing, the State shall not use, as a basis for exercising its termination rights under this Section, deficiencies discovered in a repeat State Review Period that could reasonably have been discovered during a prior State Review Period.

The State, at any time and in its own discretion, may halt the UAT or approval process if such process reveals deficiencies in or problems with a Deliverable in a sufficient quantity or of a sufficient severity as to make the continuation of such process unproductive or unworkable. In such case, the State may return the applicable Deliverable to Contractor for correction and re-delivery prior to resuming the review or UAT process and, in that event, Contractor will correct the deficiencies in such Deliverable in accordance with the Contract, as the case may be.

Approval in writing of a Deliverable by the State shall be provisional; that is, such approval shall not preclude the State from later identifying deficiencies in, and declining to accept, a subsequent Deliverable based on or which incorporates or inter-operates with an approved Deliverable, to the extent that the results of subsequent review or testing indicate the existence of deficiencies in the subsequent Deliverable, or if the Application of which the subsequent Deliverable is a component otherwise fails to be accepted pursuant to **Section 2.080**.



2.254 Process for Approval of Written Deliverables

The State Review Period for Written Deliverables will be the number of days set forth in the applicable Statement of Work following delivery of the final version of the Written Deliverable (failing which the State Review Period, by default, shall be five (5) Business Days for Written Deliverables of one hundred (100) pages or less and ten (10) Business Days for Written Deliverables of more than one hundred (100) pages). The duration of the State Review Periods will be doubled if the State has not had an opportunity to review an interim draft of the Written Deliverable prior to its submission to the State. The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Written Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected prior to approval of the Written Deliverable (or at the State's election, subsequent to approval of the Written Deliverable). If the State delivers to Contractor a notice of deficiencies, Contractor will correct the described deficiencies and within five (5) Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Written Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Written Deliverable to confirm that the identified deficiencies have been corrected.

2.255 Process for Approval of Custom Software Deliverables

The State will conduct UAT of each Custom Software Deliverable in accordance with the following procedures to determine whether it meets the criteria for State approval – i.e., whether it conforms to and performs in accordance with its specifications without material deficiencies.

Within thirty (30) days (or such other number of days as the parties may agree to in writing) prior to Contractor's delivery of any Custom Software Deliverable to the State for approval, Contractor shall provide to the State a set of proposed test plans, including test cases, scripts, data and expected outcomes, for the State's use (which the State may supplement in its own discretion) in conducting UAT of the Custom Software Deliverable. Contractor, upon request by the State, shall provide the State with reasonable assistance and support during the UAT process.

For the Custom Software Deliverables listed in an attachment, the State Review Period for conducting UAT will be as indicated in the attachment. For any other Custom Software Deliverables not listed in an attachment, the State Review Period shall be the number of days agreed in writing by the parties (failing which it shall be forty-five (45) days by default). The State Review Period for each Custom Software Deliverable will begin when Contractor has delivered the Custom Software Deliverable to the State accompanied by the certification required by this **Section** and the State's inspection of the Deliverable has confirmed that all components of it have been delivered.

The State's UAT will consist of executing test scripts from the proposed testing submitted by Contractor, but may also include any additional testing deemed appropriate by the State. If the State determines during the UAT that the Custom Software Deliverable contains any deficiencies, the State will notify Contractor of the deficiency by making an entry in an incident reporting system available to both Contractor and the State. Contractor will modify promptly the Custom Software Deliverable to correct the reported deficiencies, conduct appropriate System Testing (including, where applicable, Regression Testing) to confirm the proper correction of the deficiencies and re-deliver the corrected version to the State for re-testing in UAT. Contractor will coordinate the re-delivery of corrected versions of Custom Software Deliverables with the State so as not to disrupt the State's UAT process. The State will promptly re-test the corrected version of the Software Deliverable after receiving it from Contractor.

Within three (3) business days after the end of the State Review Period, the State will give Contractor a written notice indicating the State's approval or rejection of the Custom Software Deliverable according to the criteria and process set out in this **Section**.



2.256 Final Acceptance

“Final Acceptance” shall be considered to occur when the Custom Software Deliverable to be delivered has been approved by the State and has been operating in production without any material deficiency for fourteen (14) consecutive days. If the State elects to defer putting a Custom Software Deliverable into live production for its own reasons, not based on concerns about outstanding material deficiencies in the Deliverable, the State shall nevertheless grant Final Acceptance of the Project.

2.260 Ownership

2.261 Ownership of Work Product by State

The State owns all Deliverables, as they are work made for hire by the Contractor for the State. The State owns all United States and international copyrights, trademarks, patents or other proprietary rights in the Deliverables.

2.262 Vesting of Rights

With the sole exception of any preexisting licensed works identified in the SOW, the Contractor assigns, and upon creation of each Deliverable automatically assigns, to the State, ownership of all United States and international copyrights, trademarks, patents, or other proprietary rights in each and every Deliverable, whether or not registered by the Contractor, insofar as any the Deliverable, by operation of law, may not be considered work made for hire by the Contractor for the State. From time to time upon the State’s request, the Contractor must confirm the assignment by execution and delivery of the assignments, confirmations of assignment, or other written instruments as the State may request. The State may obtain and hold in its own name all copyright, trademark, and patent registrations and other evidence of rights that may be available for Deliverables.

2.263 Rights in Data

The State is the owner of all data made available by the State to the Contractor or its agents, Subcontractors or representatives under the Contract. The Contractor will not use the State’s data for any purpose other than providing the Services, nor will any part of the State’s data be disclosed, sold, assigned, leased or otherwise disposed of to the general public or to specific third parties or commercially exploited by or on behalf of the Contractor. No employees of the Contractor, other than those on a strictly need-to-know basis, have access to the State’s data. Contractor will not possess or assert any lien or other right against the State’s data. Without limiting the generality of this Section, the Contractor must only use personally identifiable information as strictly necessary to provide the Services and must disclose the information only to its employees who have a strict need-to-know the information. The Contractor must comply at all times with all laws and regulations applicable to the personally identifiable information.

The State is the owner of all State-specific data under the Contract. The State may use the data provided by the Contractor for any purpose. The State will not possess or assert any lien or other right against the Contractor’s data. Without limiting the generality of this Section, the State may use personally identifiable information only as strictly necessary to utilize the Services and must disclose the information only to its employees who have a strict need to know the information, except as provided by law. The State must comply at all times with all laws and regulations applicable to the personally identifiable information. Other material developed and provided to the State remains the State’s sole and exclusive property.

2.264 Ownership of Materials

The State and the Contractor will continue to own their respective proprietary technologies developed before entering into the Contract. Any hardware bought through the Contractor by the State, and paid for by the State, will be owned by the State. Any software licensed through the Contractor and sold to the State, will be licensed directly to the State.

**2.270 State Standards****2.271 Existing Technology Standards**

The Contractor will adhere to all existing standards as described within the comprehensive listing of the State's existing technology standards at <http://www.michigan.gov/dmb>.

2.272 Acceptable Use Policy

To the extent that Contractor has access to the State computer system, Contractor must comply with the State's Acceptable Use Policy, see <http://www.michigan.gov/dmb/0,1607,7-150-56355---,00.html>.

All Contractor employees must be required, in writing, to agree to the State's Acceptable Use Policy before accessing the State system. The State reserves the right to terminate Contractor's access to the State system if a violation occurs.

2.273 Systems Changes

Contractor is not responsible for and not authorized to make changes to any State systems without written authorization from the Project Manager. Any changes Contractor makes to State systems with the State's approval must be done according to applicable State procedures, including security, access and configuration management procedures.

2.280 Extended Purchasing**2.281 MiDEAL (Michigan Delivery Extended Agreements Locally)**

Act Number 431 of the Public Acts of 1984 permits the State of Michigan, Department of Management and Budget, to provide purchasing services to any city, village, county, township, school district, intermediate school district, non-profit hospital, institution of higher education, community, or junior college. As a result of the enactment of this legislation, the MIDEAL Program has been developed. This program extends the use of state contracts to program members. The governmental agency must enter into an agreement with the State of Michigan to become authorized to participate, thus ensuring that local units of government secure a greater return for the expenditure of public funds.

In those cases, contract vendors supply merchandise at the established State of Michigan contract prices and terms. The Bidder must submit invoices and pay the authorized MIDEAL member on a direct and individual basis according to contract terms.

IT IS MANDATORY THAT ALL CONTRACTS RESULTING FROM THIS RFP WILL BE MADE AVAILABLE TO ALL STATE OF MICHIGAN AGENCIES AND AUTHORIZED MIDEAL PURCHASING PROGRAM MEMBERS.

Please Visit Mi DEAL at www.michigan.gov/buymichiganfirst under MiDeal.

Estimated requirements for authorized local units of government are not included in the quantities shown in this RFP.

2.282 State Employee Purchases – Reserved**2.290 Environmental Provision****2.291 Environmental Provision-Reserved****2.300 Deliverables****2.301 Software – Reserved****2.302 Hardware – Reserved****2.303 Equipment to be New-Reserved****2.304 Equipment to be New and Prohibited Products-Reserved**

**2.310 Software Warranties**

- 2.311 Performance Warranty-Reserved
- 2.312 No Surreptitious Code Warranty-Reserved
- 2.313 Calendar Warranty-Reserved
- 2.314 Third-party Software Warranty-Reserved
- 2.315 Physical Media Warranty-Reserved

2.320 Software Licensing

- 2.321 Cross-License, Deliverables Only, License to Contractor -Reserved
- 2.322 Cross-License, Deliverables and Derivative Work, License to Contractor-Reserved
- 2.323 License Back to the State-Reserved
- 2.324 License Retained by Contractor-Reserved
- 2.325 Pre-existing Materials for Custom Software Deliverables-Reserved

2.330 Source Code Escrow

- 2.331 Definition -Reserved
- 2.332 Delivery of Source Code into Escrow-Reserved
- 2.333 Delivery of New Source Code into Escrow-Reserved
- 2.334 Verification-Reserved
- 2.335 Escrow Fees-Reserved
- 2.336 Release Events-Reserved
- 2.337 Release Event Procedures-Reserved
- 2.338 License-Reserved
- 2.339 Derivative Works-Reserved

2.400 Other Provisions - Reserved



Cost Table – Attachment A

Position Type	Total availability per year (in FTEs) ¹	Not To Exceed Hourly Rate ²
Data Warehouse Project Manager	4	\$168.00
Data Warehouse Architect	15	\$188.00
Data Warehouse Data Designer/Modeler	10	\$163.00
Data Warehouse Developer Senior/Junior	18	\$158.00
Data Warehouse Business Intelligence Analyst Senior/Junior	15	\$158.00
Data Warehouse Database Administrator	4	\$163.00
Data Warehouse Business Intelligence Report Developer	7	\$158.00
Data Warehouse Help Desk Analyst	4	\$145.00

1. The FTE counts represent the named resources for which we have provided resumes. Our more extensive Ingenix Business Intelligence experienced employee population along with our subcontractor network provide us with additional FTE levels that could be engaged to deliver Business Intelligence services for the State.
2. These are not to exceed, five (5) year rates that will be appropriately discounted as individual SOWs are issued.

Position Type	Total availability per year (in FTEs) ¹	Not To Exceed Hourly Rate ²
DW Web Developer	3	\$120.00
Subject Matter Expert	4	\$350.00
Advanced Analytics Software Consultant	1	\$275.00
Principal Consultant	1	\$450.00

1. The FTE counts represent the named resources for which we have provided resumes. Our more extensive Ingenix Business Intelligence experienced employee population along with our subcontractor network provide us with additional FTE levels that could be engaged to deliver Business Intelligence services for the State.
2. These are not to exceed, five (5) year rates that will be appropriately discounted as individual SOWs are issued.