



## **Request for Proposal (RFP)**

**New York State Department of Health  
(NYSDOH)**

**Medicaid Data Warehouse (MDW)**

**Replacement/OHIP Data Mart Operational  
Support Project**

**November 2008**

**Request for Proposal (RFP)**  
**Replacement Medicaid Data Warehouse (MDW)/OHIP Data Mart Operational Support**

FAU Number 0711050248 Task 4824

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Schedule of Key Events

RFP Release Date	11/10/08
Procurement Library Available	11/10/08
Written Questions Due Date	12/02/08
Registration for Bidder's Conference Due Date (optional)	11/19/08
Letter of Intent Due Date (optional)	11/19/08
Bidder's Conference Date	11 AM 11/21/08
Response to Written Questions Due Date	12/19/08
Proposals Due Date	1 PM ET 2/09/09

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*For further information regarding these statutory provisions, see the Lobbying Statute summary in Section XIII.J Administrative Requirements Lobbying Statute of this solicitation.*

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The following attachments are included with, and hereby incorporated in, this RFP:

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ATTACHMENT B – BID/NO BID FORMS

ATTACHMENT C– VENDOR RESPONSIBILITY QUESTIONNAIRE

ATTACHMENT D– STATE CONSULTANT SERVICES CONTRACTOR PLANNED EMPLOYMENT REPORT (FORM A)

ATTACHMENT E – STATE CONSULTANT SERVICES CONTRACTOR’S ANNUAL EMPLOYMENT REPORT (FORM B)

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ATTACHMENT W – M/WBE PROCUREMENT FORMS

# **I. Overview of the New York State Department of Health (NYSDOH), Office of Health Insurance Programs (OHIP) and the New York State Medicaid Data Warehouse (MDW) Replacement/OHIP Dart Mart Operational Support Project**

## **A. INTRODUCTION**

The purpose of this Request for Proposal (RFP) is to procure the services of a contractor that will create a comprehensive and secure health care information system environment that will position the New York State Department of Health (NYSDOH) to meet the emerging needs of the next decade. This project includes developing and implementing a replacement Medicaid Data Warehouse (MDW) solution and assuming responsibility for the operational support of the current Office of Health Insurance Programs (OHIP) Data Mart.

The current Data Warehouse was designed and built from requirements presented in a procurement completed over ten years ago. Since that time new State and Federal health care programs and consolidation of existing programs have increased the need for better management and manipulation of health care claims information at the State level. Health Insurance Portability and Accountability (HIPAA), National Provider Identifier (NPI), Medicare Part D, State and local drug subsidy programs, drug rebates, Electronic Data Exchange and Fraud and Abuse dictate how claims, referrals and certain transactional information products are created and used. The ability to keep pace with the health care information needs requires the mastery of all the data related to the provision of health care.

The MDW will play a central role in New York State's Medicaid program. NYSDOH views the MDW as a resource serving State and local government, as well as the Federal government, with plans for future expansion to use by non-government health care professionals. As the MDW emerges as a frontline information resource the following characteristics will be critical. The MDW must provide:

- Data integrity;
- Shorter timeframes for the refresh of information;
- High availability to information and analytical functions;
- Metadata tools that are easy to maintain and consumer friendly; and
- Business Intelligence (BI) tools which are powerful and simple to use.

NYSDOH expects that an MDW with these characteristics will become a valuable tool to help improve clinical outcomes, assist with fraud detection and enhance the process of policy budget formulation.

## **B. DEPARTMENT OVERVIEW AND REFORM AGENDA**

The New York State Department of Health (NYSDOH) is the Single State Agency responsible for the administration of New York's Medicaid program. Under federal and state law

and regulations, the NYSDOH administers Medicaid in conjunction with 58 local social services districts and other state agencies including the Office of Mental Health (OMH), the Office of Alcohol and Substance Abuse (OASAS), the Office for Children and Family Services (OCFS) and the Office of Temporary Disability Assistance (OTDA) and the Office of Mental Retardation and Developmental Disabilities (OMRDD). The Office of the Medicaid Inspector General (OMIG) is an independent entity within the NYSDOH established to preserve the integrity of the Medicaid program by conducting and coordinating fraud, waste and abuse control activities.

New York's Medicaid program is one of the largest insurance programs in the nation, providing health care coverage to over four (4) million people, approximately 2.6 million of which receive their health care through enrollment in a managed care plan. Medicaid's annual cost is \$47 billion which comprises thirty percent (30%) of the State budget.

Within NYSDOH, the Office of Health Insurance Programs (OHIP) is directly responsible for administering public health insurance programs including Medicaid, Family Health Plus, which is a Medicaid expansion covering low-income workers, Child Health Plus which covers 380,000 children who are not eligible for Medicaid, and the Elderly Pharmaceutical Insurance Coverage Program (EPIC) which provides prescription drug coverage to over 300,000 seniors who meet the program's income criteria. OHIP was established in January 2007 with the mission of ensuring that eligible New Yorkers are able to get and keep coverage; buying value (defined as quality, cost-care) for beneficiaries; and advancing health system reform. The 2008-09 State Budget made significant strides in achieving these reform objectives. For example, it broadens coverage and makes it more accessible, begins the process of investing in ambulatory care to reduce preventable inpatient hospital stays and strengthens the commitment to quality through such measures as primary care standards, retrospective review of services and selective contracting. As OHIP implements these reforms and continues to advance the health care reform agenda, the MDW will play a critical role in supporting all stakeholders in the development and evaluation of reform initiatives.

Another critical element of New York's health care reform is expanding the adoption of advanced health information technology (HIT). A number of health care reform initiatives currently underway will rely upon a high-availability MDW that includes a suite of analytical tools capable of supporting increasingly complex analyses of Medicaid data. NYSDOH is currently working to develop an architectural framework and set of principles to support the implementation of New York State's health information infrastructure (NYHII), including a Statewide Health Information Network for New York (SHIN-NY). The SHIN-NY is the lynchpin for achieving interoperable HIT and realizing the expected benefit from HIT in improving health care quality, affordability and outcomes for New Yorkers.

NYSDOH is also working to establish an interoperable Health Information Exchange (HIE) to initially share medication history data and progress to the development and implementation of an electronic health record for all Medicaid recipients. Efforts are also underway to complete an extensive retrospective utilization review of eligible Medicaid program enrollees, using both evidence based data/disease management analysis and resource utilization review techniques. This project will include the development of utilization profiles for both Medicaid providers and enrollees, and the identification of providers that demonstrate a pattern of inappropriate evidence based utilization or inappropriate resource utilization. A high-availability

MDW with advanced analytical capabilities will be a critical element to the successful completion of these initiatives.

### **C. PROJECT BACKGROUND**

In 1998 NYSDOH conducted a competitive procurement for a replacement Medicaid MMIS with a Data Warehouse component. The current eMedNY Data Warehouse was implemented in 2002. The current MMIS, eMedNY, was designed and developed during a second project phase. Statewide implementation was completed in 2005.

The MMIS and Data Warehouse systems implemented during that procurement met many of the objectives specified by NYSDOH. The major accomplishments of that effort included:

1. Improved integration of the Medicaid Eligibility Verification System (MEVS) with the MMIS. Previous systems did not integrate the MEVS into the MMIS processes completely. The current system has resolved problems associated with separate systems;
2. Improved coordination of data between eligibility source systems and the MMIS. The previous systems had difficulty maintaining the consistency of data definitions between the MMIS and the eligibility systems. The current system has improved the consistency of data definitions and reduced inconsistencies related to the timing of data interfaces;
3. Achieved compliance with all requirements of the Health Insurance Portability and Accountability Act (HIPAA) and the Balanced Budget Act of 1997;
4. Supported claim processing volumes required by the New York State Medicaid Program. The system has performed all edits and audits required by State policy during claims processing while processing the required volume of claims timely and accurately;
5. Implemented Web-based interfaces that allow users to access the MMIS. This has improved access to data that was not available from client server or mainframe interfaces;
6. Introduced the first data warehouse to the New York State Medicaid Program. The current eMedNY Data Warehouse has succeeded in providing access to MMIS data to hundreds of users in NYSDOH and users in other agencies and local social service districts;
7. Provided an integration point for data from the MMIS and external sources. The current eMedNY Data Warehouse has become the central point for reference, research and analysis in supporting the management of the New York State Medicaid Program. The eMedNY Data Warehouse serves as the “authoritative source for Medicaid data” for other analytical platforms, standardizing Medicaid data for the OHIP Data Mart and other State agency, county and municipal data marts;
8. Improved provider and client fraud and abuse tracking by the current eMedNY Data Warehouse;
9. Improved tracking of drug pattern usage by the eMedNY Data Warehouse to prevent abuse and aid in the forecasting of cost and utilization of expensive prescription drugs; and

10. Enhanced analysis of program and service delivery effectiveness by the current eMedNY Data Warehouse.

The OHIP Data Mart, relying on data provided by the current eMedNY Data Warehouse, supports a variety of research and analytical services that have resulted in savings and other improvements to the Medicaid program. Examples of savings and improvements include:

1. Served as the primary source of detailed Medicare Disproportionate Share Hospital data to the CMS and National Government Services, generating \$1 billion of financial relief for New York State Hospitals in 2006;
2. Provided evidentiary documents for grand jury and court cases, liens and recoveries, data for national litigation, and information to respond to internal and external audits;
3. Supported the implementation of an informational/reporting infrastructure that enables the State to maintain effective controls over eligibility and rate-setting methodologies;
4. Supported timely access to detailed annual spending summaries for creation and execution of New York State, New York City and other local government budgets;
5. Supported the ability for analysts to maximize audits and improve the information provided; and
6. Provided data to supports disease management and other quality of care issues, healthcare outcomes, waiver reporting, health plan performance, rate-setting applications, State Plan Amendment calculations and Medicare Part D and Phased Down State Contribution calculations.

## **D. PROJECT PURPOSE**

The current eMedNY Data Warehouse is a good example of a Medicaid Data Warehouse built to support the analytical needs of a large state. However, it was designed to meet the needs of NYSDOH that were defined over a decade ago. The technology used to populate the eMedNY Data Warehouse, and publish the data in report or analytic form, is outdated. The technical resources needed to make changes and develop enhancements compete with resources needed to maintain the fiscal agent claims processing system. The NYSDOH decided that the importance of health care information deserved a dedicated approach to building the most efficient and responsive system.

The purpose of this procurement is to obtain the services of a qualified contractor to 1) design, develop and implement an MDW fully responsive to the needs of the NYSDOH and 2) host and provide operational support for the OHIP Data Mart.

The NYSDOH desires the most sophisticated technology tools available to help them monitor quality and appropriateness of care, ensure that the maximum effort is applied to control expenditures, find new ways to deliver care while containing costs, share and exchange data with other agencies, and provide access to selected information for providers, beneficiaries, policy-makers, and others. Public and private health care must both meet the growing number of

national standards for data content and interoperability. They must also meet higher expectations for the management of program data and the use of that data to improve the delivery of health care services and detection of fraud and abuse.

New York State health care program managers rely heavily on the data and supporting analytical capabilities provided by the eMedNY Data Warehouse and OHIP Data Mart. They view the eMedNY Data Warehouse and OHIP Data Mart as central resources which enhance their ability to improve the delivery of health care service to clients. A MDW has the potential to significantly impact how agencies manage program change. The potential for wide ranging program analysis and feedback to the healthcare community is enormous. New York State has been a leader in the development of health care and fraud and abuse information systems and intends to continue to be a leader in the ongoing development of health care information systems.

## **E. SCOPE OF WORK SUMMARY**

The New York State Department of Health (NYSDOH) seeks a contractor to:

1. Perform a complete replacement of the existing eMedNY Data Warehouse in a phased implementation approach; and
2. Host on their premises and assume responsibility for the operational support of the OHIP Data Mart.

Phased implementation of the MDW is targeted for completion in June 2010, within the timeframe of the existing eMedNY Data Warehouse contract. The contractor for the MDW will operate the system under the term of the base contract until June 30, 2015 with options for two one-year extensions and six one-month extensions beyond this date.

Successful offerors must address a series of requirements to support the design, development and implementation of a replacement MDW solution. Categories of requirements and associated RFP sections include:

- Section V Business Requirements
- Section VI Technical Requirements
- Section VII Service Level Agreement Requirements
- Section VIII Facility Requirements
- Section IX User Support Requirements
- Section X Testing Requirements
- Section XI Security Requirements
- Section XII Proposal Requirements
- Section XIII Administrative Requirements



## F. ORGANIZATION OF THE REQUEST FOR PROPOSAL (RFP)

#	RFP Section	Description
<b>I</b>	<b>OVERVIEW</b>	Provides an overview of the NYSDOH and OHIP, and a summary of the scope of work for the MDW Replacement/OHIP Data Mart Operational Support Project.
<b>II</b>	<b>CURRENT NEW YORK STATE MDW AND OHIP DATA MART ARCHITECTURE</b>	Provides a description of the current eMedNY Data Warehouse and OHIP Data Mart technical environments and challenges currently faced by NYSDOH in employing the current system to meet the needs of the New York State Medicaid Program.
<b>III</b>	<b>PROJECT APPROACH</b>	Outlines project phases, including Project Initiation, Design, Development and Implementation, Operations, System Change Management, and Turnover.
<b>IV</b>	<b>PROJECT MANAGEMENT</b>	Outlines project management requirements including contractor project management methodology, systems development lifecycle and project management practices applied to each of the project phases.
<b>V</b>	<b>BUSINESS REQUIREMENTS</b>	Lists the business goals and objectives of the project, along with requirements associated with each OHIP/MMIS functional area.
<b>VI</b>	<b>TECHNICAL REQUIREMENTS</b>	Lists the technical requirements associated with the MDW, including data acquisition, data access, data delivery, metadata management environment (MME), data model, infrastructure and business continuity requirements.
<b>VII</b>	<b>SERVICE LEVEL AGREEMENT REQUIREMENTS</b>	Details the service level agreements (SLAs) which must be met by the selected contractor.
<b>VIII</b>	<b>FACILITY REQUIREMENTS</b>	Lists requirements relative to MDW space and plant facilities and physical data access and security.
<b>IX</b>	<b>USER SUPPORT REQUIREMENTS</b>	Lists requirements relative to MDW user support including the help desk function and tool training.
<b>X</b>	<b>TESTING REQUIREMENTS</b>	Lists requirements relative to MDW testing including data access and data delivery functions, as well as the metadata application.
<b>XI</b>	<b>SECURITY REQUIREMENTS</b>	Lists requirements relative to MDW security, including data security, network security, metadata security and application security.
<b>XII</b>	<b>PROPOSAL REQUIREMENTS</b>	States the general requirements, format and content of the proposal submitted
<b>XIII</b>	<b>ADMINISTRATIVE REQUIREMENTS</b>	Contains the administrative provisions that govern this procurement.
	<b>ATTACHMENTS</b>	Provides forms, documents and reference material that required for Offerors to submit fully responsive proposals.

## **II. CURRENT NEW YORK STATE MEDICAID DATA WAREHOUSE AND OHIP DATA MART ARCHITECTURE**

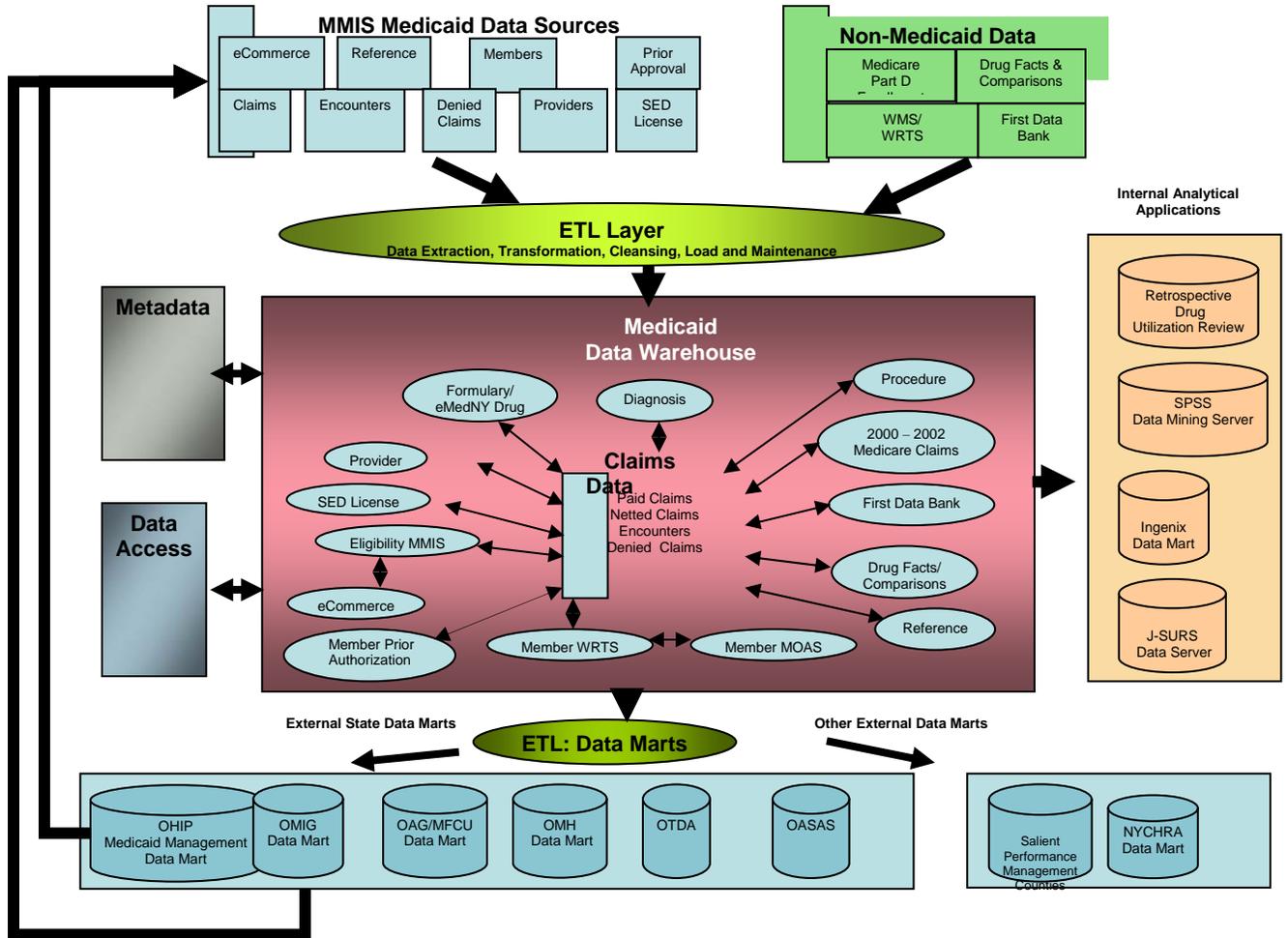
### **A. OVERVIEW OF THE CURRENT TECHNICAL ENVIRONMENT**

This section is provided for informational purposes only. Section VI Technical Requirements sets forth all specific technology-related requirements.

The eMedNY Data Warehouse was implemented in September 2002 and is designed to serve as a comprehensive data repository and analytical reporting system primarily for the Office of Health Insurance Programs (OHIP) and the Office of the Medicaid Inspector General (OMIG). The data warehouse is also utilized by Federal, State, county and municipal agencies to manage and budget their Medicaid program responsibilities.

The data warehouse is comprised of data publishers (data sources), data subscribers (recipients of data from the data warehouse that is loaded into their own databases) and data users. Exhibit II-1: Current eMedNY Data Warehouse Architecture provides a high-level overview of the current data warehouse and its components.

**Exhibit II-1: Current eMedNY Data Warehouse Architecture**



## **B. OVERVIEW OF THE CURRENT DATA ENVIRONMENT**

Data from many different sources is collected by the eMedNY Data Warehouse. These sources include operational systems (eMedNY Medicaid Management Information System (MMIS)), third-party vendors (such as First Data Bank), and other external sources such as the Centers for Medicare and Medicaid Services (CMS). Although the data stored originates from many distributed and diverse sources, it is standardized and integrated as it is loaded into the data warehouse. The data warehouse is also used to populate several State and county data marts with Medicaid data. The current implementation of the data warehouse is not oriented toward ease of use by the non-technical business user, but is oriented toward performing complex queries by the power users.

Residing on a Teradata database that is served by an NCR Corporation (NCR) multi-node server, the eMedNY Data Warehouse contains over eight (8) terabytes (TB) of data. The core of the data warehouse is the claims subject area comprised of claims and encounters (managed care data). The claims subject area data is supported and enriched by data from a variety eMedNY tables and a number of external sources, including:

1. Diagnosis;
2. Procedure;
3. Formulary / eMedNY Drug (including First Data Bank and Drug Facts and Comparisons informational subscription services used to augment drug and prescription data);
4. Provider;
5. State Education Department (SED) License;
6. Member Medicaid Management Information System (MMIS);
7. e-commerce (eligibility and provider service authorizations available online);
8. Client Prior Authorization;
9. Welfare Management System (WMS)/ Welfare Reform Tracking System (WRTS) (New York State's Temporary Assistance to Needy Families (TANF) information systems);
10. Medicaid Override Application System (MOAS);
11. Reference data (e.g., rate, drug, and procedure codes and descriptions);
12. 2000 to 2002 Medicare claims; and
13. Medicare Part D Enrollment (data New York State receives from the CMS to support this prescription drug plan).

The current data warehouse maintains a rolling five years of claims data and ninety (90) days of e-commerce data history. A complete history for all master file tables is not maintained.

Four of the Internal Analytical Applications also reside within the current data warehouse architectures, including:

1. Surveillance and Utilization Review Subsystem (J-SURS),
2. Ingenix Data Mart,

3. The Statistical Package for Social Sciences (SPSS) Server, and
4. Retrospective Drug Utilization Review (R-DUR).

### **C. eMedNY DATA WAREHOUSE COMPONENTS**

There are nine (9) major components of the current eMedNY Data Warehouse. They include:

1. Data Acquisition;
2. Data Access;
3. Data Delivery;
4. Managed Metadata Environment (MME);
5. Data Model;
6. Infrastructure;
7. Business Continuity (Failover, Disaster Recovery, and
8. Backup, Archive and Restore (BAR) Solution); and
9. Security Model.

#### ***C.1 DATA ACQUISITION***

The data acquisition component includes two major areas:

1. Extract, transform and load (ETL) processes; and
2. Data quality processes.

ETL processes are a major component of the eMedNY Data Warehouse architectural foundation. Generally, these processes extract data from various source systems, enforce data quality and consistency standards, conform data so that the separate sources can be used together, and finally deliver the data in a format that can be used for reporting and analysis. The ETL processes are designed to move data from the various source(s) to the eMedNY Data Warehouse and from the eMedNY Data Warehouse to subsequent internal analytical applications. These set of processes are executed on a weekly basis and need to transform data from a number of disparate sources into an integrated, conformed set of data structures.

The current eMedNY Data Warehouse provides data to the following internal analytical applications:

1. Surveillance and Utilization Review Subsystem (J-SURS),
2. Ingenix Data Mart,
3. The Statistical Package for Social Sciences (SPSS) Server, and
4. Retrospective Drug Utilization Review (R-DUR).

Data is loaded into the eMedNY Data Warehouse on a daily, weekly and monthly basis. Data loads and transformations are performed with a combination of COBOL and SQL-based scripts.

The large majority of the extract and transformation processing is accomplished via COBOL programs which execute on the eMedNY mainframe environment. The load processing is done using standard Teradata Load utilities, specifically "Fastload" from the eMedNY mainframe directly into the eMedNY Data Warehouse. In some cases, data is loaded directly to the data warehouse first and then edited/transformed via SQL on the data warehouse.

The Endeavor product from Computer Associates is used for job and version control. The job control language of ETL manages what can run in parallel and what runs serially. Notifications and alerts are triggered if the job fails. If jobs are successful, balancing and control totals are performed.

Data is acquired for the population of the eMedNY Data Warehouse in both flat file and relational database table formats. SQL scripts are used to create flat files to load into the internally controlled data marts (J-SURS, R-DUR, Ingenix, and SPSS).

There is a relational staging area for the population of the eMedNY Data Warehouse that is also maintained via COBOL and SQL scripts. The Offerors' Library provides a list of sources and sizes. Section XIII.D.3 Administrative Requirements Offeror's Library provides a complete listing of all items.

## ***C.2 DATA ACCESS***

The eMedNY Data Warehouse is accessed using Hummingbird's client server-based BI Query suite of tools. Data warehouse users query directly against the existing data warehouse using Hummingbird BI tools and Queryman (Teradata SQL Assistant). Power users find the BI-Query tool very flexible and supportive of their complex analytical needs, but the less technical business analysts and casual users have found the tool to be challenging.

The Hummingbird tool also is used to extract data from the data warehouse. This data can be imported to a Microsoft (MS) Excel spreadsheet, CSV, text or MS Access database to complete further analysis by the user.

Cognos technology is used by many county staff to access data provided by the Office of Temporary and Disability Assistance and the Office of Children and Family Services. For county staff already trained in Cognos, the eMedNY Data Warehouse provides some reporting capabilities through the use of this tool. The Offerors' Library provides a list of Cognos reports.

There is a small Executive Information System/Decision Support System (EIS/DSS) that also is created by the BI Query tool suite. The system is accessible from the users desktop and offers basic drill down and filtering capabilities. The Offerors' Library provides a list of BI Query reports.

### ***C.3 DATA DELIVERY***

The eMedNY Data Warehouse supplies dependent data marts with a subset of data needed for each organization's Medicaid functional responsibilities. In many cases, the data marts receive data specifically related to their programmatic responsibilities, or in the case of county and municipal data marts, Medicaid data related to their area of fiscal responsibility.

Two methods are used to transfer data from the eMedNY Data Warehouse to its subscribers:

1. Data is securely staged so that recipients can pull the data to their location; or
2. Data can be deployed via FTP process directly to the subscriber.

All data that is distributed by the eMedNY Data Warehouse is in a fixed positional flat-file format.

The current eMedNY Data Warehouse provides data to the following externally controlled data marts:

#### **State Data Marts**

1. OHIP Data Mart;
2. OMIG Fraud and Abuse Management System (FAMS);
3. Office of Attorney General/Medicaid Fraud Control Unit (OAG/MFCU);
4. Office of Mental Health (OMH);
5. Office of Temporary and Disability Assistance (OTDA); and
6. Office of Alcohol and Substance Abuse Services (OASAS).

#### **County and Municipal Data Marts**

1. New York City Human Resources Administration (NYCHRA) and
2. Salient Performance Management Data Mart (used by several of the counties).

### ***C.4 MANAGED METADATA ENVIRONMENT (MME)***

The eMedNY Data Warehouse has a basic metadata system addressing data definitions and table structures. The primary source for the current metadata is the existing data dictionary augmented by a hints and tips section and documentation in HTML format.

Sources for the Metadata information are created and maintained manually in an Excel-based master spreadsheet and in an ERwin model. The spreadsheet and ERwin file are used to create the content for Metadata. Once it is confirmed that the two files are in sync, the Excel and Erwin data are placed into the Teradata tables. A third source of data, the Reference data, is also placed into the Teradata tables. RoboHelp is then used to collect the information in the Teradata tables and create HTML pages in Metadata.



For Reference/Lookup data, data is pulled from the current fiscal agent’s DECR system, loaded into the data warehouse and inserted into the Metadata application as part of the current monthly Metadata refresh process. The metadata refresh process also merges column and data type information from the AllFusion - Erwin Data Model. With each system change management project, Metadata is updated in the Excel-based master spreadsheet.

**C.5 DATA MODELING**

ERwin is used for logical design and AllFusion (ERwin 7.1) is used for the physical design of the Teradata eMedNY Data Warehouse tables.

**C.6 INFRASTRUCTURE**

The eMedNY Data Warehouse currently runs on a Teradata platform. The following table provides a description of the eMedNY hardware.

System	Hardware	Disk	Operating System
Production System	(3) Nodes Teradata 5500H	(20.8) terabytes Storage capacity*  *supports ALL environments	Teradata V2R6.2.2
Application System	(1) Node Teradata 550S		
Development System/ Ingenix System	(1) Node Teradata 5500H		

**C.7 BUSINESS CONTINUITY**

**C.7.1 Failover**

All of the eMedNY Data Warehouse production system nodes are interconnected to each other. If a node fails, the other nodes will automatically take over the processing that was assigned to the failed node; no user intervention is required. Once the failed node is repaired and is ready to be placed back into production a system restart is required. This would be scheduled for after hours when no user activity is anticipated.

All data warehouse nodes are also connected to switches. Should a network connection fail, the switches automatically re-route network connections to backup connections and no user intervention is required. Once the network connection is ready to be placed back in service the system will automatically redirect activity over the restored device, no system restart is required.

All data on disks are fully mirrored (via RAID-1). Should a disk device fail, the system automatically uses the mirrored version of the data. Once a failed disk device is replaced, the system automatically restores data onto the restored disk and no system restart is required.

### **C.7.2 Disaster Recovery**

The eMedNY Data Warehouse currently has a contract with Teradata Corp to bring up a data warehouse with the most recent twenty-seven (27) months of paid claims at a remote location in San Diego, California. In the event of a declared disaster, the back-ups, stored off-site, are express mailed to San Diego. A full week would be necessary before the back-up eMedNY Data Warehouse is fully functional.

### **C.7.3 Backup, Archive and Restore (BAR) Solution**

The current LAN-based BAR solution uses fiber channels and Ultrium III tape drives. Backups to a server are performed weekly before the data is written to the tape subsystem. Full system restore and a run of system checks (Scandisk, CheckTables) requires seventy-two (72) hours of processing time.

The eMedNY Data Warehouse contains five (5) years worth of rolling data. At five years and six months the current archiving strategy calls for the earliest six months worth of paid claims to be purged on a quarterly basis. The purge criteria are based on the claim date of payment. In addition, the oldest three (3) months of denied claims data is purged as part of the quarterly purge run at the start of a new quarter. Once the data is archived to tape, the tapes are then moved and stored at an offsite storage location

## **C.8 SECURITY MODEL**

The eMedNY Data Warehouse follows a role-based security model. Role-based security allows access to data to only those users who have been granted a particular security role. An authentication and authorization process, which determines the user's identity, decides whether a user has the role membership necessary to access that particular data. Roles define different levels of data access and are assigned based on the user's organization membership. Users within NYSDOH can view all data in the eMedNY Data Warehouse but county users, for example, can only access their county's data. This type of data restriction exists primarily for users outside of the agency.

## **D. OHIP DATA MART COMPONENTS**

There are nine (9) major components of the current OHIP Data Mart, which are discussed below. Additional technical information for the OHIP Data Mart can be found in the Offerors' Library. The OHIP Data Mart components include:

1. Data Acquisition;
2. Data Access;

3. Data Delivery;
4. Managed Metadata Environment (MME);
5. Data Model;
6. Infrastructure;
7. Business Continuity.
  - a. Failover;
  - b. Disaster Recovery; and
  - c. Backup, Archive and Restore (BAR) Solution.
8. Licensing; and
9. Security.

### ***D.1 DATA ACQUISITION***

Currently the OHIP Data Mart is loaded monthly. It pulls a weekly extract created from the eMedNY Data Warehouse, in a flat file format. Additional sources are gathered and placed in the staging area. The files are then staged for the monthly OHIP Data Mart load.

### ***D.2 DATA ACCESS***

The data within the OHIP Data Mart is accessed by approximately 800 users. The current Web portal provides user the ability to access reports and data and to save their results to an excel spread sheet. The system is currently configured to accommodate approximately 200 concurrent users.

### ***D.3 DATA DELIVERY***

The OHIP Data Mart transfers data to approximately a dozen State agencies, the City of New York, and the Centers for Medicaid and Medicare Services.

### ***D.4 MANAGED METADATA ENVIRONMENT (MME)***

At present, not much emphasis is placed on metadata in the OHIP Data Mart. While there is a schema and user called META the information is minimal.

### ***D.5 DATA MODEL***

Tools used for Logical design include:

1. OHIP Data Mart – The original system was designed and created using Oracle Designer; and
2. Web portal – Google Web Toolkit.

Tools used for Physical design include:



1. OHIP Data Mart – This resides in the data dictionary of the database and it is manipulated via DDL scripts, DBArtisan and Oracle Designer; and
2. Web portal - Google Web Toolkit.

#### ***D.6 INFRASTRUCTURE***

The OHIP Data Mart currently runs on an IBM platform using Oracle 11g. The following table provides a description of the OHIP Data Mart hardware and software.

System	Hardware	Disk	Operating System
Primary Server (Production)	IBM P690	EMC Disk ~15 TB Mirrored 7 TB Used	AIX 5.3
Secondary Server (Failover)	IBM P570	EMC Disk ~15 TB Mirrored 7 TB Used	AIX 5.3
Primary Production/Web portal Server	SUN V880	250 GB Disk	Solaris 9
Secondary/Failover Web portal Server	SUN V250	250 GB Disk	Solaris 9

#### ***D.7 BUSINESS CONTINUITY***

In the event of a catastrophic mechanical failure of the primary server (P690), steps are in place to manually fail the system over to the secondary server (P570). The manual fail over would take approximately three (3) days before the system would be up and functional.

In the current Backup, Archive and Recovery (BAR) solution full weekly backups are saved to tape. The backups are approximately 10TB and a copy of the data is cloned each week and taken to an offsite location. EMC NetWorker is the software used to perform the backups.

To rework the database one (1) week would take approximately fifteen (15) to twenty (20) hours. To perform a full restore from tape would take approximately one (1) week.

#### ***D.8 LICENSING***

NYSDOH is responsible for OHIP Data Mart Oracle RDBMS 11g licensing. Hardware and software licenses are maintained through IBM. A separate agreement with EMC exists for the NetWorker software and the hardware for storage (including SRDF for data replication between production and failover).

## ***D.9 SECURITY***

Lightweight Directory Access Protocol (LDAP) authentication occurs through NYSDOH's SUN Identity Manager (Lighthouse). This level of authentication will get users to the Web portal page where they must enter their enterprise credentials.

Application access for Web portal is contained within the application and follows a role-based security model. Role-based security allows access to data to only those users who have been granted a particular security role.

As a general security rule all OHIP-DM users must abide by the rules put forth by NYSDOH's network administration group.

## **E. CHALLENGES OF THE CURRENT ENVIRONMENT**

### ***E.1 BUSINESS/USER COMMUNITY SUPPORT CHALLENGES***

Although the eMedNY Data Warehouse has supported the user community needs for the past five years, it is unable to keep pace with an increasing number of user demands. Some of the areas of increased demand are:

1. Access to a growing number of increasingly complex data sources such as Medicare Part D, Welfare Management System and Manufacture Drug Rebate Data;
2. Claims history data back to May 1990 for statistical analysis, litigation support, liens, recoveries and long-term data analysis;
3. Ability to produce increasingly complex and varied queries;
4. Ability to quickly provide answers to business problems;
5. Improved ability to incorporate new information resources; and
6. Access to a more meaningful set of descriptive data.

### ***E.2 TECHNOLOGY CHALLENGES***

The current eMedNY Data Warehouse design is approaching the point where it will no longer be able to support the rapidly emerging NYSDOH initiatives. The current eMedNY Data Warehouse components of data acquisition (Extract, Transform, and Load [ETL] processes), technical architecture (hardware and database), data access (query tools), and metadata (data and process definitions) do not support the current and future business needs of NYSDOH. Specific issues related to each component are summarized below.

## E.2.1 Data Acquisition Component

The current data Extract, Transform and Load (ETL) processes to and from the eMedNY Data Warehouse are extremely complex in nature, comprised of multiple process steps and are based on data technology that requires extensive manual intervention. These processes represent two-thirds of the effort related to the eMedNY Data Warehouse development, maintenance, operations and enhancement activities. Problems with the ETL process can prevent the eMedNY Data Warehouse from meeting its full potential. ETL systems must be flexible (easy to modify and able to integrate new data in a timely manner with minimal effort) and scalable (the ability to grow and accept larger volumes of data). Challenges with the existing ETL system within the current Medicaid Data Warehouse include:

1. ETL processes lack complete documentation. Documentation deficiencies have made it difficult for NYSDOH to understand:
  - a. Data lineage (where the data has come from);
  - b. Edits applied to in-coming data; and
  - c. Business rules applied for data transformation;
2. The ETL issue impacts the ability to make changes and enhancements to the current eMedNY Data Warehouse;
3. ETL processes are based on hard-coded programs with fixed file format interfaces that are difficult to understand and maintain;
4. ETL processes are not tool/repository based, resulting in impact analysis that is time consuming and difficult to perform;
5. There are few reusable modules available for common edits, transformations and calculations resulting in redundant processes that are inefficient and prone to causing data integrity issues;
6. The ETL process lacks sufficient audit trails and processes to ensure that the subscriber data is accurate and appropriate for the given ETL cycle; and
7. Due to the complexity of the ETL system, documentation issues and the limited number of reusable and common non-relational components, data quality issues are difficult to find and address in a systemic fashion.

## E.2.2 Architecture Components

The current eMedNY Data Warehouse database is complex and intimidating to end-users and does not lend itself to effective query performance. The current architecture requires strengthening in each of the following areas:

1. Scalability: The capability of a MDW to grow in size;
2. Extensibility: The capability to add new subject area of data a MDW;
3. Flexibility: The ability to quickly modify a MDW to meet changing business needs;
4. Interoperability: The capability for a MDW to freely receive and exchange data with other systems; and

5. Usability: The capability of all users to quickly access, interrogate and receive information back from a MDW with minimal reliance on specialized technical assistance.

There are two major aspects of the current eMedNY Data Warehouse architecture that limit its performance and ability to support the needs of the NYSDOH user community: data architecture and technical architecture.

### Data Architecture

1. The complex nature of the base eMedNY Data Warehouse tables has created difficulties for the business analyst and casual user as they attempt to execute queries against the current MDW;
2. The complex nature of the base eMedNY Data Warehouse tables has created difficulties in quickly changing the database to support new data and new reporting and query needs;
3. After five years of use, the partitioning of most used versus least used elements has shifted. The optimal database design needs to be revisited to reflect this shift in priorities by facilitating data access and query performance based on input from the history of query requests;
4. User requirements call for improved query response time; and
5. Incorporation of changes into the current eMedNY Data Warehouse through the system change management process has been slow due to the data architecture and need for improvements in ETL processes and has not supported the changing reporting needs of NYSDOH.

### Technical Architecture

1. Multiple software, hardware and platforms are used between the data marts and the current eMedNY Data Warehouse. This approach has limited the users' ability to easily integrate data from multiple sources;
2. Integration difficulties often result in users cutting and pasting query results generated from one system into queries to use against another system;
3. The current eMedNY Data Warehouse needs an improved technological approach to the ETL system to improve the ability to implement new changes into the system; and
4. The current eMedNY Data Warehouse needs to implement the best available data storage and retrieval technology to improve data access and query response times.

### E.2.3 Data Access Components

Data access tools are designed to enable business users to access a data warehouse and data marts directly rather than depend on the receipt of reports from the information technology (IT) department. Different business users often need access to different business intelligence (BI)

tools based on their level of technical skills and the complexity of the data analysis required. It is common to find multiple BI tools utilized within a data warehouse based on these factors. Three tools have become the mainstay of the users for the current Medicaid Data Warehouse; Hummingbird BI Query, Queryman (Teradata SQL Assistant) and Cognos.

Current data access components are not user friendly and are intimidating to business analysts and casual users. Additionally, the current reporting tool is limited in presentation options. At present only local social service districts use the Cognos tool.

A number of Data Access areas require strengthening, including the following:

1. There are maintenance issues related to the BI Query tool. This tool is a “thick” client tool, requiring the software package be loaded on the client desktop personal computer (PC). There are two significant drawbacks to thick client tools:
  - a. Significant maintenance effort is required since any software updates and upgrades must be applied to each computer on the network; and
  - b. Any user who desires to access the application must have the software installed on their machine.

NYSDOH desires to implement “thin” client tools to reduce the maintenance efforts and access issues. The client PC does not require the application to be loaded on the machine for the user to access the application. Since the application only resides on the host server, maintenance and software updates are limited to the server.

2. BI Query does not provide the report design flexibility required by the current eMedNY Data Warehouse users;
3. BI Query does not provide the capability to generate large data extracts;
4. The current reporting system does not provide sufficient presentation capabilities such as geographic mapping required by the users; and
5. The current BI Query tool is difficult for casual users to use. There is a need to provide point-and-click user interface that is intuitive for this user community.

#### **E.2.4 Metadata Component**

The metadata documents the data warehouse. Complete, well-defined and accessible metadata is essential in order to enable business analysts to access and understand the data with a minimum of reliance on IT staff support. An effective metadata system helps develop trust and confidence in a data warehouse and enables all users to access, understand and perform their business analysis efficiently.

The scope of the metadata in the current eMedNY Data Warehouse is primarily limited to data definitions. The definitions are often incomplete and sometimes inaccurate. Business analysts and casual users find it difficult to search for and locate specific data definitions.

Specific issues with the current eMedNY Data Warehouse metadata include:

1. The level of detail of the data definitions given in the data dictionary varies from element to element;
2. Definitions tend to have more technical language than business language;
3. In some cases, data definitions are limited to the set of valid values for a field without a definition or description given to the code values;
4. The data warehouse does not contain source-to-target data mappings or edit rules for many of the data elements;
5. The scope of the metadata is limited; it does not contain source-to-target data mappings or edit rules for many of the data elements;
6. The data warehouse does not contain business rules;
7. Consistent data names are not used within the current eMedNY Data Warehouse for data elements or tables;
8. Due to the metadata approach, definition of terms and fields is not consistent across the current eMedNY Data Warehouse environment;
9. Metadata search capabilities are limited and based primarily on the data element number of the various current eMedNY Data Warehouse elements. This has made it difficult for users to locate information about the data stored in the current eMedNY Data Warehouse; and
10. Regardless of the size of the Metadata change it takes 2-3 business days to implement.

### ***E.3 LIMITED HISTORICAL DATA***

The current eMedNY Data Warehouse has been limited to five (5) rolling years of claims data. Users have expressed significant business and reporting needs (trending, forecasting, audits, litigation and longitudinal analyses) that require access to up to twenty-five (25) years of historical claim data.

### ***E.4 DATA QUALITY***

A MDW must serve as the "authoritative source of Medicaid data"; enabling NYSDOH, State agency and local district users, and the Federal government, to rely on the accuracy and consistency of the data used to support their Medicaid responsibilities.

Issues exist regarding data integrity in the current eMedNY Data Warehouse. Claim counts and amounts paid do not always balance between the current eMedNY Data Warehouse and the data marts.

Issues impacting the integrity of the Medicaid data include:

1. Business rules have not always been consistently applied through the extract, transform and load (ETL) process. Though this was addressed through joint remediation efforts by

the State and the current contractor, the complexity of the ETL system causes data defects that can be introduced in the future;

2. The current eMedNY Data Warehouse is reactive rather than proactive in identifying data quality issues. The result has been only identifying data defects after they have been introduced into the current eMedNY Data Warehouse. There is no effective automated system to identify data quality issues; and
3. The current eMedNY Data Warehouse system does not utilize data quality tools to assist in identifying and correcting data defects.

### ***E.5 SYSTEM CHANGE MANAGEMENT***

The system change request queue for the eMedNY Data Warehouse continues to grow in scope and duration, with some projects spanning several years. Required maintenance activities often originate in the source systems and are difficult to trace and correct, often spanning weeks and exhibiting far-ranging impacts on eMedNY Data Warehouse users and subscribers.

Overall, the incorporation of changes into the current eMedNY Data Warehouse through the system change management process has been slow and has not supported the changing reporting needs of NYSDOH. This has been a result of the complexity of the ETL system, current eMedNY Data Warehouse database and inadequate documentation.

### III. PROJECT APPROACH

#### A. INTRODUCTION

The Medicaid Data Warehouse (MDW) Replacement/OHIP Data Mart Operational Support Project will be comprised of a phased implementation of the requirements in this RFP that include (1) the design, development and implementation of a MDW solution and (2) takeover of the operation of the current OHIP Data Mart. The project is divided into four (4) phases. This section of the RFP will define these phases and provide the offeror with a general understanding of what is expected during each phase. Attachment L Proposal Requirements Cross Reference Matrix provides a comprehensive listing of requirements offerors must meet to submit a fully responsive proposal. Attachment M Mandatory Requirements Traceability Matrix provides a comprehensive listing of all MDW Replacement/OHIP Data Mart Project requirements.

**Phase 1:** In this phase the Contractor will execute project start-up activities, prepare the facility for the MDW and OHIP Data Mart infrastructure, and perform the tasks defined in this RFP to ensure the successful implementation of the MDW and provision of operational support for the OHIP Data Mart. This phase will end upon the successful completion of Phase 1 requirements outlined in this RFP. This phase will include the start of operations, and resolution of startup issues. NYSDOH anticipates the end of this phase to be on or about June 30, 2010.

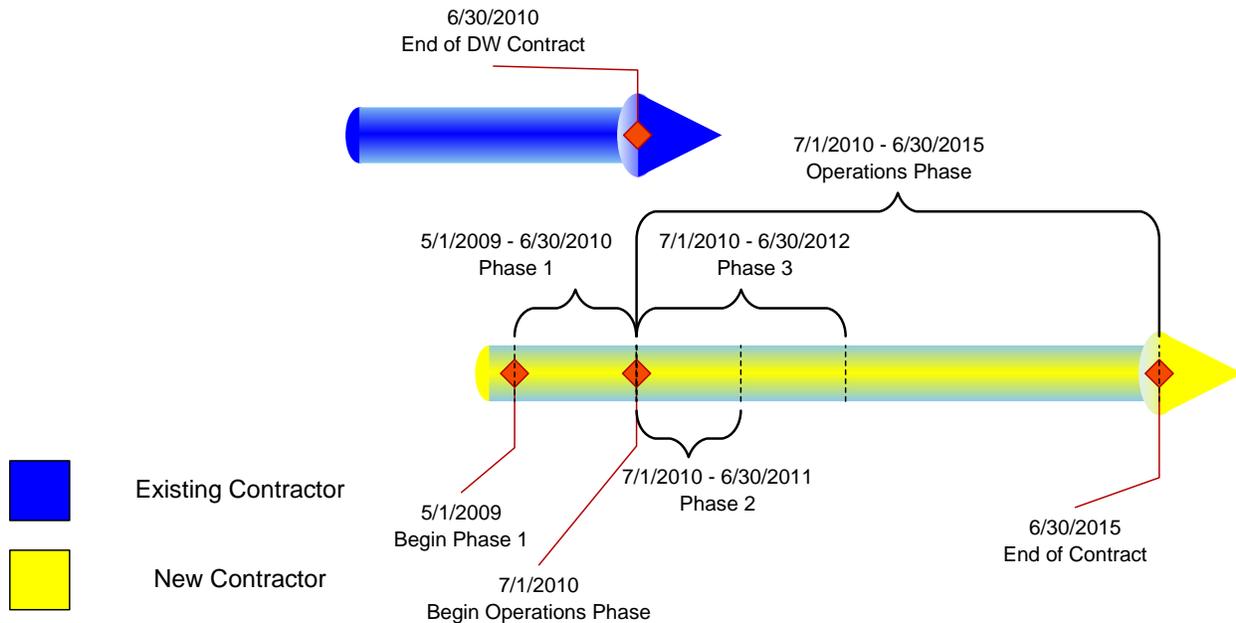
**Phase 2:** In this phase the Contractor will develop and implement the remaining requirements outlined in this RFP that can be supported by data from the existing eMedNY Medicaid Management Information System (MMIS) or the addition of new external data sources. The MMIS data sources for this phase will continue to be the existing eMedNY MMIS. During Phase 2, the MDW will be operational and serve as the production system for NYSDOH. The Contractor will use the development and test systems to develop the deliverables for Phase 2. This phase runs concurrently with year one (1) of the Operations Phase.

**Phase 3:** In this phase the Contractor will develop and implement a strategy to accept data from the replacement MMIS Contractor. This work will continue into the first two years of the Operations Phase of the MDW. Upon its implementation, the replacement MMIS will serve as the primary source of Medicaid data to the MDW. With the implementation of the replacement MMIS, the legacy MMIS will be shut down and no longer be available as a feed to the MDW. This phase runs concurrently with year two (2) of the Operations Phase.

**Operations Phase:** In this phase the Contractor will perform all the operational, change management and maintenance activities for the MDW and the operational activities for the OHIP Data Mart. This phase will begin at the end of Phase 1 (on or before July 1, 2010), and end on or about June 30, 2015, or as extended by the exercise of contract provisions or amendments to the contract.

The four overlapping Phases are represented in the Exhibit III-1 Medicaid Data Warehouse Implementation Phases.

**Exhibit III-1: Medicaid Data Warehouse (MDW) Implementation Phases**



In light of the fact that work identified in this RFP must be accomplished within the timeframe remaining in NYSDOH’s existing eMedNY Data Warehouse contract, NYSDOH has identified, in Attachment M Mandatory Requirements Traceability Matrix, the activities to be accomplished within each phase. Each of these phases is described in greater detail throughout the remainder of this section.

**B. PHASE 1**

**B.1. OVERVIEW**

**B.1.1. Project Initiation and Start-up**

In Phase 1 the Contractor shall execute project start-up activities.

The Contractor must assemble its key and core project staff at the primary project site in preparation for conducting the project tasks. An integrated project team will be assembled, consisting of the Contractor’s key and core project staff (as defined in Section IV.C Project Management Staffing Requirements) and NYSDOH staff designated for the project, as well as any Contractor assistance deemed necessary and appropriate.

The Contractor's key and core project staff must review the documentation provided in the Offerors' Library, and any other relevant documentation, to become familiar with the scope of the project. NYSDOH will work closely with Contractor staff and will provide several orientation sessions for Contractor staff to familiarize them with the NYSDOH organization and its programs. However, the Contractor has full responsibility for the successful completion of the project.

The Contractor must secure the facility, ready the office space as defined in this RFP and supply and install all hardware, software and telecommunication links for desktop support proposed by the Contractor. Prior to the project kick-off meeting, the Contractor must update the Project Plan and Schedule provided in its proposal.

A project kick-off meeting must be held to formally announce Project Initiation. This meeting must focus specifically on the responsibilities of the Contractor and working relationships and interactions among the Contractor and NYSDOH staff. The Project Plan and Schedule must also be reviewed.

During the project start-up, the Contractor will also develop and submit for NYSDOH approval the detailed planning documents that will define the working relationship between the Contractor and NYSDOH described in Section III.B.2.1 Project Start-up Deliverables.

Project Governance will be defined during this phase. The Contractor must update the detailed Project Plan and the work breakdown structures (WBS) submitted with the Contractor's proposal for NYSDOH approval. This plan will be used to baseline the project. The Contractor will be required to update this plan throughout the life of the contract.

### **B.1.2. Design, Development and Implementation of the MDW**

The Contractor must install the technical infrastructure, design, develop and implement the data model, metadata, data acquisition, data access and data delivery modules, database tables, programs, extract, transform and load (ETL) code, reports, and all other artifacts necessary to convert, implement and operate the eMedNY Data Warehouse under the new MDW structure.

### **B.1.3. Installation/Operation of the OHIP Data Mart**

The Contractor must install the infrastructure necessary to support the operation of the OHIP Data Mart, including, but not limited to, the production, development and the business continuity environments, as well as the network components. Upon completion of the infrastructure, the Contractor must develop all deliverables necessary to operate the OHIP Data Mart and assume responsibility for its operation.

## **B.2. DELIVERABLES**

### **B.2.1. Project Start-up Deliverables**

1. Assemble a project team of key and core staff;
2. Produce the necessary planning documents that will define the operational structure of the project. These documents include but are not limited to:
  - a. Project Plan and Project Schedule with a work breakdown structure (WBS);
  - b. Staffing Plan;
  - c. Configuration Management Plan;
  - d. Document Management Plan;
  - e. Issue/Resolution Plan;
  - f. Quality Management Plan;
  - g. Risk Management Plan;
  - h. Security, Privacy and Confidentiality Plan;
  - i. Facility Management Plan;
  - j. System and User Acceptance Test Plan;
  - k. Training Plan; and
3. Provide adequate facility space for Contractor and NYSDOH staff.

All documents listed above must be reviewed and approved by NYSDOH prior to release of corresponding payments outlined in Attachment N. These documents are detailed in Section IV Project Management.

### **B.2.2. MDW Infrastructure Deliverables**

1. Build the infrastructure for the MDW to include the necessary hardware, software, operating system, relational database management system (RDBMS), network and Web portal for the production, development, test, training, user acceptance test (UAT), and business continuity (back-up and recovery, failover and disaster recovery) environments; and
2. Build the infrastructure for the OHIP Data Mart to include the necessary hardware, operating system, and network for the production, development, test, and business continuity (back-up and recovery, failover and disaster recovery) environments.

### **B.2.3. Administrative Deliverables**

1. Develop all standards, policies and procedures for the MDW and all MDW components;
2. Execute parallel testing between the eMedNY Data Warehouse and the MDW; and
3. Validate the success of the MDW implementation through at least three (3) months of parallel testing against the eMedNY Data Warehouse.

#### **B.2.4. Data Acquisition, Data Access, Data Delivery and Managed Metadata Environment (MME) Deliverables**

1. Design the required databases;
2. Replace the existing ETL processes from the eMedNY Data Warehouse with new processes to load data into the MDW, and review and propose improvements to the existing ETL process and mappings for business rules;
3. Replace the existing ETL processes used to create feeds from the eMedNY Data Warehouse to dependent data marts with new processes to create feeds from the MDW, and review existing ETL processes and data mappings;
4. Convert all available eMedNY Data Warehouse data and load this into the database for the MDW;
5. Create a subset of the MME;
6. Use the existing data sources to populate the MDW;
7. Ensure all data feeds from the eMedNY Data Warehouse are converted and the target systems can operate from the new feeds;
8. Populate the baseline MDW tables through the conversion and load of data from the eMedNY Data Warehouse;
9. Convert reports from the eMedNY Data Warehouse to the MDW as defined in the Offerors' Library;
10. Acquire, implement and operate UPI Government Group's Java Surveillance and Utilization Review Subsystem (J-SURS);
11. Implement and operate a replacement to the Retrospective Drug Utilization Review Subsystem (R-DUR);
12. Assist the data warehouse users with the conversion of their queries and reports, enabling them to function against the MDW; and
13. Create new or modify existing feeds to the OHIP Data Mart to support the transfer of Healthcare Effectiveness Data and Information Set (HEDIS) functionality and reporting to that platform.

#### **B.2.5. Business Deliverables**

1. Establish the MDW as the new operational data warehouse;
2. Implement production system (includes Web portal, ETL, Metadata, and the Query and Report Repository); and
3. Execute comprehensive testing of the MDW.

#### **B.2.6. Other Deliverables**

1. Implement a training program and train approximately 400 data warehouse users to understand and use the MDW;
2. Implement the Security Requirements defined in this RFP;
3. Implement the Testing Requirements defined in this RFP;
4. Implement the Service Level Agreement Requirements defined in this RFP;

5. Implement the Facility Requirements defined in this RFP; and
6. Implement the User Support Requirements defined in this RFP.

## **C. PHASE 2**

Once the existing eMedNY Data Warehouse is operational under the new MDW structure, the Contractor will be required to implement additional functionality to the Phase 1 product, based on the remaining requirements in this RFP. This may include, but not limited to, new data sources being fed into the MDW, new attributes being pulled from the MDW, and new reports or new analytics being developed.

### **C.1. DELIVERABLES**

1. Add new functionality to the MDW (e.g., new data elements, new external data sources and new reports and queries);
2. Update the ETL processes to support the new functionality for Phase 2;
3. Implement the remaining MME requirements defined in this RFP;
4. Convert the remaining user reports;
5. Add new external data sources to the data warehouse;
6. Add additional data elements from the existing MMIS;
7. Develop and implement new reports and queries as identified in the Joint Application Design (JAD) sessions;
8. Execute comprehensive testing of the Phase 2 enhancements for the MDW;
9. Train the data warehouse user community in Phase 2 enhancements to the MDW;
10. Complete the conversion and load of claims history in the MDW. At completion, the MDW will contain claims history data from May 1990 to the present. The source that will be used to complete this process is the OHIP Data Mart, which has not purged claims history data and will provide claims history data back to May 1990; and
11. Implement the Phase 2 enhancements for the MDW into production.

## **D. PHASE 3**

In the near future, NYSDOH will be issuing a Request for Proposal (RFP) for a new Medicaid Management Information System (MMIS). The third phase will be the acceptance of the data from the new MMIS system. During this phase the Contractor will be required to work with the selected MMIS contractor to accept data sources from the eMedNY replacement system.

### **D.1. DELIVERABLES**

1. Change the sourcing for the MDW from the replacement MMIS;
2. Source new data from the replacement MMIS to the MDW;
3. Modify and develop queries and reports to utilize the new data added to the MDW;
4. Implement the Medicaid Statistical Information Statistics (MSIS) file from MDW to replace functionality supported by the legacy MMIS; and

5. Work with the new MMIS contractor to achieve a smooth transition.

## **E. OPERATIONS PHASE AND TRANSITION**

The Contractor is responsible for ongoing operations, monitoring and maintenance of the MDW and the operation of the OHIP Data Mart. The Contractor is responsible for monitoring and analyzing reports generated by the system and responding to any reported issues. The Contractor must provide a Turnover Plan detailing the approach to the transitioning systems and operational responsibilities to the successor contractor.

Twelve (12) months prior to the end of the operations phase (on or about June 30, 2014) the Contractor must begin preparations for transitioning systems and operational responsibilities. The Contractor must work with the fiscal agent, other contractors and NYSDOH to ensure a smooth transition. This transition period will continue until the end of the contract period (on or about June 30, 2015), or as extended by the execution of contract amendments.

### **E.1. DELIVERABLES**

1. Operate the MDW with minimal disruption;
2. Operate the MDW within the service levels defined in this RFP;
3. Maintain a facility that is conducive to a productive environment;
4. Be proactive with regard to the performance of the MDW;
5. Employ a competent staff that becomes an extension of the NYSDOH staff.
6. Achieve a smooth and orderly transition to a new contractor;
7. Train the successor contractor; and
8. Continue providing full operational support service to NYSDOH during the transition.

## **F. SYSTEM CHANGE MANAGEMENT**

The Contractor will be responsible for modifying the MDW throughout the term of the contract. System Change Management is the process whereby core system enhancements, as determined by NYSDOH (or by the Contractor, with NYSDOH approval) are made. This may include, but not be limited to an additional function or requirement resulting in a change to existing file structures, data sets or processing logic of the MDW.

The methodology used by the Contractor for the implementation of System Change Management tasks must be included in the Contractor's proposed methodology as defined in response to Section IV Project Management.

NYSDOH will initiate modifications to the system through the submission of a Change System Request (CSR) form. The Contractor will respond, in writing, to the requests submitted by NYSDOH within five (5) business days of receipt. The response shall consist of an acknowledgment of the request and a preliminary assessment of the effort (e.g., number of hours) required for completing the modification.

System Change Management Tasks may fall into one of three major categories:

1. **Small System Change Management Tasks:** These represent small projects (under five-hundred (500) hours) that may not require the application of detailed project management methodology. The Contractor will be asked to describe how they will manage these tasks;
2. **All Other System Change Management Tasks:** These are projects that are estimated to take five-hundred (500) or more staff hours to complete. They will originate with the CSR process. These tasks require the application of detailed project management methodology, including status reporting. The Contractor will be asked to describe how it will manage these projects in accordance with practices described in Section IV Project Management of this RFP; or
3. **Architectural and/or Services Extensions** deemed necessary by NYSDOH.



**G. SUMMARY OF DOCUMENTATION DELIVERABLES**

This section presents a listing of all documentation deliverables that must be submitted by the contractor, organized by project phase. Phase 1 Project Initiation documentation deliverables must be submitted within sixty (60) days of contract approval.

**MDW Replacement/OHIP Data Mart Operational Support Project Documentation Deliverables by Project Phase**

<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 1</b>	
<b>Project Initiation and Planning</b>	
<b>Deliverable</b>	<b>Description</b>
Project Plan and Project Schedule* Phase 1 Scope & Approach Document Staffing Plan Configuration Management Plan Document Management Plan Issue/Resolution Plan Quality Management Plan Risk Management Plan Security, Privacy and Confidentiality Plan Facility Management Plan Physical Security Plan Training Plan Business Continuity Plan* (including Failover, Backup/Recovery & Disaster Recovery)	<ul style="list-style-type: none"> <li>• Provide planning documents for the entire MDW Replacement/OHIP Data Mart Operational Support Project;</li> <li>• Deliverables must address all system components and requirements specified in Attachment M Mandatory Requirements Traceability Matrix; and</li> <li>• Plans will be maintained throughout the life of the project, with updates delivered, as specified, focusing on subsequent project phase activities.</li> </ul>
* Must address both MDW and OHIP Data Mart tasks and activities, including detailed tasks and activities for Phase 1.	



<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 1</b>	
<b>Requirements Definition and Analysis</b>	
<b>Deliverable</b>	<b>Description</b>
MDW Requirements Definition Document (RDD) MDW Conceptual Data Model Requirements Traceability Matrix	<ul style="list-style-type: none"> <li>• Develop MDW Requirements Definition Document (RDD);</li> <li>• Develop MDW Conceptual Data Model; and</li> <li>• Develop Requirements Traceability Matrix for MDW and OHIP Data Mart Operational Support tasks.</li> </ul>

<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 1</b>	
<b>Design</b>	
<b>Deliverable</b>	<b>Description</b>
MDW Logical/Physical Data Model MDW Technical Design Document (TDD)	<ul style="list-style-type: none"> <li>• Develop MDW Logical/Physical Data Model; and</li> <li>• Develop MDW Technical Design Document (TDD).</li> </ul>

<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 1</b>	
<b>Construction</b>	
<b>Deliverable</b>	<b>Description</b>
MDW Unit Tested Code and Associated Documentation	<ul style="list-style-type: none"> <li>• Complete development and unit testing of MDW code; and</li> <li>• Develop associated documentation.</li> </ul>

<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 1</b>	
<b>Test</b>	
<b>Deliverable</b>	<b>Description</b>
MDW Development Test Plan MDW User Acceptance Test Plan MDW Test Scripts, Cases and Results	<ul style="list-style-type: none"> <li>• Develop MDW Development Test Plan;</li> <li>• Develop MDW User Acceptance Test Plan; and</li> <li>• Develop MDW Test Scripts, Cases and Results.</li> </ul>



<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 1</b>	
<b>Implementation</b>	
<b>Deliverable</b>	<b>Description</b>
MDW Training Plan (including training curriculum and materials) MDW User Documentation MDW Operations Manual MDW As-Delivered System Documentation  OHIP Data Mart Operations Manual	<ul style="list-style-type: none"> <li>• Develop MDW Training Plan (including training curriculum and materials);</li> <li>• Develop MDW User Documentation;</li> <li>• Develop MDW Operations Manual;</li> <li>• Develop MDW As-Delivered System Documentation; and</li> <li>• Develop OHIP Data Mart Operations Manual.</li> </ul>



<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 2</b>	
<b>Project Initiation and Planning</b>	
<b>Deliverable</b>	<b>Description</b>
Project Plan and Project Schedule* Phase 2 Scope & Approach Document  * Must address both MDW Replacement and OHIP Data Mart tasks and activities	<ul style="list-style-type: none"> <li>• Update Project Plan and Schedule to provide detailed Phase 2 tasks and activities; and</li> <li>• Develop Phase 2 Scope &amp; Approach Document.</li> </ul>

<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 2</b>	
<b>Requirements Definition and Analysis</b>	
<b>Deliverable</b>	<b>Description</b>
MDW Requirements Definition Document (RDD) MDW Conceptual Data Model Requirements Traceability Matrix	<ul style="list-style-type: none"> <li>• Develop MDW Requirements Definition Document (RDD);</li> <li>• Develop MDW Conceptual Data Model; and</li> <li>• Develop Requirements Traceability Matrix for MDW and OHIP Data Mart Operational Support tasks.</li> </ul>

<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 2</b>	
<b>Design</b>	
<b>Deliverable</b>	<b>Description</b>
MDW Logical/Physical Data Model MDW Technical Design Document (TDD)	<ul style="list-style-type: none"> <li>• Develop MDW Logical/Physical Data Model; and</li> <li>• Develop MDW Technical Design Document (TDD).</li> </ul>

<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 2</b>	
<b>Construction</b>	
<b>Deliverable</b>	<b>Description</b>
MDW Unit Tested Code and Associated Documentation	<ul style="list-style-type: none"> <li>• Complete development and unit testing of MDW code; and</li> <li>• Develop associated documentation.</li> </ul>



<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 2</b>	
<b>Test</b>	
<b>Deliverable</b>	<b>Description</b>
MDW System Test Plan MDW User Acceptance Test Plan MDW Test Scripts, Cases and Results	<ul style="list-style-type: none"> <li>• Develop MDW System Test Plan;</li> <li>• Develop MDW User Acceptance Test Plan; and</li> <li>• Develop MDW Test Scripts, Cases and Results.</li> </ul>

<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 2</b>	
<b>Implementation</b>	
<b>Deliverable</b>	<b>Description</b>
MDW Training Plan (including training curriculum and materials) MDW User Documentation MDW Operations Manual MDW As-Delivered System Documentation  OHIP Data Mart Operations Manual	<ul style="list-style-type: none"> <li>• Develop MDW Training Plan (including training curriculum and materials);</li> <li>• Develop MDW User Documentation;</li> <li>• Develop MDW Operations Manual;</li> <li>• Develop MDW As-Delivered System Documentation; and</li> <li>• Develop OHIP Data Mart Operations Manual.</li> </ul>



<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 3</b>	
<b>Project Initiation and Planning</b>	
<b>Deliverable</b>	<b>Description</b>
Project Plan and Project Schedule* Phase 3 Scope & Approach Document  * Must address both MDW Replacement and OHIP Data Mart tasks and activities	<ul style="list-style-type: none"> <li>• Update Project Plan and Schedule to provide detailed Phase 3 tasks and activities; and</li> <li>• Develop Phase 3 Scope &amp; Approach Document.</li> </ul>

<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 3</b>	
<b>Requirements Definition and Analysis</b>	
<b>Deliverable</b>	<b>Description</b>
MDW Requirements Definition Document (RDD) MDW Conceptual Data Model Requirements Traceability Matrix	<ul style="list-style-type: none"> <li>• Develop MDW Requirements Definition Document (RDD);</li> <li>• Develop MDW Conceptual Data Model; and</li> <li>• Develop Requirements Traceability Matrix for MDW and OHIP Data Mart Operational Support tasks.</li> </ul>

<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 3</b>	
<b>Design</b>	
<b>Deliverable</b>	<b>Description</b>
MDW Logical/Physical Data Model MDW Technical Design Document (TDD)	<ul style="list-style-type: none"> <li>• Develop MDW Logical/Physical Data Model; and</li> <li>• Develop MDW Technical Design Document (TDD).</li> </ul>

<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 3</b>	
<b>Construction</b>	
<b>Deliverable</b>	<b>Description</b>
MDW Unit Tested Code and Associated Documentation	<ul style="list-style-type: none"> <li>• Complete development and unit testing of MDW code; and</li> <li>• Develop associated documentation.</li> </ul>



<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 3</b>	
<b>Test</b>	
<b>Deliverable</b>	<b>Description</b>
MDW System Test Plan MDW User Acceptance Test Plan MDW Test Scripts, Cases and Results	Develop MDW System Test Plan; Develop MDW User Acceptance Test Plan; and Develop MDW Test Scripts, Cases and Results.

<b>MDW Replacement/OHIP Data Mart Operational Support Project Phase 3</b>	
<b>Implementation</b>	
<b>Deliverable</b>	<b>Description</b>
MDW Training Plan (including training curriculum and materials) MDW User Documentation MDW Operations Manual MDW As-Delivered System Documentation  OHIP Data Mart Operations Manual  MDW and OHIP Data Mart Turnover Plan	<ul style="list-style-type: none"> <li>• Develop MDW Training Plan (including training curriculum and materials);</li> <li>• Develop MDW User Documentation;</li> <li>• Develop MDW Operations Manual;</li> <li>• Develop MDW As-Delivered System Documentation;</li> <li>• Develop OHIP Data Mart Operations Manual; and</li> <li>• Develop MDW and OHIP Data Mart Turnover Plan.</li> </ul>

The Operations Phase does not include any required documentation deliverables.

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## **IV. PROJECT MANAGEMENT**

### **A. PROJECT MANAGEMENT OVERVIEW**

Project Management is defined as the communication mechanisms, controls, tasks and procedures that the Contractor will use to manage all the tasks identified in the RFP. It is the discipline that employs the Contractor's knowledge, skills and abilities to achieve project goals.

The partnership between NYSDOH and the Contractor will be an opportunity to incorporate the expertise and knowledge of the Contractor into the design of NYSDOH's MDW. NYSDOH will commit knowledgeable staff who understand the eMedNY Data Warehouse and the OHIP Data Mart and will work closely with the Contractor. The overall success of the project will depend on the development of a close working relationship including ongoing communications at all levels between the Contractor and NYSDOH. NYSDOH requires the Contractor to provide project management services detailed in the sections below.

### **B. PROJECT MANAGEMENT METHODOLOGY & REQUIREMENTS**

All tasks associated with this RFP will be governed by the Contractor's proposed Project Management Methodology. The Contractor must describe its Project Management Methodology within the major project stages of:

1. Project Initiation and Planning;
2. Project Execution and Control; and
3. Project Closeout.

NYSDOH realizes that not all steps in the proposed methodology will be needed for every project. The Contractor may manage a small project (one that would require five-hundred (500) hours or less to accomplish) differently than a large project. If certain documentation deliverables described in the Contractor's proposed Project Management Methodology will not be produced because of project size, the Contractor must note these in its proposal response.

#### **B.1. PROJECT INITIATION AND PLANNING**

At a minimum the Contractor's proposed Project Management Methodology for the Project Initiation and Planning Phase must include the following documentation deliverables described in this section, including:

1. Project Plan and Project Schedule;
2. Staffing Plan;

3. Configuration Management Plan;
4. Document Management Plan;
5. Issue/Resolution Plan;
6. Quality Management Plan;
7. Risk Management Plan; and
8. Security, Privacy and Confidentiality Plan.

Additional required documentation deliverables, and their associated RFP sections, are set forth in Section III.G Project Approach Summary of Documentation Deliverables.

### **B.1.1 Project Plan and Project Schedule**

The Offeror must provide in its proposal a high-level Project Schedule based on their understanding of the scope of work presented in this RFP. This high-level schedule will be continuously refined during the project life-cycle and will serve as the primary source of information regarding project status reports and progress. The proposal must also include a detailed description of the Offeror's understanding of the scope of this project.

Early in the project the Contractor will perform scope planning and scope definition tasks to develop a Project Plan that will include all the activities necessary to carry out the Contractor's obligations in this RFP. This plan will include a Work Breakdown Structure (WBS) that must identify and record all major tasks, deliverables and milestones associated with the project. The Project Plan will be resource loaded by the Contractor. The work must be decomposed into tasks that allow for accurate estimation of the work and resources required to complete the project. This plan will be continuously refined by the Contractor throughout the life of the contract.

The Contractor must describe its standard estimation methodology that will be used for all project estimates throughout the Contract term. This methodology will be reviewed and approved by NYSDOH. This methodology must:

1. Be based on an objective analytical foundation;
2. Be based upon quantitative measures (e.g., number of sources, number of objects, transformation, Standard Lines of Code, function points, etc.) to ensure objective estimates;
3. Include a definition and description of the types and number of system components (e.g., code, screens, reports, interfaces, documentation) to be added or changed, the complexity level associated with the component add or change, the hours assigned, and the associated rationale or assumptions that support the hours assigned;
4. Include a labor skill mix for the project;
5. Include a description of the basis for the estimates presented; and

6. Provide for prompt completion of the estimation process for each System Change Management project.

Any tools used by the Contractor to establish project estimates must be made available to NYSDOH for its use. The Contractor must provide training for staff identified by NYSDOH.

During execution of the project, the Contractor must measure performance according to the WBS and manage changes to the project plan and schedule as requested by NYSDOH. When tasks are complete, the Contractor must seek verbal acceptance from NYSDOH for each task, and formal acceptance of each deliverable. Contractor estimates are subject to audit requirements specified in Attachment I Contract Requirements.

All projects must include a Project Schedule with duration estimates for each task in the WBS; the sequence of tasks, including identification of the critical path; and the method to be used by the Contractor to control time spent on the project. All project schedules will be rolled-up into a Master Schedule for the project.

As the Contractor evaluates system change requests for additional functionality, the Contractor must provide to NYSDOH, as part of its analysis, recommendations for any additional hardware and/or software components, and other technical infrastructure and services necessary to implement the project. NYSDOH will not be obligated to approve any of these requests.

### **B.1.2 Staffing Plan**

For all projects and all major system enhancements, the Contractor must create a Staffing Management Plan, including organizational charts with defined responsibilities and contact information. Resources must be allocated by name to the WBS. During project execution, the Contractor must provide appropriate training and management supervision to all staff. NYSDOH, at its sole discretion, may waive this requirement for smaller projects.

### **B.1.3 Configuration Management Plan and Methodology**

The Contractor must provide a Configuration Management Plan which describes the processes, configuration management tools and procedures the Contractor will use to control the migration and of tested hardware and software (system and application) to the production environment.

The Contractor must implement a Configuration Management System and use proven promotion and version control procedures for the implementation of modified:

1. System modules;
2. Commercial-off-the-shelf (COTS) products;
3. System software (e.g. Operating Systems (OS));

4. Network;
5. Files (including documents);
6. Databases; and
7. Hardware.

The Contractor must provide in its proposal a detailed description of its Configuration Management Methodology which must include at a minimum:

1. A description of how the Contractor will control multiple activities occurring simultaneously across multiple environments (e.g., development, test, User Acceptance Testing (UAT), training, production and business continuity);
2. A description of tools and business processes to control software development, including check in/checkout procedures and a responsibility audit trail;
3. A description of business processes and procedures for controlling the migration of code from design through coding, testing phases (e.g., unit, integration, acceptance) and promotion into production; and
4. A description of the organizational structure to control all system development and maintenance.

All environments must be controlled by the Contractor's proposed Configuration Methodology.

#### **B.1.4 Document Management Plan**

The Contractor must provide a Document Management Plan which describes how the Contractor will electronically manage the documents and attachments produced throughout the life of the project. Documents and deliverables must be stored and easily retrievable via an electronic document management system that can be accessed outside the data warehouse environment and must contain an online help facility. Documents can include but are not limited to correspondence, design documents, technical documents, and planning documents. All documents will be produced in a format approved by NYSDOH.

This plan must:

1. Address how documents will be provided in a centralized location and available to staff and users in a timely manner in all phases of the contract;
2. Describe how the repository will be supported during normal business hours;
3. Describe how State staff access the information in the repository;
4. Provide the layout of the document repository structure;
5. Describe any tools that the Contractor will use;
6. Describe access and security rules; and
7. Describe keyword/indexing.

The Contractor must use a COTS correspondence management system to manage official correspondence between the Contractor and NYSDOH. All written and official electronic correspondence between NYSDOH and the Contractor must be in a format prescribed by NYSDOH and logged, archived and maintained by the Contractor for seven (7) years beyond the term of the contract and any extension(s) of the contract. The Contractor must provide NYSDOH with electronic access to this correspondence, including access to images of all written correspondence.

### **B.1.5 Issue/Resolution Plan**

Issue management involves capturing, reporting, escalating, tracking, and resolving problems that occur as a project progresses. Since issues have the potential to escalate into problems necessitating change control, the Contractor must put in place an issue/resolution plan and process. The Contractor must take a proactive approach to issue identification and resolution and must identify, track and resolve issues. The Contractor must describe how it prioritizes issues and how it handle issues which are prioritized as critical (threatens the successful completion of the project) as opposed to issues that are characterized as non-critical.

The Contractor must develop an Issue/Resolution Plan that describes the Contractor's approach to issue resolution and provides NYSDOH with the ability to monitor resolution of issues throughout the life of the contract.

The primary goals of this Plan are to ensure that issues are identified, evaluated and assigned for resolution. In addition, issue resolutions or decisions are documented and communicated to all affected parties.

The Issue/Resolution Plan must include, at a minimum, the following:

1. Issue/Resolution templates;
2. A tool to document, track and manage issues identified during the project. The tool must be maintained throughout the project and updated regularly;
3. Detailed record of all the issues identified throughout the life of the project;
4. Action taken to address each issue and the subsequent results;
5. Status reporting method for the project sponsor, steering committee, senior management, and the like;
6. Communication of issues to key stakeholders; and
7. A mechanism for seeking and acting on feedback regarding project issues to encourage involvement of key stakeholders.

### **B.1.6 Quality Management Plan**

For all deliverables associated with the requirements in this RFP, the Contractor must employ a formal Quality Management Methodology. The Contractor's Quality

Management Plan will define the methodology and the checklists, metrics and tools the Contractor will use to measure and assess the quality and accuracy of its performance of day-to-day operations responsibilities and how the Contractor will correct any deficiencies. The quality measurement process applies to plans and documents, as well as programs and operational functions. The Quality Management Plan must reflect a process for sampling, auditing and continuous quality improvement.

The Quality Management Plan encompasses taking a proactive approach to analyzing and assessing the quality and accuracy of performance. Part of this plan is a description of the Contractor's methodology for Quality Assurance. Quality Assurance is the systematic process of checking to ensure that the warehouse, its related services, and deliverables are developed to meet all specified RFP requirements.

The Quality Assurance requirements are based on the following Quality Assurance framework:

1. Requirements adherence;
2. Service Level Agreement (SLA) adherence;
3. Data warehouse project documentation;
4. Source systems documentation;
5. Business intelligence and data warehouse documentation;
6. End-user training;
7. End-user support;
8. Performance monitoring; and
9. Change control management.

The Quality Assurance function will improve work processes and efficiency in data warehouse development, deployment, operations and enhancement. The Quality Assurance requirements apply for the life of the contract and are not specific to any particular phase. NYSDOH encourages responses that demonstrate a thorough understanding of Quality Assurance.

Throughout the life of this contract NYSDOH or its authorized agents will conduct Quality Assurance audits and/or Independent Verification and Validation (IV&V) activities at which time the RFP requirements will be audited to ensure that the Contractor fulfills all requirements.

### **B.1.7 Risk Management Plan**

The Contractor must develop and use a standard Risk Management Plan approved by NYSDOH for all projects and all major system enhancements to address potential issues that may compromise the operational readiness of the MDW. The plan must describe the methodology the Contractor will use to address the process and timing for risk identification, describe the process for tracking and monitoring risks, identify the Contractor staff that will be involved in the risk management process, identify the tools

and techniques that will be used in risk identification and analysis, describe how risks will be quantified and qualified, and how the Contractor will perform risk response planning.

Throughout the execution of projects and major system enhancements, the Contractor must use the standard Risk Management methodology as approved by NYSDOH, producing lists of identified risks. For each risk, the Contractor must evaluate and set the risk priority based on the likelihood the risk will occur and the potential impact of the risk, assign risk management responsibility, and create a risk management strategy. For each significant accepted risk, the Contractor must develop risk mitigation strategies, avoidance, mitigation, transfer or acceptance to limit the impact.

The Risk Management methodology must include aggressive monitoring for risks, identify the frequency of risk reports, and describe the plan for timely notification to NYSDOH of any changes in risk or trigger of risk events.

### **B.1.8 Security Privacy and Confidentiality Plan**

Section XI Security Requirements B.1 describes contractor requirements for the Security, Privacy and Confidentiality Plan.

### **Proposal Requirements**

**Describe in your proposal how you will support all contractor requirements set forth in Section B.1 Project Initiation & Planning, above, and address their associated requirements listed in Attachment M.**

## **B.2. PROJECT EXECUTION AND CONTROL**

The purpose of the Project Execution and Control Stage is to develop deliverables defined during project initiation and planning activities. During Project Execution and Control, the project team employs all the plans, schedules, procedures and templates prepared during prior phases. This stage concludes when the product or service (the MDW) is fully developed, tested, accepted, implemented. The Project Execution and Control Stage of the Contractor's Project Management Methodology must include description of the Contractor's System Development Methodology (SDM). The SDM must describe the differences, if any, when it is applied to small projects, application software changes, database changes or metadata changes.

### **B.2.1 System Development Methodology**

The Contractor must describe in its proposal the System Development Methodology that it will implement for the work associated with this RFP. The Contractor must note where there may be a difference in the methodology or documentation deliverables due to any differences in its approach to application

development, metadata development or database development or where there may be differences due to implementation platforms.

### **B.2.2 Requirements Definition**

The Contractor must describe in detail its approach to requirements gathering, analysis and traceability. The Contractor must describe its steps in conducting a thorough requirements analysis. The Contractor must describe how NYSDOH stakeholders will be identified and how they will become active participants in the process. The Contractor also must describe in its proposal the documentation deliverables it will produce as part of the requirements analysis documentation.

The Requirements Definition process must, at a minimum include the following activities and deliverables. The Contractor must:

1. Schedule and facilitate a series of Joint Application Design (JAD) sessions involving members of NYSDOH and any additional data warehouse users and stakeholders identified by NYSDOH;
2. Complete the Requirements Definition Document (RDD) after the last JAD session and review this document with members of NYSDOH and any additional data warehouse users and stakeholders identified by NYSDOH;
3. Maintain the Requirements Traceability Matrix defined in Appendix M that will be used throughout the life of the contract. This document will be used to map each requirement to all milestones and project phases in which they occur. The matrix must be continuously updated by the Contractor throughout the life of the contract. All requirements emerging from the JAD sessions or System Change Management must be added to the matrix by the Contractor;
4. Update the Project Plan based upon the requirements identified in the JAD sessions and added to the traceability matrix; and,
5. Analyze the existing ETL processes to determine the data validation, cleansing and transformation rules for the existing data warehouse and schedule a series of reviews with members of NYSDOH to validate these existing rules and to discover any new rules.

### **B.2.3 System Design**

After the analysis is complete, the Contractor must produce a Requirements Definition Document (RDD) and a Technical Design Document (TDD) and any other design documentation deliverables that support scope definition and facilitate the traceability of requirements from requirements analysis through to the final system documentation.

In the System Design Process, the Contractor must create a detailed design for the MDW. The purpose of this phase is to certify that the Contractor and NYSDOH have the same understanding of the project scope, detail, dependencies and the data warehouse system interrelationships with the MMIS, external source systems, internal analytical applications and the external data marts. System design deliverables must be developed according to the plans set forth during the Project Initiation Stage.

The major objectives of the System Design Process are to:

1. Ensure the Contractor has a thorough, detailed understanding of the MDW, its operational use and business requirements;
2. Validate and refine the business requirements with NYSDOH;
3. Confirm how the proposed solution follows Medicaid Information Technology Architecture (MITA) principles; and
4. Provide a basis for the system build.

At a minimum the Contractor must:

1. Create a Requirements Definition Document (RDD) and Technical Design Document (TDD) for each new initiative or modification to an application or infrastructure component; and
2. Complete all documentation deliverables outlined in Section III Project Approach G Summary of Documentation Deliverables.

#### **B.2.4 System Construction and System Test**

Once the design documents are approved the Contractor will be required to build and validate the new system. Development efforts in this phase are based on the technical solution created during System Design, which, in turn, was based on the functional and operational requirements captured during System Requirements Definition.

Included in this phase is the construction of all components of the system, including utilities required to adequately prepare and load the data. In addition, System Construction consists of testing each unit and then an integration test of all system components, with each set of tests being performed against a progressively larger grouping of components until the operation of the system in its entirety has been verified.

Since the ultimate goal of System Construction is to produce a system that is ready for acceptance testing by NYSDOH, an aspect of this phase is the creation of the various training materials and system documentation that support the new system.

These materials need to address both the use and maintenance of the system, and will play an integral part in the System Acceptance and System Implementation phases of the lifecycle.

The Contractor must:

1. Update each RDD and TDD to reflect changes that occurred during the development and test periods;
2. Report the number of defects encountered during unit and system testing, and document the cause for each defect;
3. Develop and deliver:
  - a. All ETL processes;
  - b. All reports and queries to be implemented;
  - c. All tables to be implemented in production (data warehouse tables, staging tables and data mart tables);
  - d. All utilities that will be used to monitor the performance of the data warehouse;
  - e. All components of the Metadata System;
  - f. All components of the Query and Report Repository;
  - g. All components of the data warehouse Web Portal;
  - h. All application components; and
4. Present a checklist indicating all components have successfully completed unit and system integration testing.

### **B.2.5 User Acceptance Testing**

After unit and integration testing, the Contractor must comply with the remaining testing requirements as outlined in Section X Testing Requirements.

### **B.2.6 Data Warehouse Project Documentation**

Timely, complete and accurate project documentation is a requirement for the successful implementation, operation and enhancement of the MDW. Documentation often represents the first tangible metadata for a MDW, thus setting the standard for the system's metadata. Lastly, project documentation enables NYSDOH and the Contractor to have a clear understanding and control of the MDW project's execution during the life of the contract.

The Contractor must:

1. Develop a standardized document template and style sheet for NYSDOH's review and approval;
2. Develop a document outline for each required document for NYSDOH's review and approval. The outline will consist of the major sections of the document and will be annotated as to the purpose of the document and the content and purpose of each section within the document; and
3. Develop and maintain all project documentation for the MDW. Section III Project Approach G Summary of Documentation Deliverables provides a list of the required project documents.

## **B.2.7 Documentation of Data Source Systems**

A source system is any computer system that provides data used to populate the data warehouse. The eMedNY MMIS serves as the primary source system for the eMedNY Data Warehouse, though data also is provided from other systems both internal and external to NYSDOH. Understanding where the data warehouse data originates, its business definition and business rules, and who is responsible for the source system is critical for the successful management of data loaded into the data warehouse.

The Contractor must:

1. Maintain the following documentation for each of the source systems based on information provided by NYSDOH:
  - a. Process flows;
  - b. Data models;
  - c. Data dictionary;
  - d. Support team contacts;
  - e. Business groups and users;
  - f. Application, data and technical environments;
  - g. Data sharing agreements;
  - h. Service level agreements (between the source system and the data warehouse);
2. Provide all source system documentation to NYSDOH within one business day of the request; and,
3. Provide NYSDOH all source system documentation every six (6) months for validation of its completeness, timeliness and accuracy.

## **B.2.8 Performance Monitoring**

NYSDOH requires that data warehouse processes and systems generate automated performance statistics and reports to assist in monitoring the data warehouse performance. NYSDOH staff, in executing its Quality Assurance responsibilities for performance monitoring, will include the use of these reports.

The Contractor must:

1. Submit to NYSDOH for review and approval, all processes created to monitor data warehouse performance;
2. Submit to NYSDOH data warehouse performance reports to show that the Contractor has met all requirements as defined in the RFP; and
3. Select and employ automated monitoring tools for all major system components that are relative to the service level agreements (SLAs) detailed in Section VII Service Level Agreement Requirements.

### **B.2.9 Change Control Management**

The Change Control Management process ensures the integrity of the data warehouse by preventing the implementation of all processes, data, hardware, software, and metadata until the validity of the change has been verified through NYSDOH. As part of this process the Contractor must propose and maintain a Change Management System. This system will assist NYSDOH staff in establishing reasonable completion dates and setting priorities for modifications. This system must also allow NYSDOH and Contractor management staff to review current priorities and timeliness, change priorities by adding new tasks and target dates, and then immediately see the impact of these new priorities on pre-existing priorities and their target dates.

The Contractor must:

1. Develop a Change Control Management Plan that sets forth change control policies and procedures, including the implementation of a Change Control Management System;
2. Implement a Change Control Management System that:
  - a. Supports online entry of new Change System Requests (CSR);
  - b. Provides contractor and NYSDOH staff online access to a Change Management System with security levels specified by NYSDOH;
  - c. Provides online reporting and status inquiry for all CSRs in NYSDOH specified category(s);
  - d. Displays status, reports coding changes, attaches test results, and records all notes from NYSDOH and Contractor staff related to each CSR; and
  - e. Produces reports that are downloadable in NYSDOH-approved formats.

### **B.2.10 Scope Management**

The Contractor will be required to take a proactive approach to managing scope and submit a Scope Management Plan that describes its approach, policies and procedures governing managing project scope.

As the Contractor evaluates CSRs for additional functionality, the Contractor must provide to NYSDOH, as part of its analysis, the impact the change will have on the resources already committed and the deliverables already scheduled.

If the requirement is approved by NYSDOH the Contractor must provide any recommendations for any additional hardware, software or other improvements that would be necessary to implement the change. For example, this might be additional storage/processing capability for the MDW or a recommendation for a separate platform (a sub-mart) that receives a feed from the MDW or interacts directly with the MDW to provide the needed functionality. If deemed critical to the success of the project, NYSDOH reserves the right to acquire the financial resources (contract amendment) to

obtain requisite hardware and software. The Contractor must describe in detail the processes, tools and procedures it will use to manage scope.

### **B.2.11 Status Reporting Requirements**

Status reporting ensures that NYSDOH and the Contractor have a common understanding of project progress. It identifies any roadblocks to success and enables these to be circumvented before they negatively impact the project. Status reporting includes Contractor submission of the following:

1. Weekly Status reports including descriptions of:
  - a. Activities completed in the preceding period;
  - b. Activities planned for the next period;
  - c. Issues requiring resolution;
  - d. Risks and associated mitigation plans; and
  - e. Actual project progress (schedule and budget) against planned, with explanation of any variances and associated mitigation plans.
2. Monthly status reports which provide a brief summary of weekly reports; and
3. Quarterly status reports which provide a brief summary of monthly reports.

### **B.2.12 Meeting Requirements**

#### **General Meeting Requirements**

1. The Contractor's key and core staff must be available to NYSDOH at NYSDOH's offices as requested for any meetings that may arise as a result of the project tasks associated with this RFP; and
2. The Contractor will be responsible for recording minutes for all meetings it will attend.

#### **Status Meetings**

The Contractor must:

1. Hold a data warehouse operational meeting weekly with NYSDOH to describe at a minimum:
  - a. Data warehouse performance issues;
  - b. Data warehouse availability;
  - c. Discontinuity of service incidents and their resolutions;
  - d. Identified error trends;
  - e. Maintenance plans and priorities for the data warehouse; and
  - f. Help Desk statistics that support the Help Desk Responsiveness requirements outlined in Section VII Service Level Agreement Requirements;
2. Prepare the agenda for the weekly status meeting and disseminate it to NYSDOH three (3) business days prior to the status meeting; and

3. Take minutes for the weekly status meeting and disseminate them to NYSDOH two (2) business days following the status meeting.

### Quarterly Meetings

The Contractor must conduct quarterly status user group meetings for each user group identified by NYSDOH. Quarterly meetings must begin within ninety (90) calendar days of the contract start date.

### Proposal Requirements

**Describe in your proposal how you will support all contractor requirements set forth Section B.2 Project Execution and Control, above, and address their associated requirements listed in Attachment M.**

### B.3. PROJECT CLOSEOUT

A project is considered complete when it has been successfully implemented and transitioned to NYSDOH and approved by the NYSDOH Project Sponsor. At this point in the project management lifecycle, the responsibilities of the Project Manager are to assess how closely the project met customer needs, highlight what worked well, learn from mistakes made during the project, identify patterns and trends, derive ways to improve upon processes executed throughout the project, and, most importantly, communicate results. At the end Phases 1 – 3, the Contractor will conduct a Post-Implementation Review of the project to gather the information required to meet those responsibilities and to present the information in a Post-Implementation Report.

The major outcome of this phase is the Post-Implementation Report, which formalizes the feedback received from all involved parties, and identifies best practices and lessons learned. The output from the tasks performed as part of conducting a Post-Implementation Review serves as the building blocks for the report.

Of even more importance is the transfer of lessons learned and best practices from the Post-Implementation Report to an organizational repository of project management data. The final deliverable of this phase is the Archived Project Repository.

### Proposal Requirements

**Describe in your proposal how you will support all contractor requirements set forth in Section B.3 Project Closeout, above, and address their associated requirements listed in Attachment M.**

## **C. STAFFING REQUIREMENTS**

NYSDOH believes that a highly skilled staff with a breadth and depth of data warehouse knowledge, skills and experience is essential for the successful implementation, operation and maintenance of the MDW. However, strong technical skills alone are not enough to guarantee that the data warehouse will be a success. NYSDOH also believes that the data warehouse technical skills of Contractor staff must be supplemented with a background in Medicaid.

The Contractor's staff will work closely with NYSDOH in all phases of the data warehouse contract and under the direction of designated NYSDOH staff. The Contractor's staff will provide knowledge transfer to NYSDOH's technical staff and to the data warehouse users. NYSDOH requires that staff designated as key and core staff, as well as required development staff, work at the primary project site as defined in RFP Section VIII Facility Requirements. This will enable direct interaction with NYSDOH, data warehouse users, publishers and subscribers, the eMedNY data warehouse contractor during Phase 1, and any new eMedNY fiscal agent.

The staffing requirements in the RFP have been developed to ensure that all offerors understand NYSDOH's expectations for the data warehouse staff in terms of qualifications, roles and responsibilities, staffing contract constraints, and payment mechanisms.

### **C.1. CLASSIFICATIONS OF CONTRACTOR STAFF**

NYSDOH has defined three classifications of Contractor staff that will receive the greatest attention:

#### **C.1.1 Key Staff**

Key staff consists of the project's senior leadership for the data warehouse project. These resources are responsible for providing the leadership, creating standards and creating processes required for the successful implementation, operation, maintenance and long-term growth of the data warehouse. Key staff roles are strategic in nature providing the methodological and architectural (structural) foundation for the data warehouse.

#### **C.1.2 Core Staff**

Core staff consists of the technical leadership responsible for the oversight of construction, implementation, operation, maintenance and enhancement of the data warehouse. The core staff includes the senior technical builders who realize the data warehouse designs from the specifications into the physical database, ETL programs, queries, and reports for the data warehouse. The core staff roles provide technical leadership to the developers and maintain a focus on the tactical view of the project.

### **C.1.3 Development Staff**

Development staff consists of the technical staff responsible for the construction, implementation, operation, maintenance and enhancement of the data warehouse. Development staff are the technical builders who implement the data warehouse designs from the specifications into the physical database, ETL programs, queries, and reports for the data warehouse.

## **C.2. DATA WAREHOUSE STAFF ROLES, QUALIFICATIONS, AND RESPONSIBILITIES**

The typical data warehouse project encompasses a large variety of roles. Many of these roles involve overlapping skill sets. The Contractor may assign a staff resource to cover several roles if those roles are deemed to be part-time in nature. When the Contractor proposes to have one individual fill more than one role, the Contractor must submit to NYSDOH their current resume and the rationale for this assignment. However, none of the key or core staff positions may be shared across multiple staff. In addition, the Project Manager must be a full-time role filled by a single, dedicated person. NYSDOH retains the right to approve or disapprove the Contractor's proposed staffing. The Contractor must fill each data warehouse key and core role with individuals having at least the minimum skills and experience for the relevant role(s), as provided in the Attachment J Staffing Qualifications.

### **C.2.1 Data Warehouse Staffing Roles by Phase**

There are specific staffing considerations based on the phases of the project that impact the roles required and the pricing approach. There are two major staffing profiles to the data warehouse contract, based on project phase and time:

1. Phase 1 and
2. Phases 2-3 and the Operations Phase.

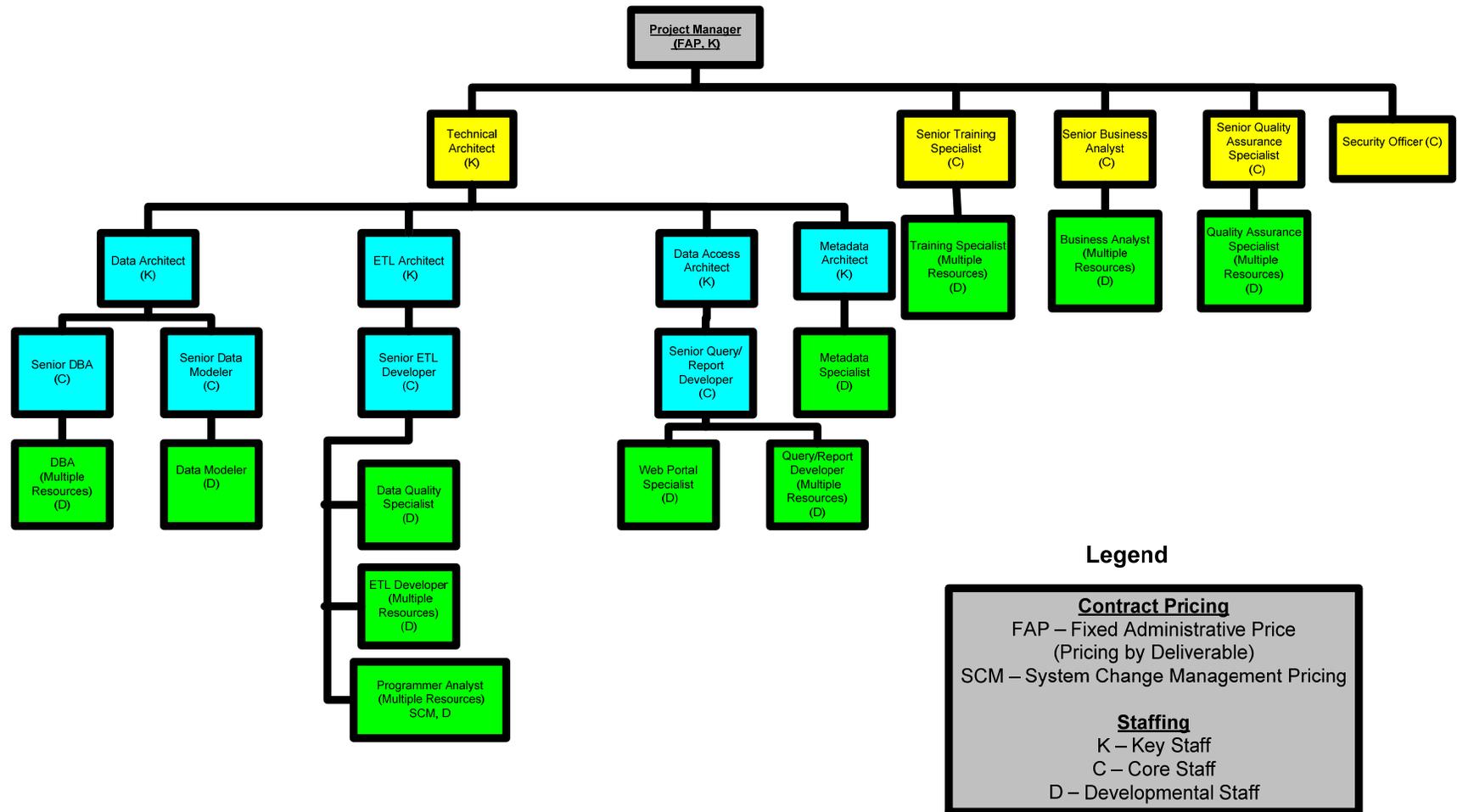
The following section describes the roles expected to support each phase of the contract and the pricing and payment approach to be used:

#### **Phase 1 (Including Project Initiation) Staffing**

The following sample organization chart indicates the suggested roles required for this phase. The Contractor may be flexible in the organizational hierarchy for these resources. Pricing and payment for Contractor staff during these phases is based on deliverables.



**Exhibit IV-1: Suggested Organization Chart for Phase 1**



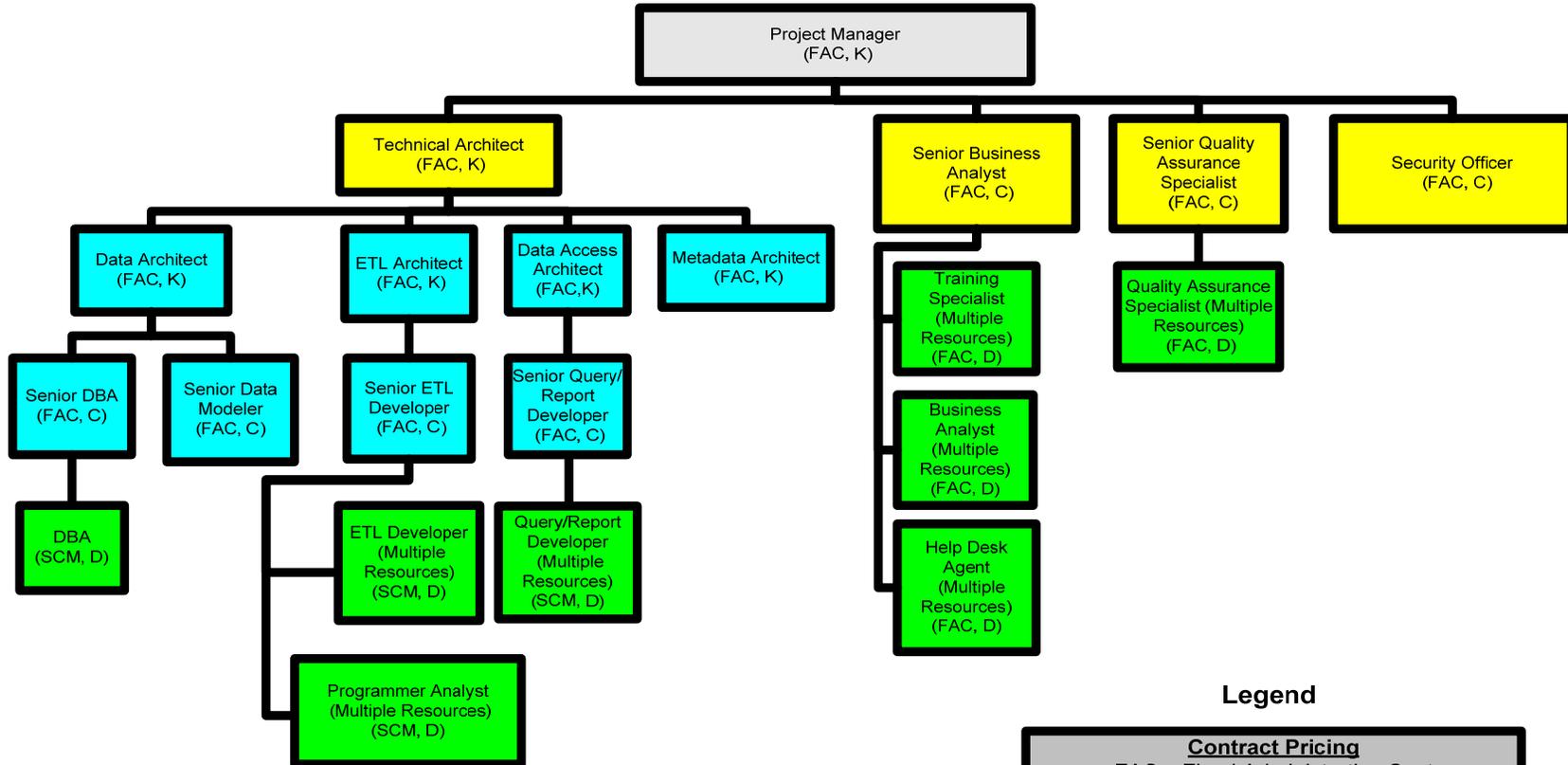


## Phases 2-3 and the Operations Phase Staffing

The following sample organization chart indicates the suggested roles required for the Operations Phase and Phases 2-3 that run concurrently with the Operations Phase. The Contractor may be flexible in the organizational hierarchy for these resources. Pricing and payment for Contractor staff during these phases is based on a combination of Fixed Administrative Price, System Change Management Pricing and Pricing by Deliverable.



**Exhibit IV-2: Suggested Organization Chart for Phases 2-3 and the Operations Phase**



**Legend**

**Contract Pricing**  
 FAC – Fixed Administrative Cost  
 SCM – System Change Management Pricing  
 (Exclusive of Phase 2-3 Development  
 which is Priced by Deliverable)

**Staffing**  
 K – Key Staff  
 C – Core Staff  
 D – Developmental Staff

## Pricing Approach

NYSDOH believes that system maintenance and system changes are part of the responsibilities of operating the data warehouse. As such NYSDOH expects that while some staff will perform primarily operational roles and functions, and are budgeted in the fixed administrative cost, they will also provide support for system change projects. NYSDOH is requiring the following pricing approach be used when addressing System Change Management tasks and activities:

1. NYSDOH will require the Contractor to support projects to change the system in each year of operations through the annual provision of 27,000 hours of work performed by System Change Management staff and also detailed in Attachment N Pricing Schedules. The annual System Change Management pricing and budgets must be developed in these schedules using this 27,000 annual allotment of hours;
2. The 27,000 annual allotment of hours is to be used only for time the System Change Management staff spend directly on NYSDOH approved projects. All other System Change Management staff time (e.g., vacation, sick leave, training, etc.) shall not be applied against this allotment of hours;
3. Tracking and reporting of hours spent on individual system change projects by staff paid through the fixed administrative fees (identified in the above organization chart as “FAP”, or fixed administrative price) is mandatory. These hours are to be considered in each system change project's estimated and expended hours. However, these hours have no impact on monthly System Change Management-priced payments based on Pricing Schedules D.1 through D.5 or meeting the 27,000 hours. Annual fixed administrative fee pricing and budgets must be developed in these schedules with this in mind;
4. Time spent on NYSDOH system change projects by staff categorized as System Change Management staff (DBA, ETL Developers, and Query/Report Developers) must also be included in each project's estimated and expended hours. Time spent by these staff resources working on a system change project will be paid upon NYSDOH-approved completion of that project based on the appropriate hourly rates from Attachment N Pricing Schedules;
5. Time spent by all Contractor staff (both Fixed Administrative Price and System Change Management) on Phase 2 and Phase 3 deliverables (which occurs concurrently with the Operations Phase and its Systems Change Management activities) should be priced and budgeted for on Pricing Schedules B.2 and B.3;
6. Some activities performed by Contractor staff will be considered system maintenance (e.g., operating system patching) and as such those activities are to be considered and budgeted as part of the annual fixed

administrative fee regardless of whether the staff performing the task is budgeted under the fixed administration fee or the system change management pricing; and

7. If during the operations of the MDW NYSDOH determines that the system change workload and associated project deadlines necessitate additional Contractor staff resources, NYSDOH may develop a contract amendment to acquire the additional staff. The daily rates (for Fixed Administrative Fee staff) and hourly rates (for System Change Management Price staff) provided in Attachment N Pricing Schedules that are appropriate to the staff roles being requested and the contract year will be used for pricing the additional staffing component of the contract amendment.

### **C.3. CONTRACTOR REQUIREMENTS**

The Contractor must:

1. Present detailed staffing plans for both a) Phase 1 and b) Phases 2-3 and the Operations Phase of the project which specify the staffing to be committed by the Contractor to this contract and details concerning the consolidation of multiple roles to be filled by a single staff member in its proposal;
2. Quantify in the staffing plan by phase, the daily allocation of each and every individual team member, whether key staff, core staff or development staff proposed to perform activities under this contract;
3. Identify, in the staffing plan, all subcontractors and their respective role(s);
4. Submit the resumes of persons performing the following key staff roles:
  - a. Project Manager;
  - b. Technical Architect;
  - c. Data Architect;
  - d. ETL Architect;
  - e. Data Access Architect; and
  - f. Metadata Architect;
5. Submit the resumes of persons performing the following core staff roles:
  - a. Senior Business Analyst;
  - b. Senior Quality Assurance Specialist;
  - c. Senior DBA;
  - d. Senior Data Modeler;
  - e. Senior ETL Developer;
  - f. Senior Query/Report Developer;
  - g. Senior Training Specialist; and
  - h. Security Officer;
6. Provide three (3) references for each of the key and core staff listed in its proposal. All references must be supplied by individuals external to the offeror or subcontractor organizations. The purpose is to provide



NYSDOH the ability to verify the claims made in the proposal by the Offeror; and

7. Document how its staff remains current with data warehouse trends in technology and methodology by:
  - a. Listing memberships in data warehouse organizations such as the Data Warehouse Institute (TDWI);
  - b. Listing Project Management Professional (PMP)/Project Management Institute (PMI) certifications for staff;
  - c. Listing membership in other data oriented organizations such as the Data Management Association (DAMA);
  - d. Listing data warehouse and business intelligence conferences attended in the last five (5) years; and
  - e. Any relevant classes or courses taken or attended and any relevant certifications achieved.

### **Proposal Requirements**

**Describe in your proposal how you will support all contractor requirements set forth in Section C Staffing, above, and address all associated requirements listed in Attachment M.**

## **V. BUSINESS REQUIREMENTS**

### **A. OVERVIEW**

The New York State Department of Health (NYSDOH) is the single State agency responsible for the administration of the New York State Medicaid Program under Title XIX of the Social Security Act. The primary purpose of the Medicaid Program is to make covered health and medical services available to eligible individuals. As the single State agency, NYSDOH promulgates all necessary regulations and guidelines for Program administration, develops professional standards for the Program, develops rates and fees for medical services, evaluates programs and conducts or contracts with outside organizations to perform utilization review and performance measurement.

NYSDOH is required to maintain a Medicaid State Plan that is consistent with provisions of Federal law and regulations. Administrative functions include development of Program policy, determination of recipient eligibility, utilization review, detection of possible fraud and abuse, and supervision of the fiscal agent and all its functions.

In order to carry out aspects of the professional administration of the Program, NYSDOH Office of Health Insurance Programs (OHIP) and the Office of Long Term Care (OLTC) works in conjunction with other State agencies such as the Office of Mental Health (OMH), Office of Mental Retardation and Developmental Disabilities (OMRDD), Office of Alcohol and Substance Abuse Services (OASAS) and the Office of Children and Family Services (OCFS) to ensure that the needs of the special populations that these agencies serve are addressed within the parameters of the Medicaid Program. Additionally, NYSDOH works with New York's local departments of social services to administer and fund the Medicaid Program. The Director of the New York State Division of the Budget promulgates all fees and rates for the Medicaid Program (with the exception of those which by statute are set by OMH, OMRDD, OASAS and OCFS). This distribution of work across these various agencies has created a diverse set of users with specific and differing information needs.

The Medicaid Data Warehouse (MDW) will be an essential component of restructuring and improving the efficiency of health care delivery by the New York State Medicaid Program. The Contractor will work with State and State consultant staff to accelerate ongoing efforts to streamline, redesign and improve business processes to eliminate duplication of effort and other unnecessary program complexity and inefficiency.

The Contractor will establish a data infrastructure that is easily configurable, rules-based with near or real-time access to data using best in class analysis tools to produce statistical reports and support Medicaid and health care research. This infrastructure will allow easy mapping to program areas such as enrollment, eligibility, paid claims, cash, appropriations and other standardized accounting methodologies.

The purpose of this section is to describe both the general business requirements of the MDW and those business requirements that are specific to a subject area, a set of stakeholders, or a specific stakeholder.

## **B. BUSINESS GOALS AND OBJECTIVES**

It is important that the MDW provide the capability to meet the current business intelligence needs of the New York State Medicaid Program and also be sufficiently flexible to meet future needs. The sections that follow provide detailed requirements for each major functional area and stakeholder that must be supported by the MDW.

NYSDOH seeks to achieve the following goals and objectives by procuring a contractor to design, develop, implement and operate the MDW:

1. Achieve quicker, broader and deeper intelligence on utilization, quality and cost of services;
2. Support efforts to maximize the effective utilization of Federal, State and local funds;
3. Produce a comprehensive statistical profile of healthcare delivery and utilization patterns established by providers and members in various programs and agency-defined categories of services, including historical enrollment by fund type and aid category – both category of service as well as by county/NYC/ROS and statewide comparisons;
4. Enhance current capabilities to identify fraud, abuse and overpayments through improved detection methods resulting in more timely, improved identification and recovery of Medicaid funds;
5. Investigate and reveal abuse of the New York State Medicaid Program and promote corrective action;
6. Provide information that identifies and facilitates improvements in the quality of service provided under the Medicaid program;
7. Have the analytic capacity to identify program, provider and recipient trends for the effectiveness and quality of care provided over time, through analysis of claim and encounter data;
8. Have the analytic capacity to assess the outcomes of third-party vendors by specific treatment and services categories to create and update best practices models;
9. Have the analytic capacity to support rate setting and the modeling of various rate setting methodologies through the analysis of member eligibility, encounter and claim data, third-party cost information, and historical rate and cost trend analysis;
10. Enhanced ability to receive and incorporate data from new sources, including new Data Marts;
11. Enhanced ability to quickly modify the data warehouse, data marts and queries; and
12. Enhanced ease of use for all of the data warehouse users, regardless of their skill level.

## **C. GLOBAL BUSINESS REQUIREMENTS**

The Contractor must:

1. Provide access to up to twenty-five (25) years of historical claims data over the term of the contract;
2. Support Cognos as the business intelligence tool for county users to access the MDW along with the appropriate filters based on the fiscally responsible county for the member data;
3. Convert existing BI Query and Cognos reports as determined by NYSDOH. The Offerors' Library contains a list of these reports and the schedule of implementation by phase;

4. Incorporate and report on Medicaid Budget and Eligibility Logic (MABEL) data to analyze the program population by resource eligibility standards to generate “typical” family profiles for specific eligibility types; and
5. Attend meetings with NYSDOH, the MMIS Contractor and/or other NYSDOH-authorized parties as deemed necessary by NYSDOH.

## **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the global business requirements as described above and listed in Attachment M.**

## **D. BUSINESS SUBJECT AREAS**

### ***D.1 SURVEILLANCE AND UTILIZATION REVIEW***

The Surveillance and Utilization Review Subsystem (SURS) provides NYSDOH and its contractors with utilization data for analyzing medical care and service delivery for Medicaid services. NYSDOH and its contractors use the data to support several utilization management functions including:

1. Surveillance of the delivery and utilization of covered services by Medicaid members. Surveillance includes use of claims and encounter data for overall program management and use of statistics to establish norms of care in order to detect inappropriate or over utilization of services; and
2. Review of the delivery and utilization of medical care on an individual basis to identify possible provision or receipt of aberrant, fraudulent or abusive medical services or practice.

NYSDOH requires that the MDW Contractor continue to provide UPI Java Surveillance and Utilization Review Subsystem (J-SURS) as the internal analytical application to accomplish the SURS functions.

#### **D.1.1 Subject Area Specific Business Requirements**

The Contractor must:

1. Maintain a current contract with UPI and all existing J-SURS functionality and reporting;
2. Make enhancements to J-SURS to improve the production of the hardcopy Interfiled Package Reports;
3. Operate, maintain and evolve the SURS function in accordance with Part 11 of the State Medicaid Manual and all State and Federal requirements, regulations and statutes;
4. Modify SURS functionality and reports as directed by NYSDOH to reflect changing information needs and changes in the NYS Medicaid program;
5. Produce and distribute hardcopy Interfiled Package Reports as-requested by NYSDOH;
6. Develop and maintain a J-SURS user training program for State staff; and
7. Provide technical assistance to J-SURS users for:
  - a. Researching problems; and
  - b. Reviewing reports and establishing report parameters.

## **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the SURS business function and meet the associated requirements listed above and in Attachment M.**

### ***D.2 PHARMACY UTILIZATION REVIEW***

The Pharmacy Utilization Review area consists of Prospective Drug Utilization Review (Pro-DUR) and Retrospective Drug Utilization Review (R-DUR).

The Pro-DUR function provides an alert to the pharmacist regarding a patient's drug therapy at the point-of-sale (POS) before a prescription is filled. The report compares the new claim to the patient's recent claim history and alerts the pharmacist to potential therapeutic duplication, drug-disease contraindications, drug interactions, incorrect drug dosage or clinical abuse/misuse at POS. The data warehouse does not directly support this pharmacist alert interaction, but may perform the underlying analytical activity that will be used to flag patients and providers in the MMIS and other operational systems.

The R-DUR internal analytical application identifies prescribing and utilization patterns that appear to fall outside best practice guidelines. Physicians are alerted, by letter, of potential drug therapy problems among their patients, such as therapeutic duplication, drug-disease contraindications, incorrect drug dosage or duration, drug-induced illness or clinical abuse/misuse among their patients.

#### **D.2.1 Subject Area Specific Business Requirements**

The Contractor must:

1. Maintain all existing R-DUR functionality and reporting, and implement system changes as required by NYSDOH in conjunction with the DUR Board;
2. Monitor R-DUR activities to ensure they are in accordance with Chapter 11 of the State Medicaid manual and State and Federal laws, requirements and statutes;
3. Update R-DUR files using the most current reference files on a schedule as directed by NYSDOH or as needed;
4. Respond to NYSDOH requests for analysis, review, corrective action and follow-up activities related to R-DUR;
5. Provide criteria exception data as requested by NYSDOH relevant to R-DUR case review;
6. Prepare R-DUR cases for review and distribution as prescribed by NYSDOH;
7. Receive and process R-DUR case review information;
8. Create and mail R-DUR provider and enrollee intervention letters as prescribed by NYSDOH;
9. Provide analyses and reports related to R-DUR interventions and provide recommendations to NYSDOH as warranted;
10. Disseminate data (e.g., fraud/abuse, disease management, etc.) produced from the R-DUR review process as prescribed by NYSDOH;
11. Implement changes to R-DUR criteria as required from NYSDOH;
12. Provide all R-DUR reporting as prescribed by NYSDOH;

13. Attend and/or present at R-DUR meetings as directed by NYSDOH; and
14. Provide communication to providers and members regarding R-DUR activity.

### **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the R-DUR business function and meet the associated requirements listed above and in Attachment M.**

### ***D.3 MANAGEMENT AND ADMINISTRATIVE REPORTING (MARS) AND FINANCE***

The Management and Administrative Reporting Subsystem (MARS) function provides NYSDOH, local districts, and the Division of Budget management staffs with reporting capability in the key areas of Medicaid program activity. MARS reports are designed to assist management and administrative personnel with the difficult task of effectively planning, directing and controlling the Medicaid program by providing information necessary to support the decision-making process. The MARS reports also provide Medicaid reporting capabilities to the Legislative financial committees including the Assembly Ways and Means Committee and the Senate Finance Committee.

Historically the MARS function has been supported through a subsystem maintained in the MMIS. MARS functionality will continue to be supported through the end of the current eMedNY MMIS contract. As part of this procurement, NYSDOH intends to migrate all MARS calculations and functionality to the MDW. The MDW Contractor will be required to utilize data from the MMIS including paid and denied claims history files, provider files, member files, procedure files, drug files, and diagnosis files that will then be correlated to produce MARS and other finance-related reports. The accuracy and content of the MARS calculations and reporting are heavily dependent upon the data made available from these data sources.

Reported information from each of the functional areas may be current or historical and range from status-level reports consisting of concise summary data to detailed-level reports reflecting more granular information.

NYSDOH will define the specific reports sent to the Center for Medicare and Medicaid Services (CMS) in the Federally-required format, define State, NYSDOH and Federal programs, categories of service, eligibility categories, provider types and specialty codes, geographic codes, funding source codes, and other codes necessary to produce the MARS reports and notify the Contractor regarding changes in Federal and NYSDOH requirements and statutory or other changes as well that affect MARS.

#### **D.3.1 Subject Area Specific Business Requirements**

The Contractor must:

1. Support NYSDOH's ability to respond to all requests from outside sources for data on the Medicaid program that require the use of MARS reports;
2. Provide initial and ongoing training related to the use of MARS;

3. Review balancing reports to ensure that these reports balance in the aggregate and by each Federal, State and local shares to ensure internal and external report integrity;
4. Produce and distribute MARS reports and data sets in forms specified by NYSDOH (posting on MDW Web portal, DVD, CD, email, hardcopy, etc.) to users which include, but not limited to, Local Departments of Social Services (LDSS), Division of Budget (DOB), Office of Medicaid Inspector General (OMIG), Office of Long Term Care (OLTC), Office of Mental Health (OMH), Office of Mental Retardation and Developmental Disabilities (OMRDD), Office of Children and Family Services (OCFS), NYC Medical Assistance Program (MAP), Senate Finance Office, Office of the State Comptroller (OSC), Office of Alcohol and Substance Abuse Services (OASAS), Assembly Ways and Means, and the New York City (NYC) Budget Office (A sample of MARS reports, and a listing and description of all MARS can be found in the Offeror's Library);
5. Work with NYSDOH to automate transmissions of mandated MARS and other financial report information, including CMS-required reports such as the CMS-64, to appropriate Federal entities in an efficient and secure fashion; and
6. Work with the DOB staff to integrate paid claims with fund, account structures and appropriations.

## **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the MARS business functions and meet the associated requirements listed above and in Attachment M.**

### ***D.4 EARLY AND PERIODIC SCREENING AND DIAGNOSTIC TREATMENT***

The Early and Periodic Screening and Diagnostic Treatment (EPSDT) program is a preventive and comprehensive service for eligible member children that provides for regular health check-ups that include a comprehensive health and developmental history; a comprehensive physical exam; nutritional and developmental assessment; vision, hearing and dental screenings; lab tests; appropriate immunizations; health education/anticipatory guidance; diagnosis and treatment; and referral and follow-up, as needed.

Under the Medicaid Information Technology Architecture (MITA), EPSDT activities are tied to the Care Management business area and accordingly rely heavily on the data warehouse to support the "Identify Candidate Case" business processes while the "Manage Case" business processes are managed by the MMIS contractor.

#### **D.4.1 Subject Area Specific Business Requirements**

The Contractor must:

1. Maintain all EPSDT functionality and reports according to Federal and State requirements;
2. Modify ESPDT functionality and reports as directed by NYSDOH to reflect changing information needs and changes in the NYS Medicaid program; and
3. Generate all mandated EPSDT reports on a NYSDOH-defined schedule.

## **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the EPSDT business function and meet the associated requirements listed above and in Attachment M.**

### ***D.5 MANAGED CARE***

The Office of Managed Care is responsible for the design, implementation and oversight of NYSDOH's Medicaid Managed Care Program. The division serves as the lead on all policy decisions related to encounter data. The division has been organized into the following bureaus to execute its responsibilities:

1. Intergovernmental and Consumer Affairs – Responsible for oversight of all contracting activities under the Managed Care Program:
  - a. Liaison with Local Departments of Social Services (LDSS);
  - b. Monitor county grant programs;
  - c. Develop and implement marketing guidelines for Managed Care Organizations (MCO's);
  - d. Develop and oversee Medicaid managed care enrollment process; and
  - e. Respond to issues involving consumer rights and responsibilities;
2. Bureau of Managed Care Financing – Responsible for all activities related to payment for managed care activities:
  - a. Managed care rates and negotiating final rates with managed care plans;
  - b. Manage the Federal reimbursement process; and
  - c. Evaluate and monitor fiscal solvency of all managed care plans;
3. Bureau of Managed Care Program Planning – Responsible for the planning and implementation of Medicaid managed care services including oversight for the development of Special Needs Plans (SNPs) for:
  - a. Severely and Persistently Mentally Ill;
  - b. Severely and Emotionally Disturbed (SED) Children; and
  - c. AIDS population;
4. Bureau of Certification and Surveillance – Primarily responsible for oversight of MCO's:
  - a. Provides approval and certification of MCOs including integrated delivery systems and workers' compensation plans;
  - b. Provides ongoing surveillance of MCO operations; and
  - c. Investigates complaints against managed care plans.

#### **D.5.1 Subject Area Specific Business Requirements**

The Contractor must:

1. Maintain all Managed Care reporting functionality according to Federal and State requirements;
2. Modify Managed Care functionality and reports as directed by NYSDOH to reflect changing information needs, changes in the NYS Medicaid program and changes in the status of contracts between NYSDOH and the MCO's; and
3. Produce and distribute all mandated Managed Care reports and data sets in forms specified by NYSDOH (posting on MDW Web portal, DVD, CD, email, hardcopy, etc.) and on a NYSDOH-defined schedule (The Managed Care Data Set file layout and row count can be found in the Offeror's Library).

## **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the Managed Care business function and meet the associated requirements listed above and in Attachment M.**

### ***D.6 DIVISION OF QUALITY AND EVALUATION (DQE)***

The Division of Quality and Evaluation (DQE) is responsible for providing research and analytic leadership to the Office of Health Insurance Programs (OHIP). The DQE is responsible for developing and implementing a quality oversight program to ensure the provision of appropriate health services to commercial, Child Health Plus, Medicaid managed care and fee-for-service beneficiaries. The DQE is also charged with developing data systems necessary to evaluate quality, access, utilization and provider networks. The Division has been organized into the following bureaus to execute its responsibilities:

The **Bureau of Quality Measurement and Improvement** is responsible for all activities related to the annual collection of Quality Assurance Reporting Requirements (QARR) data from the managed care plans licensed to operate in New York State. Major responsibilities include the following:

1. Adopt or develop standardized quality, access and utilization measures to be included in the annual reporting requirements;
2. Analyze the finance, quality and utilization data submitted as part of QARR submissions and develop formats for presentation of the data;
3. Conduct managed care and fee-for-service comparisons for both the Medicaid and commercially enrolled populations; and
4. Serve as analytic partners and resources for the managed long term care plans.

The **Bureau of Outcomes Research** is responsible for collecting and analyzing Medicaid encounter data and provider network data submitted by all New York State, Article 44 licensed, and health plans. Major responsibilities include the following:

1. Analyze every encounter a member has with the health care system, measure performance, and monitor member access;

2. Conduct studies involving appropriate medication use and monitor services provided to vulnerable populations, such as SSI enrollees, persons with asthma, diabetics, and other chronic illnesses;
3. Serve as the liaison with vendors that group the MEDS data for the purpose of risk adjusting payment; and
4. Ensure continuous improvements to encounter data reporting compliance, data quality and analytic system performance, while assimilating national standards.

The **Bureau of Medicaid Statistics and Policy Analysis** is responsible for conducting analysis of various programs and providers in Medicaid fee-for-service, evaluating demonstration programs and producing numerous cost and utilization reports for various users including, executive staff in the DOH, the Division of Budget and the Legislature.

1. Interpret and analyze how impending federal legislation will impact the Medicaid program and works closely with legislature staff when state legislation is being drafted;
2. Conduct analysis of programs designed to improve care for special populations; such as utilization of Medicaid waiver services and case management demonstration projects for the mentally ill;
3. Conduct analysis of various fee-for-service programs and providers, including appropriate evaluation of local district demonstration programs and producing numerous cost and utilization reports for various users including, executive and financial management group staff in NYSDOH, the Division of Budget and the Legislature; and
4. Develop, support and maintain a number of important databases key to the overall administration and evaluation of the state Medicaid program.

### **Stakeholder Specific Business Requirement**

The Contractor must develop the reporting tool to provide data that is necessary for DQE to evaluate quality, access to health care, utilization and provider networks.

### **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the DQE business functions and meet the associated requirements listed above and in Attachment M.**

### ***D.7 OFFICE OF LONG TERM CARE (OLTC)***

The Office of Long Term Care (OLTC) is responsible for long-term care in the State including licensing, certification and quality assurance for:

1. Assisted Living Programs;
2. Assisted Living Residences;
3. Adult Care Facilities;
4. Community-Based Care which includes certified home health agencies, hospices, long-term home healthcare programs, licensed home care services agencies, limited

- licensed home care services agencies, personal care program, consumer directed personal assistance programs, and adult day healthcare programs;
5. Continuing Care Retirement Communities and Fee-For-Service Continuing Care Retirement Communities; and
  6. Nursing Homes in New York State.

OLTC also provides oversight and support for:

1. The New York State Partnership Plan; and
2. The Most Integrated Setting Coordinating Council on behalf of NYSDOH.

OLTC administers the following home and community-based services waiver programs and initiatives:

1. Long Term Home Health Care Program (LTHHCP) Waiver;
2. Traumatic Brain Injury (TBI) Waiver;
3. Nursing Home Transition and Diversion (NHTD) Waiver;
4. Care At Home 1 and 2 Waivers;
5. Targeted Case Management For Medically Fragile Children; and
6. Federal and State grants, such as the Money Follows the Person Demonstration.

OLTC also provides oversight and support for

1. Care At Home III, IV, and VI (OMRDD) Waivers; and
2. OCFS Bridges to Health (B2H) Waivers.

In addition to the data analysis and reporting capabilities needed to support the management of traditional State Plan long term care services, these waivers require enhanced capabilities to support compliance with the CMS quality assurance framework for waivers and cost-effectiveness studies.

In addition, OLTC is responsible for supporting the patient-first system initiative for improving patient outcomes with the goal of expanding long term care in the least-restrictive, most-integrated setting.

### **D.7.1 Subject Area Specific Business Requirements**

The Contractor must:

1. Maintain all Long Term Care reporting functionality according to Federal and State requirements;
2. Modify Long Term Care functionality and reports as directed by NYSDOH to reflect changing information needs and changes in the NYS Medicaid program and long term care system;
3. Produce and distribute all mandated Long Term Care reports and data sets in forms specified by NYSDOH (posting on MDW Web portal, DVD, CD, email, hardcopy, etc.) and on a NYSDOH-defined schedule; and
4. Supply user defined data to the OHIP Data Mart OLTC Subject Area.

## Proposal Requirement

**By way of specific examples, describe in your proposal how you will support the Long Term Care business function and meet the associated requirements listed above and in Attachment M.**

### ***D.8 HEALTH INFORMATION EXCHANGE AND ANALYTICS***

In 2004, the Federal government called for the adoption of interoperable electronic health records (EHR) within the next ten (10) years. The belief is that, through the adoption of EHRs, medical errors will be limited, patient care improved, and the costs of healthcare reduced.

In addition, CMS has been a strong proponent for the development of electronic healthcare information systems and the exchange of information. MITA principals are intended to promote integrated business and information technology transformation across the Medicaid enterprise. MITA's common business and technology vision emphasizes:

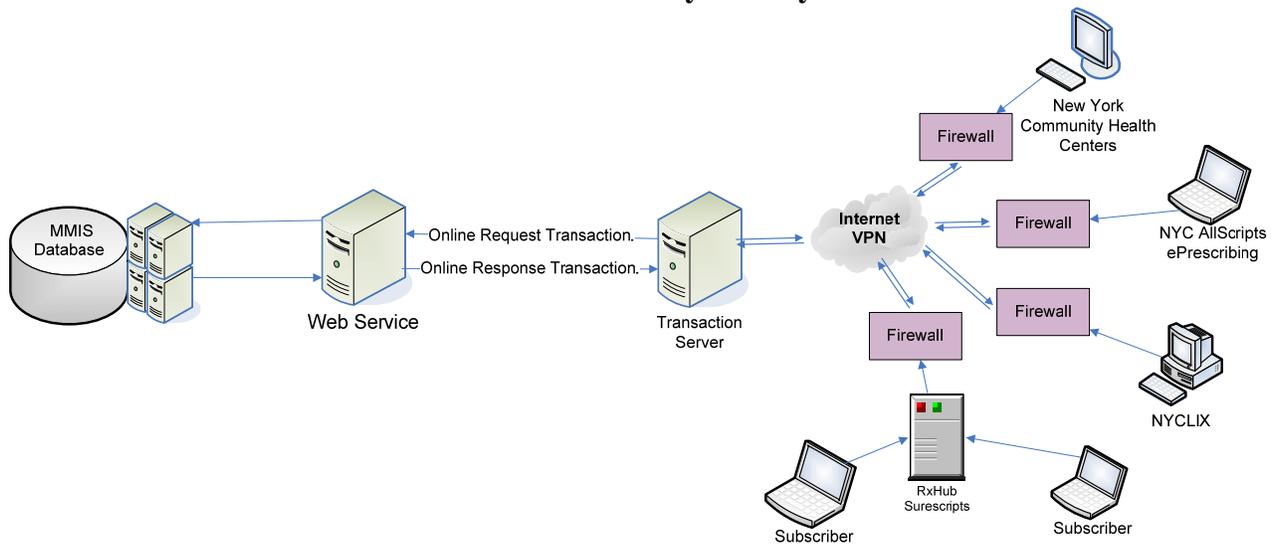
1. Medicaid client-centric view free from organizational boundaries and constraints;
2. Common standards with, but not limited to, Medicare and Medicaid;
3. Interoperability between state organizations providing services to Medicaid clients within and across states and other agencies involved in healthcare delivery;
4. Web-based access and integration;
5. Software reusability;
6. Use of commercial-off-the-shelf (COTS) software; and
7. Integration of public health and clinical data.

MITA has adopted a service-oriented architecture (SOA) solution that best meets the needs of the heterogeneous Federal, State, public and private healthcare organizations.

New York State has responded to these initiatives through the creation of the Health Care Efficiency and Affordability Law for New Yorkers (HEAL-NY), a grant program for the promotion and adoption of interoperable healthcare information technologies to improve the healthcare of New York State citizens while reducing the associated costs. First round grant applications were submitted by more than 100 New York State health information exchange programs. The majority of the proposed projects rely on Medicaid data at the point of care to ensure success.

New York City then commissioned Computer Sciences Corporation (CSC) to design, develop and implement the Medication History Pilot Project to facilitate the exchange of medication and formulary data between the Medicaid program and regional clinics with high concentrations of Medicaid recipients. The following figure provides a high-level overview of the Medication History Pilot System.

### Exhibit V-1: Medication History Pilot System Overview



The Medication History Pilot System scope encompasses two main functions:

1. Formulary checking that:
  - a. Produces, in batch form, a Medicaid formulary file in a format meeting the National Council for Prescription Drug Programs (NCPDP) standard formulary and benefits file transaction implementation guide;
  - b. Interoperates with the host systems and exchanges such as RxHub;
  - c. Adds a new online, real-time formulary check transaction type in accordance with the NCPDP 8.1 (SRIPT) standard transaction implementation guide;
  - d. Inbound transaction requests a formulary check identifying the drug by its appropriate National Drug Code (NDC) identifiers; and
  - e. Outbound transaction responds with formulary information for the requested drug as it exists in the eMedNY database;
2. Viewing medication history that:
  - a. Provides online, real-time NCPDP transaction to request 90-day history of dispensed drugs for a Medicaid member; and
  - b. Scope does not include pulling data from archives, other systems, or from claims forms not processed by the eMedNY system.

#### D.8.1 Subject Area Specific Business Requirements

The Contractor must:

1. Design, develop and implement solutions for data sharing and interoperability between the data warehouse, Regional Health Information Organizations (RHIOs) and other third parties.
2. Ensure that all data warehouse data acquisition and data delivery processes, database design and reporting processes used to exchange Medicaid-related data with RHIOs and other third parties are synchronized daily with other State data interoperability, data sharing and data integration standards, processes and projects;
3. Adhere to the standards and processes required to integrate Electronic Health Records data in the MDW as provided by NYSDOH;

4. Instantiate requirements for sharing data warehouse data with the RHIOs and other third parties based on the requirements defined in the data sharing agreements negotiated by NYSDOH;
5. Implement processes to ensure that data received from or released to RHIOs and other third-party organizations are in compliance with all HIPAA, Federal, and State privacy and security laws and regulations;
6. Report to NYSDOH any issues impacting the integration and interoperability between the data warehouse, the RHIOs and third parties as related to Medicaid data; and
7. Publish to the metadata repository, all documentation related to the data warehouse exchange of Medicaid-related data with RHIOs and third-party organizations including:
  - a. All data sharing standards, processes and procedures used by the data warehouse;
  - b. Descriptions and domain of values for all data received from RHIOs and other third-party organizations, along with any relationships to other existing data within the MDW; and
  - c. A list of all data sharing partners and the data sharing agreements with these partners.

## **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the Medicaid Health Information Exchange and Analytics business function and meet the associated requirements listed above and in Attachment M.**

### ***D.9 ENROLLMENT CENTER RENEWAL PROCESS (ECRP) PROJECT***

The Federal government has called for the adoption of the Medicaid Information Technology Architecture (MITA), an initiative intended to foster integrated business and IT transformation across the Medicaid enterprise to improve the administration of the Medicaid program. It is a common business and technology framework for state Medicaid organizations.

The NYSDOH has undertaken a project to establish an Enrollment Center for the various health insurance programs. In support of this effort the NYSDOH will be in need of a tool to assist center staff in renewals and recertification. The NYSDOH sees this as an opportunity to begin the implementation of the MITA Business Process Model. The project will allow for the partial implementation of the Member Management business area which contains eligibility determination and enrollment. The NYSDOH is requesting that the Contractor assist in the design development and implementation of this project.

#### **D.9.1 Electronic Eligibility Decision Support System (EEDSS)**

The NYSDOH has decided to rely upon the existing Electronic Eligibility Decision Support System (EEDSS) software to support the ECRP, thus leveraging the work and knowledge that it has obtained. The Contractor will be required to provide the hardware and software to implement this into the production environment.

EEDSS is an interactive interview application and decision support system that enhances a Medicaid examiner's ability to conduct a Medicaid eligibility interview and determination. The EEDSS data base consists of over 9,000 questions that may be relevant in the interview process.

The purpose of the EEDSS application is to provide a computer assisted interview and decision tool that enables the eligibility worker to conduct interviews with an intelligent question set. EEDSS follows a logical path for the current case and presents the examiner only relevant questions which must be answered to determine eligibility for the current case; this streamlines the interview process.

Some of the benefits the examiners have received from EEDSS include:

- EEDSS provides a consistent policy-correct interview;
- Collected data populates the Welfare Management System (WMS) and other systems to reduce time needed for data entry;
- Appropriate codes are applied to make Medicaid eligibility determinations efficient and accurate; and
- Help text assists both new and experienced users with unfamiliar policies and procedures.

### **D.9.2 EEDSS Architecture**

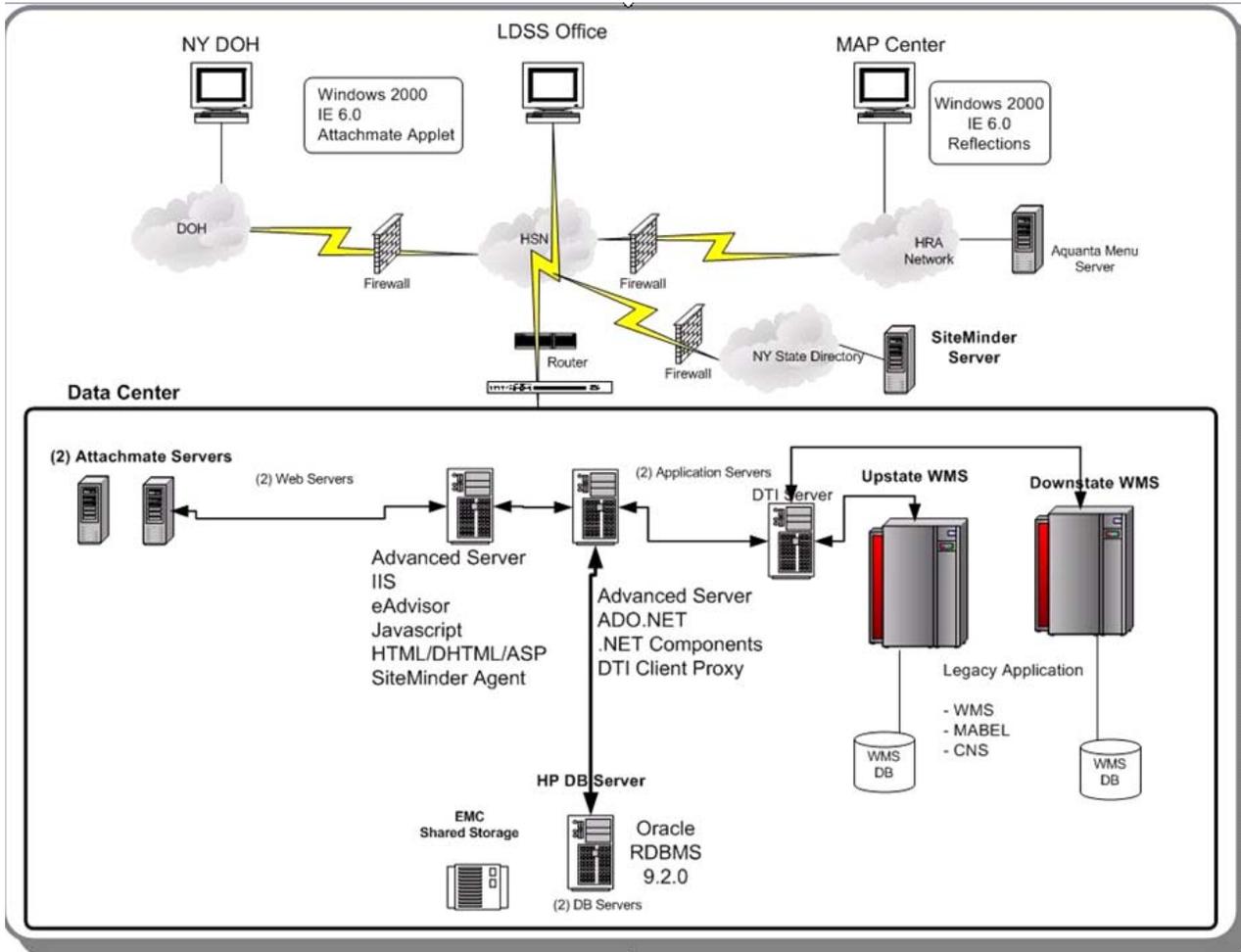
Exhibit V-2 below depicts the current ADO.NET architecture supporting EEDSS in the production environment. The EEDSS application consists of three tier architecture with software components distributed throughout the Presentation, Application and Data tiers.

The Presentation Tier is built upon an Internet Information Server (IIS) server using HTML for the User Interface (UI) framework.

The Application Tier consists of web, data and interface components using ADO.NET and C#. The Unisys Distributed Transaction Integrator (DTI) is used to access the legacy systems.

The Data Tier consists of components that interact with the application components to update and retrieve response data from the Oracle data base.

**Exhibit V-2: Current EEDSS Architecture**



**D.9.3 Subject Area Specific Business Requirement**

The Contractor must assist in the design, development and implementation of the solution for the Enrollment Center Renewal Process.

## **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the Enrollment Center Renewal Process business function and meet the associated requirements listed above and in Attachment M.**

### ***D.10 HEALTH CARE ANALYTICS***

NYSDOH requires that the MDW include a Health Care Analytics solution to support analysis of the effectiveness of NYSDOH care management programs.

#### **D.10.1 Subject Area Specific Business Requirements**

The Contractor must:

1. Implement a Health Care Analytics solution that includes all the technologies and tools for reporting, modeling and analysis across all the care management programs associated with NYS Medicaid;
2. Implement a Health Care Analytics solution that is user-friendly, with a point-and-click interface that will supply analysts with standard reports that can be quickly accessed; and
3. Implement a Health Care Analytics solution that has the ability to produce reports of varying levels of detail from high-level ones designed to measure general trends within and across the Medicaid population, to detailed ones that support drill-down capabilities, multiple cross-tabulations (e.g., by demographics, geography and managed care plan), sub setting, modeling, and forecasting.

## **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the Health Care Analytics business function and meet the associated requirements listed above and in Attachment M.**

### ***D.11 UTILIZATION THRESHOLD PROGRAM***

The Utilization Threshold (UT) program places limits on the number of services a Medicaid client may receive in a benefit year. A benefit year is a 12-month period, which begins the month in which the patient becomes Medicaid eligible. Providers must obtain a UT service authorization through the Medicaid Eligibility Verification System (MEVS). A UT service authorization is required prior to payment of claims for services included in the UT program.

NYSDOH is working with the New York State Medicaid Analytics Institute to modernize the Utilization Threshold (UT) program in an effort to increase its efficiency. This updated UT program will calculate clinical risk groups (CRGs) by individuals to arrive at twelve (12) levels of disease burden and individualized utilization threshold limits specific to various types of services (e.g., pharmacy, physicians, etc.).

The NYSDOH anticipates handing over the analytical component of the UT program to the MDW Contractor.

### **D.11.1 Subject Area Specific Business Requirements**

The Contractor must:

1. Adopt the 3-M risk-adjusted utilization thresholds for all fee-for-service members;
2. Implement an application that processes claims data on a biweekly basis for the purpose of continually updating individualized thresholds;
3. Develop a process for feeding-back the individualized thresholds to the production MMIS; and
4. Provide groupings related to specific criteria, such as inpatient admission and episodes.

### **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the Utilization Threshold business function and meet the associated requirements listed above and in Attachment M.**

### ***D.12 STATE CHILDREN'S HEALTH INSURANCE PROGRAM***

In 1990, NYSDOH implemented the State Children's Health Insurance Program (SCHIP). Child Health Plus contracts with private insurers to supply low-cost or free health insurance coverage to low-income children. Title XXI provides healthcare coverage to low-income children who are currently uninsured.

As part of the process of applying for CHPlus, children are screened to determine whether they appear to be Medicaid eligible. Any applying children who appear to be Medicaid eligible will be required to apply for Medicaid. This process also applies to children who are currently enrolled in CHPlus and appear potentially Medicaid eligible at the time of annual CHPlus recertification.

State law requires significant outreach efforts for both CHPlus and Medicaid. These efforts include public education campaigns and the designation of community-based and health plan enrollers who assist children applying for and enrolling in CHPlus or Medicaid; whichever is appropriate. The enroller will submit applications to LDSS's or the requested health plan if they appear eligible for CHPlus. At local district option, an interview with an approved facilitated enroller will serve as the face-to-face interview for Medicaid.

The SFY 2008-09 State Budget increased eligibility for Child Health Plus to 400% of the federal poverty level (FPL) using state dollars. Effective September 1, 2008, this expansion will make coverage available to an additional 70,000 uninsured children.

## **Stakeholder Specific Business Requirement**

The Contractor must host JAD sessions with appropriate business users to design and maintain all SCHIP reports to be routinely produced (including the addition of new reports and modifications made to existing reports), and their corresponding production schedule and distribution list.

## **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the SCHIP business functions and meet the associated requirements listed above and in Attachment M.**

### ***D.13 OFFICE OF HEALTH INSURANCE PROGRAMS (OHIP) – PHARMACY POLICY AND OPERATIONS***

The Bureau of Pharmacy Policy and Operations (BPPO) is responsible for the design, development, implementation, and management of policies, procedures, and programs related to Medicaid pharmacy services. BPPO is responsible for pharmacy management programs that provide significant savings and revenue to the Medicaid program through the use of pharmacy management tools, cost containment and rebates. BPPO is also responsible for activities and management related to the Medicaid Pharmacy and Therapeutics Committee (P&TC), the Drug Utilization Review (DUR) Board, and the Pharmacy Advisory Group (PAC). The BPPO manages the Medicaid List of Reimbursable Drugs that contains thousands of drug codes and edits and develops, implements, monitors, and evaluates pharmacy policies that support appropriate drug access and utilization. The BPPO also manages the Medicaid Preferred Drug Program, Clinical Drug Review Program, and Mandatory Generic Drug Program. These programs assure the use of medically necessary, cost effective medication. BPPO is also responsible for developing and implementing pharmacy programs that support appropriate prescribing and increase patient compliance and adherence using nationally recognized standards and medication therapy management.

Currently the OHIP Data Mart produces the quarterly invoices sent to drug manufacturers for regular drug rebate collections and its paid claims history is updated with the rebate amounts invoiced by claim. The OHIP Data Mart also supplies summarized drug utilization data to First Health Corp. for their invoicing of supplemental drug rebates on behalf of NYSDOH. Summarized information on the amount invoiced by manufacturer for supplemental rebates is sent back to NYSDOH by First Health Corp. Disbursements to the Federal government and counties of portions of both the regular and supplemental rebates collected is done using a set of OHIP Data Mart reports. The reconciliation system for regular drug rebates is currently maintained in MS Access on a local server within NYSDOH network.

### **D.13.1 Subject Area Specific Business Requirements**

The Contractor must:

1. Provide the ability to identify and report on the distinct data and method used to price pharmacy claims;
2. Invoice drug manufacturers on a quarterly basis for regular and supplemental rebates based on drugs dispensed in all settings (pharmacy, physician office, etc.) as found in the paid claims and managed care encounter history of the MDW;
3. Update the MDW with the claim-specific rebate amounts (regular and supplemental rebates as separate amounts) invoiced within each quarter. Also develop reports to enable NYSDOH to disburse to the Federal government and counties, based on their contributions to the NYS Medicaid payment of those rebated claims, their appropriate portions of rebates collected; and
4. Host JAD sessions with OHIP Pharmacy Policy and Operations business users to design and implement a reconciliation system to be used to track payment of invoiced drug rebates by drug manufacturers.

### **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the OHIP Pharmacy Policy and Operations business functions and meet the associated requirements listed above and in Attachment M.**

### ***D.14 OTHER STAKEHOLDERS***

In addition to the business areas and their associated general and business area-specific requirements defined in the previous sections, the MDW must serve the information needs of other defined State users with specific analytical needs. These users are drawn from the following nine areas:

1. Office of Medicaid Inspector General (OMIG);
2. Office of Attorney General/Medicaid Fraud Control Unit (OAG/MFCU);
3. Office of Mental Health (OMH);
4. Office of Alcohol and Substance Abuse Services (OASAS);
5. Office of Mental Retardation and Developmental Disabilities (OMRDD);
6. Office of Children and Family Services (OCFS); and
7. Office of the State Comptroller (OCS).

### **Other Stakeholders Global Business Requirements**

In order to best support these users and enforce the Security Requirements of this RFP, the Contractor must:

1. Create analytical data domains for each of these defined business areas utilizing filters established by NYSDOH that are based on a variety of demographic, eligibility and utilization criteria; and
2. Host JAD sessions with these business users and NYSDOH to refine the data elements to be contained within each data domain and the standard reports that will be developed.

#### **D.14.1 Office of Medicaid Inspector General**

The Office of Medicaid Inspector General (OMIG) is primarily responsible for the area of program integrity which encompasses a range of activities related to supporting NYSDOH efforts to make payments only for appropriately covered, correctly coded services and to improve healthcare delivery while reducing payment errors. These activities include fraud, abuse and overpayment functions. This is done through the use of focused data analysis employing tools like the Explanation of Medical Benefits (EOMB) form. The EOMB form, produced by the MMIS contractor and mailed to clients, details the payment/denial of claims submitted by providers for services provided to the client. The EOMB is used to detect abusive/fraudulent billing practices. OMIG also employs proactive and retroactive education targeting both provider and member communities to support its fraud, abuse and overpayment functions.

OMIG uses specific criteria and rules to identify target populations (e.g., providers, contractors, or members), establish patterns or parameters of acceptable/unacceptable behavior, test individuals against these models, or look for new and unusual patterns in order to identify outliers that demonstrate suspicious utilization of program benefits. This process relies heavily on activities conducted in the data warehouse and includes:

1. Identify target population – Define characteristics of the population in which the search will focus on: types of provider, location, types of services, patient characteristics, and medical conditions;
2. Identify data requirements – Specify time period, data elements and data relationships to include in the search;
3. Identify rules to apply to the data – Select or create rules including specified norms, statistical deviations, types of patterns, Boolean logic, ratios and percentages; and
4. Apply rules to target population.

OMIG requires a Fraud and Abuse Detection System (FADS) that will provide the technology and the tools to detect suspect medical claims and healthcare fraud, abuse, waste, and non-compliance. More robust technology and detection tools have emerged on the marketplace and OMIG would like to take advantage of these emerging technologies and tools.

#### **Stakeholder Specific Business Requirements**

The Contractor must implement a Fraud and Abuse Detection System (FADS) that will provide the technology and the tools to detect suspect medical claims and healthcare fraud, abuse, waste, and non-compliance.

## **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the OMIG business functions and meet the associated requirements listed above and in Attachment M.**

### **D.14.2 Office of Attorney General/Medicaid Fraud Control Unit (OAG) (MFCU)**

The Office of the Attorney General's (OAG's) Medicaid Fraud Control Unit (MFCU) is the centerpiece of New York's effort to investigate, penalize, and prosecute individuals and companies responsible for improper or fraudulent Medicaid billing schemes and takes a leading role in nationwide task forces investigating corporations operating in state across the country.

MFCU utilizes a team based approach to identify and investigate fraud committed by hospitals, nursing homes, pharmacies, doctors, dentists, nurses and other Medicaid providers. From inception through disposition, attorneys, auditors, and investigators work together to uncover complex fraudulent conduct for which the unit holds offenders accountable through both criminal prosecution and civil litigation.

## **Stakeholder Specific Business Requirements**

The Contractor must:

1. Provide access for at least 100 OAG users to any and all tools available, including but not limited to query, mapping, statistics and data mining;
2. Provide OAG unrestricted access to all data contained in, and related to, the MDW;
3. Provide a sufficiently large user work area on the MDW to allow OAG users to create tables, and sort and store data;
4. Provide secure access and existing functionality, including all predefined reports, which will be required by OAG; and Provide OAG the ability to extract data in both hard copy and data files.

## **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the OAG/MFCU business functions and meet the associated requirements listed above and in Attachment M.**

### **D.14.3 Office of Mental Health (OMH), Office of Alcohol and Substance Abuse Services (OASAS), Office of Mental Retardation and Developmental Disabilities (OMRDD) and Office of Children and Family Services (OCFS)**

OHIP works in conjunction with other State agencies and NYSDOH offices in order to carry out other aspects of the New York State Medicaid Program. These other state agencies and offices include the Office of Mental Health (OMH), Office of Alcohol and Substance Abuse (OASAS), Office of Mental Retardation and Developmental Disabilities (OMRDD) and the Office of Children and Family Services (OCFS) to ensure that the needs of the special populations that these agencies serve are addressed within the parameters of the Medicaid Program.

These agencies provide the following services:

**OMH** promotes the mental health of Medicaid members with a focus on adults with serious mental illness and children with serious emotional disturbances.

**OASAS** provides a system of addiction services including prevention, treatment and recovery for Medicaid members with chemical or alcohol addictions

**OMRDD** improves the quality of life Medicaid members with developmental disabilities and their families through the provision of housing, employment and family support services. Developmental disabilities include autism, cerebral palsy, epilepsy, mental retardation, and other neurological impairments.

**OCFS** improves the integration of services for Medicaid member families to protect their children from violence, neglect, abuse and abandonment. Their responsibilities include: foster care, adoption and adoption assistance, child protective services, preventive services for children and families, service for pregnant adolescents, child care and referral programs and protective programs for vulnerable adults.

### **Stakeholder Specific Business Requirements**

The Contractor must:

1. Provide users the ability to create models for specific treatment and service categories, and to analyze client outcomes in order to create and update best practices models for providers and vendors;
2. Provide users the ability to perform chronic and acute episode of care analysis that can be used to report on mental health disorders, mental retardation and developmental disability disorders, alcohol and substance abuse services and care, and care provided to foster children; and
3. Establish alerts regarding hospitalizations in acute or mental health facilities, substance abuse facilities and developmental facilities.

## **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the OMH, OASAS, OMRDD and OCFS business functions and meet the associated requirements listed above and in Attachment M.**

### **D.14.4 Office of the State Comptroller**

The Office of the State Comptroller (OSC) provides fiscal oversight of the eMedNY MMIS contract. OSC accesses the eMedNY Data Warehouse to monitor and audit the claims payment system and oversee the fiscal agent's contract to assure that payments are accurate and correct contractual obligations are met.

### **Stakeholder Specific Business Requirements**

The Contractor must:

1. Provide secure access for at least thirty-five (35) OSC users to any and all tools available, including but not limited to: query, mapping, statistics and data mining;
2. Provide OSC unrestricted access to all data contained in, and related to, the MDW;
3. Provide a sufficiently large user work area on the MDW to allow OSC users to create tables, and sort and store data;
4. Provide access to all predefined reports required by OSC;
5. Provide OSC the ability to extract and/or export data that can be used and manipulated independently from the MDW;
6. Ensure that OSC queries and communications with OSC staff concerning queries remain confidential; and
7. Ensure access, functionality, and quality is acceptable and sufficient to meet OSC's business requirements.

## **Proposal Requirement**

**By way of specific examples, describe in your proposal how you will support the OSC business functions and meet the associated requirements listed above and in Attachment M.**

## **E. TRAINING**

The Contractor is responsible for developing and delivering a broad spectrum of comprehensive training programs and related documentation and materials. The training materials and approach must include sufficient information for trainees to accurately and efficiently perform data warehouse-related tasks. Proficiency testing, quality control reviews and, where necessary, re-training will be the responsibility of the Contractor so that the trained personnel demonstrate expected proficiency. Training requirements and deliverables pertain to, at the minimum, the following areas:

1. Initial training of four hundred (400) users within six (6) months of the end of Phase 1;



2. User groups include: executive, power, business and casual users;
3. Training staff;
4. Training materials;
5. Self paced computer-based training (CBT);
6. Self paced Web-based training (WBT);
7. Provide five (5) training levels: beginner, intermediate, advanced, specialized and refresher; and
8. Ongoing classroom training for up to fifty (50) staff, as requested on a quarterly basis.

### **Proposal Requirements**

**Describe in your proposal how you will support the Training business functions and its associated requirements listed in Attachment M.**

## VI. TECHNICAL REQUIREMENTS

### A. OVERVIEW

The NYSDOH seeks a contractor to (1) perform a complete replacement of the existing eMedNY Data Warehouse in a phased implementation approach and (2) assume operational responsibilities of the Office of Health Insurance Programs (OHIP) Data Mart.

The specific technical requirements that must be met by the MDW and OHIP Data Mart solutions are presented in this section. Section VII Service Level Agreement Requirements presents a series of specific operational performance and availability system level agreements that must be met by the successful offeror.

The technology architecture provides the underlying computing infrastructure (i.e., hardware, software, network, database management system) that enables and supports the data and application architectures that comprise the MDW. Technical architecture design must address the requirements of scalability, capacity, extensibility, adaptability, performance, availability, stability and security.

In addition, the technology support architecture includes business continuity components (i.e., backup/recovery, failover, disaster recovery) which are deemed necessary to effectively manage and support the technology investment.

The functional components of the solution which include data acquisition, data access, data delivery, and managed metadata environment (MME) rely on the technical infrastructure to populate, report, and disseminate the data contained in the MDW.

Categories within the MDW technical requirements include:

#### Medicaid Data Warehouse (MDW)

- Infrastructure Requirements;
- Business Continuity Requirements;
- Data Acquisition Requirements;
- Data Access Requirements;
- Data Delivery Requirements;
- Managed Metadata Environment (MME) Requirements; and
- Data Model Requirements.

Categories within the OHIP Data Mart technical requirements include:

#### OHIP Data Mart

- Infrastructure Requirements and
- Business Continuity Requirements.

## **B. MDW INFRASTRUCTURE REQUIREMENTS**

### ***B.1 COMPONENT DESCRIPTION***

The following section describes the environments, hardware, network, software, and database management system requirements that the Contractor must meet in order to be responsive to this RFP.

1. Environments: The MDW must develop in Phase 1 and support through the remaining phases several environments within its solution set. An environment is defined as the infrastructure needed to support a functional need, such as development, training, etc. Individual components, such as servers, storage arrays, etc. could be used in more than one environment. These environments include:
  - a. Production – Environment used to deploy the integrated MDW production solution;
  - b. Test – Environment used to perform full-scale system integration testing for the integrated MDW solution;
  - c. Development – Environment used to develop and unit test all software contained within the integrated MDW solution;
  - d. User Acceptance Testing (UAT) – Environment used by NYSDOH to test the applications and data provided within the integrated MDW solution;
  - e. Training – Environment used to support user training of applications within the integrated MDW solution;
  - f. Failover – Environment used to support the business continuity failover capabilities;
  - g. Backup/Recovery – Environment used to support the business continuity backup/recovery capabilities; and
  - h. Disaster Recovery – Environment used to support the business continuity disaster recovery capabilities;
2. Hardware/OS – all hardware including servers, tape devices, storage, etc. and associated operating systems;
3. Network – all network hardware and software components;
4. Software – all software, including file system, system utilities, tool, application (both Commercial-off-the-shelf-software (COTS) and custom); and
5. Database Management System – all database management system software.

### ***B.2 COMPONENT REQUIREMENTS***

The MDW Infrastructure component requirements will include the following categories:

1. Technical Requirements
  - a. Environments;
  - b. Hardware/OS;
  - c. Network;
  - d. Software; and
  - e. Database Management System;
2. Documentation Requirements; and
3. Proposal Requirements.

## **B.2.1 MDW Infrastructure Technical Requirements**

### **MDW Infrastructure Environments Component Requirement**

The Contractor must provide a MDW infrastructure that meets the following environmental component requirements:

1. General
  - a. The Contractor must implement and support the following deployment and support environments: Production, Test, Development, User Acceptance Testing (UAT), Training, Failover, Backup/Recovery, and Disaster Recovery;
  - b. The Contractor must follow the State's guidelines and constraints for information technology architecture as documented in P04-001 Principles Governing The New York State Information Technology Enterprise Architecture (<http://www.oft.state.ny.us/policy/index.htm>); and
  - c. The Contractor must follow the State's strategic information architecture plans as documented in P04-001 Principles Governing the New York State Information Technology Enterprise Architecture (<http://www.oft.state.ny.us/policy/index.htm>);
2. Production – Environment used to deploy the integrated MDW production solution which includes:
  - a. Capacity to support NYSDOH's current production capabilities with the ability to expand in order to support the technical and business requirements in this RFP; and
  - b. Capacity to support Data Acquisition, Data Access, Data Delivery, and MME components;
3. Test – Environment used to perform full-scale system integration testing for the integrated MDW solution which must:
  - a. Mirror production in hardware, software stack, and data volumes in order to perform full-scale system integration testing. This testing environment must exist for Data Acquisition, Data Access, Data Delivery, and MME components. (see Section X Testing Requirements for complete set of testing requirements) and
  - b. Be able to handle scheduled or on demand requests to refresh the data from production with a full or referentially intact subset of data. These requests must be completed within two (2) business days;
4. Development – Environment used to develop and unit test all software contained within the integrated MDW solution which must:
  - a. Have the capacity to support the development of the Data Acquisition, Data Access, Data Delivery, and MME components and
  - b. Be able to handle scheduled or on demand requests to refresh the data with a referentially intact subset of data. These must be done in a timely manner;
5. User Acceptance Testing (UAT) – Environment used by NYSDOH to test the applications and data provided within the integrated MDW solution which must:
  - a. Have the capacity to support Data Acquisition, Data Access, Data Delivery, and MME components; and
  - b. Be able to handle scheduled or on demand requests to refresh the data with a referentially intact subset of data. These must be done in a timely manner;

6. Training – Environment used to support user training of applications within the integrated MDW solution which must:
  - a. Have the capacity to support Data Access, Data Delivery, and MME components; and
  - b. Be able to handle scheduled or on demand requests to refresh the data with a referentially intact subset of data that contains a representative set of data required for the training classes in a timely manner;
7. Failover – Environment used to support business continuity failover capabilities;
8. Backup/Recovery - Environment used to support business continuity backup/recovery capabilities; and
9. Disaster Recovery- Environment used to support business continuity disaster recovery capabilities.

### **MDW Infrastructure Hardware/Operating System (OS) Component**

The Contractor must provide a MDW infrastructure hardware/OS component that meets the following requirements:

1. The Contractor must provide pre-installation evaluation and preparation of the site for the selected hardware, including electrical, cabling, location at data center, and other physical needs of the system;
2. The Contractor must coordinate the delivery, installation, and repair of hardware;
3. Storage of data must take place on an open storage platform;
4. Processing of data must take place on an open server platform;
5. Hardware servers and storage must be employed that have a proven ability to support the processor, memory, I/O subsystem bandwidth and storage;
6. Both server and storage hardware must support a minimal high availability capability. (see Section VII for related SLAs);
7. Hardware (servers and storage) and operating systems must provide the ability to support a highly variable workload (i.e., routinely exhibits “peaks” or “spikes” due to warehouse loading and query-intensive processing);
8. Server and storage vendor(s) must possess a sound, market sustainable, processor and hardware architecture strategic vision;
9. Component hardware (processor/operating system) supporting the Data Acquisition platform must include a proven record of efficiency for computationally intensive operations (MIPS or SPECint benchmarks). Specifically, the Data Acquisition hardware platform must show a capacity to efficiently support a small number of threads running serially intensive applications;
10. Component hardware (processor/operating system) platform supporting the MDW database structures must support a large number of parallel threads, which are less computationally intensive, and more I/O and memory intensive;
11. Bandwidth between Data Acquisition and MDW database servers must be enough to support fast refreshes of the MDW database, with minimal disruption (see Section VII Service Level Agreement Requirements for system availability windows);
12. Hardware and operating system must be certified with recent major versions of the Database Management Software, and Data Acquisition, Data Access, Data Delivery, MME, Business Continuity component software. The Contractor will be

responsible for maintaining compatibility with hardware and software throughout the term of the contract. In addition, should hardware and/or software upgrades be necessary to meet stated performance and availability requirements or to ensure continued vendor support for commercial-off-the-shelf (COTS) and other customized products, the Contractor will be responsible for all such upgrades and licenses, at no additional cost to NYSDOH; and

13. All hardware proposed must be new equipment that has not been previously used.

## **MDW Infrastructure Network Component**

The Contractor must:

1. Install, configure, enhance, and maintain all hardware, software and provide services for the Contractor's local area network (LAN) up to the point of connection to NYSDOH's wide area network (WAN)/LAN;
2. Install and maintain data lines for any required access to NYSDOH network from the Contractor's project site. These lines will terminate at the point of demarcation on NYSDOH network to be determined by NYSDOH network services staff;
3. Provide back-up network connectivity at both the primary and alternate sites with the capacity to support the system and its components;
4. Provide a dedicated POTS line at each facility for dial-up access into the network from Albany, New York;
5. Allow the State staff access into the facilities;
6. Provide network support for the MDW which must, upon implementation, be able to support as many as twelve-hundred (1200) users, with an estimated two-hundred (200) users accessing the system concurrently. The network also must be able to allow for ten (10) percent growth per year in the total number of users and concurrent users;
7. Establish agreements with telecommunications network vendors to install secure data lines to its data center;
8. Provide and maintain all server, network, switches, hardware, racks for mounting hardware, power cabling inside of the racks, keyboard, video and mouse (KVM) switches and/or terminal servers for access to server consoles, monitors for KVM switches, applications/Web pages/ secure sockets layer devices to support https, encrypted network connections, and/or secure sockets layer requirements within the MDW hardware, software network solution;
9. Ensure that all proposed network hardware and software specifications for its LAN be compliant with New York State Office of Cyber Security and Critical Infrastructure Coordination, Cyber Security Policy P03-002, New York State Information Technology Policies, Standards and Guidelines (<http://www.cscic.state.ny.us/lib/policies>);
10. Submit to NYSDOH, prior to installation, plans for all connections to the MDW network. These plans must be reviewed and authorized by the designated NYSDOH resources. Additions or changes to network configuration also must be reviewed and approved by NYSDOH through the change management process;

11. Monitor network availability, throughput, bandwidth and response time and correct congestion and broken connectivity between users and the MDW LAN whenever a disconnection occurs within the Contractor's domain;
12. Ensure that NYSDOH or any third-party authorized by NYSDOH be able to directly access over the network, without Contractor intervention, any NYSDOH equipment located in the Contractor's data center;
13. Ensure that the contractor, NYSDOH staff and NYSDOH contractor staff have remote access capability through the NYSNET to access the MDW production, test, UAT, training, and development environments;
14. Put in place a firewall and proxies between its private network and the connection to the State's network;
15. Assign and configure addresses to support the ever-changing PC and printer environments;
16. Develop software as needed to support new telecommunications features, configurations, and devices;
17. Provide operations staff to assist with correcting problems associated with telecommunications hardware or software; and
18. Test and troubleshoot interfaces with other contractors or vendors for information exchange.

### **MDW Infrastructure Software Component**

The Contractor must:

1. Review, configure, generate, customize, install and maintain operating system software, database management software, network software, tool software and other system software in all environments for the MDW;
2. Diagnose problems related to the software;
3. Manage software versions, acquire associated software patches and fixes, apply fixes and test all applied fixes;
4. Develop and maintain relationships with vendors to keep up-to-date on new products;
5. Assist with analysis of NYSDOH requests for new software for appropriateness to the overall architecture;
6. Develop and maintain an inventory with regard to all software used in the MDW including but not limited to active versions, licensing requirements, interdependencies, etc. to assist with overall management and software upgrades;
7. Develop and implement standards for software installation such as data set names, architecture, volume names, etc. to streamline installation and maintenance of software; and
8. Manage scheduling of operating system upgrades to accommodate processing schedules and system availability needs of NYSDOH.

### **MDW Infrastructure Database Management System (DBMS) Component**

The Contractor must provide a MDW DBMS component and support services that meet the following requirements:



1. Supports efficient access and management for data;
2. Supports efficient storage and provides features to enable consistent data access benchmark queries described in Section VII.C.1 Service Level Agreement Requirements Data Access for data volumes up to fifty (50) terabytes, representing twenty-five (25) years of paid and denied claims and encounters;
3. Runs on open systems platforms;
4. Includes advanced technology critical to high performance in a large data warehouse environment such as high speed load utilities, high performing sort capabilities, efficient summary management features, advanced indexing, etc.;
5. Affords open client access application program interfaces (APIs) including Java based, open database connectivity (ODBC), and native drivers;
6. Has tight affinity and a significant installed base with Data Acquisition, Data Access, Data Delivery, and MME components;
7. Possesses a significant installed base and efficient support for chosen application servers;
8. Employs a system which provides support for XML;
9. Support physical database administration;
10. Maintain all databases used in the proposed solution, including installation, configuration, upgrades, patch fixes; and
11. Provide day-to-day database operational support, including:
  - a. Problem/issue identification and resolution;
  - b. Definition and activation of new environments; and
  - c. Monitor and tune to ensure that all environments operate efficiently.

**B.2.2 MDW Infrastructure Documentation Requirements**

The Contractor must produce MDW Infrastructure component deliverables detailed in the following document deliverables matrix during the systems development life cycle.

<b>Requirement Type</b>	<b>Component</b>	<b>Document</b>
Technical	MDW Infrastructure	MDW Project Plan
		MDW Strategy/Approach Document
		MDW Phase Scope Document (for each phase)
		MDW Standards Document
		MDW Detailed Requirements Document
		MDW Technical Architecture/Specifications Document
		MDW Detailed Design Document
		MDW Operations Manual

### B.2.3 MDW Infrastructure Proposal Requirements

Offerors must meet the following proposal requirements:

1. Describe the proposed technology solution for the MDW with integrated technology blueprint diagram(s) and associated narrative text that fully documents the solution. The integrated technology blueprint must contain an overview summary of all hardware, software, network, database components used in the solution;
2. Describe the detailed technology solution by identifying and describing the following components for each of the deployment and support environments described in Section B.2.1, above:
  - a. Environment
    - a. Describe each environment included in Section B.1, above, by including the hardware, software, network, database components and
    - b. Provide specifications for all environments using the form provided in Attachment O Environment Profile;
  - b. Hardware/OS (servers, storage, backup devices, etc. and associated operating systems)
    - Describe the hardware specifications;
    - Describe the software stack (e.g., operating systems, file systems, RDBMS, tools, applications) that the hardware supports;
    - Provide specifications for all hardware using the form provided in Attachment S Hardware Profile;
    - Describe the hardware monitoring capabilities;
    - Discuss the hardware in terms of capacity, scalability, and redundancy;
    - Describe how you plan to meet Service Level Agreements (SLAs) if a hardware component fails; and
    - Discuss the hardware in terms of interoperability with other infrastructure components.
  - c. Network
    - Provide a high-level network diagram;
    - Describe all network components (hardware and software), including but not limited to switches, firewalls, VPN devices, security appliances ( i.e., proxy servers, monitoring tools, etc.);
    - Provide specifications for all network components using the form provided in Attachment P Network Profile;
    - Describe the flow of network traffic;
    - Describe the network monitoring capabilities;
    - Describe how you plan to meet your SLAs, if a network component fails;
    - Discuss the network in terms of capacity, scalability, and redundancy; and

- Discuss the network in terms of interoperability with other infrastructure components.

d. Software

- Describe all file system software, database management software, third party software, COTS products, application software, utilities software and any other software required for the solution by including its primary purposes and use;
- Describe the hardware components that are used to execute each software component;
- Provide specifications for all software using the form provided in Attachment Q Software Profile;
- Discuss the software in terms of scalability;
- Describe the software monitoring capabilities;
- Describe how you plan to meet your SLAs, if a software component fails; and
- Discuss the software in terms of interoperability with other infrastructure components.

e. Databases

- Describe all the databases that are required for the solution by its primary purpose(s), approximate size, relational database management system (RDBMS) and version;
- Describe the hardware (server/storage) used to support each database;
- Provide specifications for all databases using the form provided in Attachment R Database Instance Profile;
- Describe the database monitoring capabilities;
- Describe how you plan to meet your SLAs, if a database component fails;
- Discuss the databases in terms of capacity, scalability, redundancy; and
- Discuss the databases in terms of interoperability with other infrastructure components.

## **C. MDW BUSINESS CONTINUITY REQUIREMENTS**

### ***C.1 COMPONENT DESCRIPTION***

The Business Continuity Component includes three major areas:

1. Backup/Recovery;
2. Failover; and
3. Disaster Recovery.

Backups are secondary copies of primary information. They provide short-term protection of data to ensure business continuity, are generated at a point-in-time and typically in a periodic automated fashion. Backups are executed to provide a point-in-time copy of information to protect critical business processes. The goal of the backup/recovery solution is data security through redundancy plus ease in restoring data in the case of failure or corruption.

Failover refers to the process and infrastructure required to switch from production to a full-service alternate environment due to a disruption due to daily issues, such as failed disk or server, bad communications line, etc.

Disaster recovery refers to major disruption, such as a flooded building, fire, or earthquake disrupting an entire installation. Plans, procedures, and infrastructure need to be established to recover from a major disaster and resume daily operations with minimal downtime.

## ***C.2 COMPONENT REQUIREMENTS***

MDW Business Continuity component requirements will be categorized in the following areas:

1. Technical Requirements
  - a. Backup/Recovery;
  - b. Failover; and
  - c. Disaster Recovery;
2. Documentation Requirements; and
3. Proposal Requirements.

### **C.2.1 MDW Business Continuity Technical Requirements**

#### **MDW Business Continuity - Backup/Recovery Requirements**

The Contractor must:

1. Backup all data files that reside on the multiple environments. These backups must be executed in such a way that any data set can be restored from the backup medium within ten (10) hours of the discovery and notification that a restoration is needed. On a weekly basis the Contractor will backup all databases and other data and store the backups at a secure off-site location;
2. Provide a backup/recovery component comprised of a high capacity backup and recovery infrastructure for all required component data within the Data Acquisition, Data Access, Data Delivery, and Metadata components. Secure backups will include but are not limited to the following datasets:
  - a. Database Data (all databases in solution set);
  - b. Files (all formats)
  - c. Operating System Software;
  - d. RDBMS Software;
  - e. Documentation (e.g., user manuals, operations/systems documentation, policies/procedures;)
  - f. Program code (source, executable); and
  - g. User libraries of reports, queries, etc.;
3. The frequency, speed, and flexibility must provide capacity to meet NYSDOH warehouse service levels. Service levels are detailed in Section VII of this RFP;

4. All back-up copies must be stored in a NYSDOH approved back-up storage location for five (5) years. The Contractor will be responsible for the cost associated with the back-up storage process and back-up storage location. All back-ups must be transferred to the successor contractor as described in the NYSDOH approved Turnover Plan;
5. An on-site copy of backups must be maintained at the MDW computer facilities for a period of seven (7) calendar days. These back-up copies will be used to address non-disaster data recovery without the need to retrieve the back-up copy from the back-up storage facility;
6. An automated scheduling system for running the back-up processes for all environments must be developed and maintained;
7. The process to verify that back-up and restoration processes were run appropriately must be developed and maintained. This process must verify that:
  - a. All scheduled back-up procedures have run successfully as scheduled;
  - b. Back-up copies are created in a useable (readable) form and can be used for successful restoration of objects; and
  - c. Back-up copies are stored in the correct location; and
8. In the case of source system- or application-dependent errors that result in invalid data being loaded into the data warehouse, the Contractor must be able to restore these tables utilizing the on-site back-up copies to its state prior to the erroneous load. Restoration of the table/tables must be accomplished within twenty-four (24) hours of the discovery and notification of the error.

### **MDW Business Continuity - Failover Requirements**

The Contractor must:

1. Provide a MDW failover component designed in such a way as to eliminate to the maximum extent possible any business outages due to hardware or network malfunctions;
2. Provide a MDW failover component with immediate failover capability;
3. Design the capability to switch operations from the production environment to the failover environment in the event technical problems incapacitate the production server;
4. Establish, along with NYSDOH, a hierarchy of critical services and infrastructure to determine the order that services must be restored; and
5. Design the capability to switch operations from the production environment to a failover environment on a daily basis to allow the refresh and maintenance of the production environment.

### **MDW Business Continuity - Disaster Recovery Requirements**

To the extent the primary site cannot be restored in thirty (30) calendar days, the recovery site will be considered the new primary site. All facility, technical, architectural (hardware, software security and network) requirements and applicable service level agreement requirements detailed in RFP Sections VII, VIII and XI will apply within ninety (90) days of the decision to declare the new primary site. Such declaration shall be at the sole discretion of the NYSDOH.

Upon NYSDOH declaration that a business continuity event exists, the contractor must execute the Disaster Recovery Plan.

The Contractor must:

1. Propose another computer site at a separate location to be designated as the disaster recovery site;
2. Have in place a Disaster Recovery Plan that addresses recovery of data warehouse functions, human resources and the technology infrastructure;
3. Develop and maintain the MDW Disaster Recovery Plan (DRP). The DRP must be available and present at the NYSDOH site. A copy must also be available at an offsite location approved by NYSDOH;
4. Maintain a DRP that provides for the recovery of critical data warehouse services within twenty-four (24) hours of the discovery of the service disruption, the declaration of a disaster or MDW production site becoming unsafe or inoperable. Full MDW functionality must be restored within ten (10) calendar days of the disaster. Critical data warehouse functions are defined as daily ETL refresh cycle, basic data access functions (query and reporting), Web portal and data back-up capabilities;
5. Maintain a DRP that details procedures to address (but not be limited to) the following potential events:
  - a. Natural disasters (e.g., earthquake, fire, flood, storms);
  - b. Terrorist acts;
  - c. Power disruptions or power failure;
  - d. Computer software or hardware failures;
  - e. Computer shutdowns due to hackers, viruses, etc., as well as significant compromise/degradation of data warehouse performance;
  - f. Processing shutdowns; and
  - g. Labor strife (walkouts, shutdowns);
6. Develop, maintain and submit to NYSDOH, in advance, all proposed off-site procedures, locations and protocols for NYSDOH review and approval prior to implementation. These items must be incorporated by the Contractor as components of the DRP;
7. Ensure that each aspect of the DRP is detailed as to both Contractor and NYSDOH responsibilities, and must satisfy all requirements for Federal certification;
8. Ensure that the DRP is available to State auditors at all times;
9. Modify the DRP, software installation procedures and operational procedures as needed to reflect the changes implemented with the new data sources, if the system changes or any enhancements will impact the disaster recovery capability. Modifications to the DRP must be submitted to NYSDOH for review and approval;
10. Provide NYSDOH with up-to-date copies of the DRP in an electronic and printed version on the first business day of each calendar quarter during the term of the contract and after a substantive change to the data warehouse that would require revision to the DRP. The Contractor must also provide a walk-through of its DRP during the first calendar quarter of each year for the life of the contract;
11. Publish the DRP in the metadata repository;
12. Maintain or otherwise arrange for a disaster recovery site for its system operations in the event of a disaster that renders the MDW production site inoperable;

13. Take all steps necessary to fully recover the data and/or system from the effects of a disaster and to reasonably minimize the recovery period;
14. Execute the DRP test to demonstrate the capability of the DRP to restore processing capability for all critical system components at a remote site. The DRP test must be included as a part of Acceptance Testing and be executed annually after the implementation of Phase 1 of the data warehouse implementation. The test at the remote site must be performed for all input, processing and output procedures functions. Further, the test must include:
  - a. The processing of one weekly ETL cycle and one daily ETL cycle as in place at the time of the test, and must involve all major data warehouse functions including data acquisition, data access (Web portal, business intelligence capabilities), MME, and data delivery components. Verification of the results against the corresponding procedures and production runs conducted at the MDW production site;
  - b. The length of the test will be the amount of time that is necessary to recover from the disaster and provide proof that the recovery has been successfully completed;
  - c. A report summarizing the hot site processing test results must be provided to NYSDOH within thirty (30) calendar days of the completion of the test. This report must include remediation steps taken to resolve any issues discovered during the test; and
  - d. The DRP test must be performed at no additional cost to NYSDOH. In the event the Contractor's test is deemed by NYSDOH to be unsuccessful, the Contractor must continue to perform the test at its expense until satisfactory results are received and approved by NYSDOH;
15. Perform an annual review of the disaster recovery back-up site, procedures for all off-site storage and validation of security procedures. A report of the back-up site review must be submitted within thirty (30) calendar days of the review. NYSDOH reserves the right to inspect the disaster recovery back-up site and procedures at any time with twenty-four (24)-hour notification;
16. If the MDW production site becomes unavailable during the contract period, NYSDOH may require the Contractor to move MDW operations to the disaster recovery site. In this event, the Contractor will not be allowed to return to the original MDW production site without the approval of NYSDOH. NYSDOH approval will depend on the Contractor's ability to demonstrate that the MDW is again fully operational and all connections are available;
17. Provide two independent power sources (e.g. public grid and generator) for the primary site, both capable of sustaining operation of the system and its components, and all environmental controls (e.g. cooling);
18. Provide two independent sources of chilled water, one of which does not rely on the public power grid for its water delivery;
19. Provide an uninterruptible power source (UPS) at both the primary and alternate sites with the capacity to support operation of the system and its components for 30 minutes and to ensure an orderly shutdown if necessary; and
20. The Contractor must provide back-up network connectivity at both the primary and alternate sites with the capacity to support the system and its components, and



ensure a minimum bandwidth of a full T1 between the data centers and the State network. Backup network connectivity must be available in the event of a failure of the public power grid that supplies each of the data centers. Network communications to the data centers must be designed so as to avoid obvious single points of failure.

**C.2.2 MDW Business Continuity Documentation Requirements**

The Contractor must produce MDW Business Continuity component deliverables detailed in the following document deliverables matrix during the systems development life cycle.

Requirement Type	Component	Document
Technical	MDW Business Continuity	MDW Project Plan
		MDW Strategy/Approach Document
		MDW Phase Scope Document (for each phase)
		MDW Standards Document
		MDW Detailed Requirements Document
		MDW Detailed Design Document
		MDW Business Continuity Plans <ul style="list-style-type: none"> <li>o Failover</li> <li>o Backup/Recovery</li> <li>o Disaster Recovery</li> </ul>
		MDW Operations Manual(s)

**C.2.3 MDW Business Continuity Proposal Requirements**

Offerors must meet the following proposal requirements:

**MDW Business Continuity - Backup/Recovery Proposal Requirements**

1. Describe the approach to data backup and data recovery. The Offeror must discuss the following points:
  - a. Appropriate storage media for back-up copies;
  - b. Retention approach for on-site back-up copies and off-site back-up copies;
  - c. Back-up and recovery software tools and utilities used;
  - d. Off-site storage location for back-up data copies; and
  - e. Backup/Recovery Process.

### **MDW Business Continuity - Failover Proposal Requirements**

1. Describe how the proposed production configuration(s) will ensure failover and redundancy to meet the system availability requirements outlined in Section VII in an event such as power shutdown or power interruption, failure in the telecommunications equipment, hardware failure (processor, disk storage, memory, I/O subsystem), etc.;
2. Describe the redundant or fail-over strategies associated with all storage devices;
3. Describe the redundant or fail-over strategies with all network hardware; and
4. Describe the redundant or fail-over strategies with all databases.

### **MDW Business Continuity - Disaster Recovery Proposal Requirements**

1. Describe how the proposed solution will provide for the recovery of critical data warehouse services within twenty-four (24) hours of the discovery of the service disruption, the declaration of a disaster or MDW production site becoming unsafe or inoperable. Critical MDW functions are defined as daily Data Acquisition refresh cycle, basic Data Access functions (Web portal, Business Intelligence), Data Delivery and data back-up capabilities;
2. Describe how the proposed solution will restore MDW functionality within ten (10) calendar days of the disaster; and
3. Describe how disaster recovery is accomplished from a hardware, software, network, and database perspective.

## **D. MDW DATA ACQUISITION REQUIREMENTS**

### ***D.1 COMPONENT DESCRIPTION***

The data acquisition component includes two major areas:

1. Extract, transform and load (ETL) processes
2. Data quality processes

ETL processes are a major component of the MDW architectural foundation. Generally, these processes extract data from various source systems, enforce data quality and consistency standards, conform data so that the separate sources can be used together, and finally deliver the data in a format that is can be used for reporting and analysis. The ETL processes are designed to move data from the various source(s) to the MDW and from the MDW to subsequent internal analytical applications. The ETL processes must transform data from a number of disparate sources into an integrated, conformed set of data structures.

Currently, the eMedNY data warehouse is fed from a variety of sources and populates and manages the following internal analytical applications within its control: J-SURS, SPSS Server, R-DUR and Ingenix Data Mart. The data acquisition process will continue to populate the J-SURS application and the Contractor's proposed R-DUR application as a requirement of this RFP to be completed within Phase 1. The current internal analytical applications of SPSS and Ingenix will no longer be supported and therefore will not need to be populated to meet the requirements of this

RFP. See the Offerors' Library for a listing of current data sources, the required internal analytical applications, their current volumes and frequency of refresh.

In addition, offerors may propose a solution that contains additional internal analytical applications (e.g., MARS) to meet the business requirements described in Section V Business Requirements. The technical requirements within this section would apply to those internal analytical applications as well as the required J-SURS and R-DUR application mentioned previously.

Currently, eMedNY also delivers large volumes of data to a number of externally controlled data marts. The requirements for the delivery to these externally controlled data marts are described in Section VI.F Technical Requirements MDW Data Delivery Requirements. See the Offerors' Library for a listing of required externally controlled data marts, their volumes and frequency of refresh.

The ETL processes can be divided into two groups: one time load (conversion) processes and subsequent refresh processes. The two process groups differ in that the one time load will only run once on the initial load of the data from the sources indicated, while the continual refresh processes will load data on a defined frequency (e.g., daily, weekly, monthly, quarterly). The sources for these two processes will be different. See the Offerors' Library for a listing data sources for one time load and continual refresh processes. These attachments define the data sources that are known to be introduced by each phase of the implementation.

An integral part of the data acquisition component is the data quality improvement set of processes. This set of processes seeks to measure data quality (both definition and content), analyze, identify, and correct root causes of data defects, and to establish improvement processes to prevent defective data in the future. Data profiling is used to reveal data quality issues, gaps, inconsistencies, and incompatibilities within data sources, before the data is integrated and loaded into the MDW. This data quality process does not occur once when the source systems are initially assessed, but is an ongoing process to deliver comprehensive, consistent, relevant, purposeful, and timely data to the user community.

NYSDOH has the following objectives for the data acquisition process component:

1. Provide a tool-based repository and managed workflow approach that supports data extraction, cleansing, aggregation, reorganization, transformation, derivation, and load operations to the MDW and internal analytic applications data marts within the timeframes allocated for the large volumes of data that need to be captured from a variety of source systems and formats;
2. Provide the capability to trace/report the ETL processes by including audit and control, error/exception handling, balancing, and operational statistics; and
3. Provide the capability to identify, correct, and report data quality/defect issues including data redundancy, incorrect values, missing values, and inconsistent values of the data sources and to continually monitor the data quality of the data published in the MDW via an automated data profiling tool.

## **D.2 COMPONENT REQUIREMENTS**

Data acquisition component requirements include the following categories:

1. Technical Requirements
  - a. ETL
    - General and
    - Tool;
  - b. Data Quality;
2. Documentation Requirements; and
3. Proposal Requirements.

### **D.2.1 MDW Data Acquisition Technical Requirements**

#### **ETL**

The Contractor must provide a MDW ETL data acquisition component that:

1. ETL – General
  - a. Is a mature, intuitive, easy-to-use COTS repository-based tool that addresses the requirements in this RFP;
  - b. Performs a one time load (conversion) of data from sources outlined in the Offerors' Library for each development phase indicated using the proposed ETL tool;
  - c. Performs a continual refresh of data from sources outlined in Offerors' Library reference for each development phase indicated using the proposed ETL tool;
  - d. Supports the population of summarized, aggregated structures based on detail data changes in the timeframe of the detail refresh window using both set-based and procedural constructs using the proposed ETL tool;
  - e. Supports the population of internal analytic applications that are specifically required or proposed as part of the solution;
  - f. Supports the ability for multiple developers to work on the project concurrently;
  - g. Supports ease in promotion of code from one environment to another (e.g., development to test, test to production, etc.);
  - h. Provides the capability to perform high-speed movement of data between source and target systems located on the network;
  - i. Provides the capability to efficiently acquire, transform, and load very large data volumes. See the Offerors' Library for a listing of the current volume of source data;
  - j. Provides a development environment with the capability to quickly build and deploy new source/target combinations within the MDW;
  - k. Supports automated impact analysis capabilities against the ETL code base;
  - l. Supports the versioning of ETL modules;

- m. Provides the capability to create ETL functions using pre-packaged transformation objects;
- n. Provides the capability to design, develop and implement reusable ETL processes for transformations, exception/error handling, audit and control, and balancing;
- o. Supports the ability to enter documentation from system level down to individual code line and includes a run-time debugger; and
- p. Provides automatic and manual control of caching to balance quick response with scalability.

## 2. ETL Tool – Extraction

- a. Provides service to deliver transparent, cross-platform access to remote data sources;
- b. Supports the receipt of data from a variety of source systems and formats of source data (e.g., flat files, .csv files, relational database tables, etc.);
- c. Efficiently processes varying arrays and repeating groups; and
- d. Provides the capability to efficiently unload/select or filter data from source systems including the application of remote filters (qualifying criteria) against the source.

## 3. ETL Tool – Cleansing/Standardization

- a. Includes data cleansing procedures that are the result of the identification of data quality issues discovered in the source systems that feed the MDW and the internal analytic applications;
- b. Performs both set-based and procedural cleansing routines based on the data quality objectives identified;
- c. Efficiently integrates third-party data cleansing tool(s) within the natural flow of the ETL process; and
- d. Perform address and name cleansing routines.

## 4. ETL Tool – Transformation

- a. Provides the capability to apply complex data mappings and domain value conversions against source data;
- b. Provides the capability to perform structural transformations against source data including summarization, partitioning, normalization, consolidation, filtering, derivation and other structural transformations;
- c. Provides geocoding capabilities for subject area addresses (e.g., provider, recipient) via tool or third-party plug-ins;
- d. Provides fast, flexible lookup capabilities; and
- e. Provides a development environment in which logic for type 1, type 2, and type 3 slowly changing dimensions can be quickly and accurately written.

## 5. ETL Tool – Loading

- a. Provides the capability to perform high-speed movement of data between source and target systems located on the network; and
  - b. Provides the capability to efficiently load very large data volumes. See the Offerors' Library for a listing of current data source volumes.
6. ETL Tool – Overall Process Control
- a. Provides the capability to schedule and monitor transformation jobs/sessions that are used to populate MDW internal analytic applications;
  - b. Provides the capability to create complex job streams with interdependencies, create complex job schedules that have both serial and parallel streams, initiate jobs based on time or occurrence of events, and create log files that are detailed enough to debug issues;
  - c. Provides audit and control procedures that will balance elements that are both additive (sums) and non-additive (counts) used to compare the data populated in the source systems to the target MDW and from the source MDW to the data marts;
  - d. Provides the capability to re-route error or exception records to a separate target for future interrogation;
  - e. Provide the ability to correct data and subsequently re-submit corrected data to the ETL process;
  - f. Provides reporting of results of an ETL session, including automatic notification of normal processing and failures of the ETL process, description and counts of exceptions;
  - g. Supports the ability to generate and manage notifications and alerts, including how the alerts are registered, logged, and to whom they are posted;
  - h. Supports the ability to tune ETL process steps;
  - i. Supports the ability to load-balance ETL jobs or process steps; and
  - j. Supports the ability to recover from the abnormal ending of a job and restart or rollback.
7. ETL Tool – Metadata
- a. Supports the generation, storage, searching, reporting, importing, exporting of ETL generated metadata, including source definitions, mappings, transformations, target definitions, data lineage (looking backward), data dependency analysis (looking forward), process flows, operational statistics (e.g., records/rows read, records/rows written, process start/end clock/CPU times, process duration, number of records/rows rejected, rejection reasons, etc.); and
  - b. Stores its metadata in an open, accessible format including an open application program interface (API) which will allow ease of acceptance and transport of metadata from modeling tools and to user tools and the MME.

### **Data Quality Processes**

1. Provides a tool that supplies data profiling capabilities that will obtain comprehensive and accurate information about the content, quality, and structure of data in the source systems as an on-going process;
2. Provides the data profiling metrics such as completeness, consistency, conformity, integrity, duplication, and accuracy in easy-to-understand reports, charts, graphs, etc.;



3. Continually monitors the data quality within the MDW and internal analytic applications;
4. Includes audit and control processes that will identify, report, summarize errors/defects in the data residing in the MDW and the internal analytic applications;
5. Includes error/exception handling processes that will identify/isolate the errant data; and;
6. Include audit and control processes that will prove that the target MDW and internal analytic applications were populated accurately and completely.

### D.2.2 MDW Data Acquisition Documentation Requirements

The Contractor must produce MDW Data Acquisition component deliverables detailed in the following document deliverables matrix during the systems development life cycle.

Requirement Type	Component	Document
Technical	Data Acquisition	MDW Project Plan
		MDW ETL One Time Load (Conversion), MDW ETL Subsequent Refresh Strategy/Approach Document
		MDW Data Quality Strategy/Approach Document
		MDW Phase Scope Document (for each phase)
		MDW Standards Document
		MDW Detailed Requirements Document
		MDW Source Assessment
		MDW Source-to-Target Mapping
		MDW Conceptual/Logical/Physical Data Models
		MDW Detailed Design Document
		MDW Test Plans, Test Scripts, Test Cases, Test Results
		MDW Operations Manual

### D.2.3 MDW Data Acquisition Proposal Requirements

Offerors must meet the following proposal requirements:

#### ETL

Describe the strategy and approach that will be used to extract, transform, and load the MDW and internal analytic applications. Include all technical components that comprise the proposed solution including all software (both COTS and custom-developed), hardware and databases. Discuss the solution in terms of its degree of integration, flexibility, scalability,

extensibility, supportability/maintainability, and affinity/relationship with other proposed components. Detail the proposed solution by describing how the one-time load and subsequent data refreshes will be accomplished in the following areas for the MDW and internal analytical applications:

1. Extraction;
2. Cleansing/Standardization;
3. Transformation;
4. Loading;
5. Process Control; and
6. Metadata Management.

## **Data Quality**

Describe the strategy and approach used to provide data quality processes to the population of the MDW and the internal analytic applications. Include all technical components that comprise the proposed solution including all software (both COTS and custom-developed). Describe the following areas within this component:

1. Data Profiling;
2. Data Quality Reporting;
3. Data Quality Assessment Techniques;
4. Error/Exception Handling; and
5. Audit and Control.

## **E. MDW DATA ACCESS REQUIREMENTS**

### ***E.1 COMPONENT DESCRIPTION***

The MDW currently serves a diverse and geographically distributed user population. State and local organizations, as well as the Federal government, all require access to Medicaid data. Meeting the needs of this diverse user base requires a blend of data access component software (query, reporting, business intelligence (BI), decision support systems (DSS), executive information systems (EIS), a Web portal based interface to this software set), and well-defined data warehouse access policies that recognize and support the needs of the individual data warehouse user and support State and Federal confidentiality requirements. NYSDOH seeks to continue to serve the current users as well as increase the number of users and expand the data warehouse capabilities to meet the reporting and analytical demands of new health care initiatives.

NYSDOH recognizes that data access policies, procedures and software must be compatible with the various levels of technical skill sets and business requirements for the data warehouse users. The MDW supports four types of users based on their technical skill levels:

**Executive User:** This user possesses the least technical data warehouse skills. Executive users are often the recipients of generated reports. They usually execute basic canned queries and canned reports;

**Casual User:** The casual user has limited technical skills and primarily uses data from the data warehouse by reading reports. The casual user is most comfortable opening static reports and receiving the results from pre-created queries, some of which require the user to input some simple parameters (date range, county code). The casual user is not skilled in developing queries and reports and may include executive or management level staff of the organization;

**Business Analyst User:** The business analyst user has a basic level of technical skills and often utilizes the data warehouse to answer basic business questions through modifying or developing simple to moderately complex queries and reports. The business analyst user is comfortable with developing basic queries and reports and has simple to mid-level skills with structured query language (SQL) as well as a basic knowledge of relational database technology. Though comfortable and capable of working independently with simple to moderate analytical tasks, the business analyst user requires support from power users and or technical staff to modify or develop complex queries and reports; and

**Power User:** The power user has strong technical skills and database knowledge. The power user is comfortable with developing complex queries and reports with minimal dependence on technical support. The power user often assists the business analyst user and casual user in meeting their analytical needs and often develops the standard queries and reports used in their NYSDOH.

The data access component includes two major areas:

1. Web portal - a server-based application that will provide various services to the NYSDOH community via a Web browser interface. The Data Access BI Component, Data Delivery Component, and MME Component must be accessible via the Web portal; and
2. Business Intelligence (e.g., Query, Reporting, Business Intelligence, Decision Support System, Executive Information Management System, Dashboarding functions) – these applications provide NYSDOH with a more comprehensive knowledge of the factors affecting Medicaid policy, thereby assisting NYSDOH and other State agencies in making more informed decisions in managing programs. BI applications provide the capability to organize and assess data, thereby transforming the results into actionable information. BI can further be defined to include query, reporting, decision support analytic capabilities, executive information management systems and dashboarding.

## ***E.2 COMPONENT REQUIREMENTS***

Data access component requirements will be categorized in the following areas:

1. Technical Requirements
  - a. Web portal
  - b. Business Intelligence (Query and Reporting), Decision Support System, Executive Information Management System and Dashboards
2. Documentation Requirements
3. Proposal Requirements

## **E.2.1 MDW Data Access Technical Requirements**

The Contractor must provide a MDW data access component that:

### **Web Portal**

#### **General**

1. Supports the seamless integration of the data warehouse components providing a central access point for the user to all MDW Data Access, Data Delivery, and MME functionality;
2. Is compatible with the Contractor's proposed Data Access and Data Delivery components;
3. Supports the current level of usage of twelve-hundred (1200) active users and two-hundred (200) concurrent users. A yearly growth rate of ten (10) percent in the number of active and concurrent data warehouse users can be used for forecasting purposes; and
4. Is integrated into the proposed monitoring system in order to quantify and qualify uptime, accessibility, and monitoring of system logs for preventive purposes.
5. Must be compliant with New York State Chief Information Officer (CIO)/Office for Technology (OFT), CIO/OFT Policy Number P08-005, Accessibility of Web-Based Information and Applications (<http://www.oft.state.ny.us/policy/nys-p08-005.pdf>) and CIO/OFT Standard Number S08-005, Accessibility of Web-Based Information and Applications (<http://www.oft.state.ny.us/policy/nys-s08-005.pdf>); and
6. Conform to any State standards regarding the look and feel of web-based information and applications.

### **Business Intelligence (BI) (Query and Reporting), Decision Support System (DSS), Executive Information Management System (EIS) and Dashboards**

#### **General**

1. Provides a mature, intuitive, easy-to-use Web-based COTS tool that addresses the Data Access requirements in this RFP with one a comprehensive tool suite;
2. Continues to support Cognos as a BI tool suite, for the approximately two-hundred (200) county users (see Section II Current New York State MDW and OHIP Data Mart Architecture). While the Contractor must continue to use Cognos to meet the needs of the LDSSs, offerors are free to propose any BI tool suite that meets the requirements of this RFP. NYSDOH has no preference for any BI tool suite of products, and the offerors should be aware that this required use of Cognos for the LDSSs must not be considered an approval or disapproval of the use of Cognos as the BI tool suite;
3. Supports the current level of usage of twelve-hundred (1200) active users and two-hundred (200) concurrent users. A yearly growth rate of ten (10) percent in the number of active and concurrent data warehouse users can be used for forecasting purposes;
4. Provides canned reports, outlined in the Offerors' Library for the development phases indicated. Data access BI component must continue to create reports for common and repeated needs over the lifetime of this contract and maintain a library of these reports both

- public and private (user defined) organized in a manner that facilitates the use and secure access to these reports;
5. Provides a secure interface path (see Section XI Security Requirements of this RFP) to data accessed via this toolset;
  6. Includes software that supports the needs of:
    - a. Executive users to execute basic canned queries and canned reports via a dashboard;
    - b. Power users to develop complex queries executed against the data warehouse using a tool or direct structured query language (SQL) constructs;
    - c. Casual users to perform simple queries based on point and click technology; and
    - d. Business analysts to perform simple and moderate queries;
  7. Provides space that data warehouse users can use to exchange useful queries and reports that can be modified and used by other data warehouse analysts;
  8. Provides a summary level dashboard that is interactive without the need for user programming or extensive training. The summary level dashboard must provide ease of use and facilitate immediate user visualization without the need for separate tools;
  9. Provides Web-enabled access for external users, e.g., Legislators, providers, etc. This will require secure access to aggregated and non-confidential data with a browser-compatible interface that functions like a Web site allowing for customization to meet the needs of specific users groups;
  10. Provides a suite of high-level and/or general-level reports, designed to provide indicators and general trends (e.g., financial, utilization, clinical analysis, provider, eligibility, pharmacy, demographics, etc.) within and across the Medicaid population to fulfill the executive information system needs; and
  11. Meets performance and availability requirements and must be kept current with upgrades and patches.

### **Ease of Use**

1. Provides the capability to allow casual users with limited knowledge of SQL to develop queries through point-and-click functionality;
2. Provides the ability to add measures to or delete measures from any report available and allow the user to develop measures, without needing knowledge of SQL or other complex query language and without having to do manual table joins even if the required data is stored in separate tables;
3. Provides a menu of summary level reports, charts, maps and graphs that are available in a view-ready and print-ready format. The application menu must utilize point-and-click functionality without the need for specific commands; and
4. Requires minimal training.

### **Sources**

1. Provides the capability to connect to any Open Data Base Connectivity (ODBC) compliant data source;
2. Provides users with the capability to import a list of user-defined values (e.g., a list of questionable providers, targeted clients) or other driver data to use in order to include or exclude results for query/reporting;

3. Provides the capability to import/save user-defined data that can to be used as part of the filtering criteria against published MDW data;
4. Has native access to the proposed RDBMS;
5. Has adapters for the access of data in external sources in their native form;
6. Provides users with the ability to use data that has been stored in user-defined tables as a parameter that will be used to join to the data warehouse to drive queries;
7. Can import a list of user-defined values into the user library. The capability for creating lists must include, but not be limited to, lists of members, provider groups, individual-line servicing providers, procedure codes and diagnosis codes; and
8. Data access BI component must allow importing of external data into user tables.

### **Outputs**

1. Supports the creation of delimited (with a variety of delimiters, including commas, tabs, and other special characters) or fixed positional format data extracts;
2. Supports the export of data to .xls, .csv, .txt, .doc, .mdb, .xml, .pdf, .html;
3. Provides users with the ability to select the delimiter to be used in a delimited output data set;
4. Provides the ability to export reports to multiple sheets within an Excel workbook;
5. Provides the capability to print and print preview query results;
6. Presents data in a variety of outputs (e.g., tabular and graphic);
7. Support geocoding technology either as an inherent feature or through an interface with geocoding software;
8. Has the integrated capability to graph reports and make the reports presentation-ready without the need to export the data to third-party software;
9. Delivers reports by fax, email or intranet posting;
10. Provides a library of canned reports that can be accessed and executed by users that have been granted access to the reports;
11. Includes descriptive names for canned reports and be organized within the library in a way that facilitates ease of use;
12. Contains a library to store query/report multiple control files;
13. Allows the user to store data subsets, lists, user-developed tables, custom reports, and customized norms in user online libraries;
14. Includes mapping software with the capability for GIS functionality including mapping of addresses to zip code+4. This software must be compatible with the Contractor-recommended BI tool suite;
15. Includes the ability for the user to create large data objects (tables, indexes, etc.) to support complex data analyses (total of at least one (1) TB for all users);
16. Allows the creation of standard format reports, charts, graphs and geographic information system (GIS) displays which must be printable on all Contractor/NYSDOH supplied local and network laser/ink jet printers and must be transferable to other applications (e.g., Microsoft Word, Excel spreadsheets, and PowerPoint);
17. Provides the ability to display Medicaid demographic data by type of delivery system on geographical maps at the various levels (e.g., State, county, city, health district, managed care regions, zip code, local district social service office, etc.);
18. Provides the ability for NYSDOH-approved users to automatically publish, save and send reports, charts, graphs and other static type documents; and
19. Provides the ability to print reports, text, tables, maps and charts/graphs in hard copy form,

on all NYSDOH local and network printers as specified in the Principles Governing the New York State Information Technology Enterprise Architecture document available at <http://www.oft.state.ny.us/Policy/p04-001/principles.htm>.

### **Query**

1. Provides the ability to create, save, modify, publish and share queries;
2. Provides pre-defined templates;
3. Supports parameter based queries;
4. Supports query prediction;
5. Supports outer joins (left, right), unions, intersections, minus operations of multiple datasets;
6. Supports correlated sub-queries (multi-pass queries);
7. Supports current American National Standards Institute (ANSI) SQL standards;
8. Supports the capability to hand-code or import SQL;
9. Provides the user the capability to sort and drill down on completed reports;
10. Provides the user the capability to create flexible reporting formats and flexibility in selecting data items to be included in the report;
11. Allows for independent analysis and study by providing drill down capabilities to the level of individual member, provider, or claim line;
12. Offers the ability for power users who understand the complex data model to create their own dynamic joins between tables;
13. Provides query editing capabilities to support user query development and modification;
14. Provides the capability to sort, filter and find data in the query results;
15. Includes a graphical interface showing table structure, relationships and built-in expression builders or a natural-language interface where the user can type in a question and the system will convert the entry into SQL or other code;
16. Provides flexible filtering or “sub-setting” to specify the selection criteria for reports. There must be ready-to-use subsets that are appropriate for Medicaid (e.g., Federal age groups, and eligibility groupings) as well as user-defined groups (e.g., ranges of values). The sub-setting feature must support complex “and/or” logic;
17. Provides users the ability to re-sort or re-group the data returned from a query, without issuing a new query to the database repository; and
18. Provides the ability to perform unduplicated counts, including unduplicated counts of members, providers and services (i.e., visits, admissions, days, prescriptions, dollars, etc.).

### **Analysis**

1. Provides multi-dimensional reporting capabilities that would include slice and dice, drill-down (from the highest to the lowest level of detail), drill-up (from detail to summary with equal ease on any dimension of the data), drill across and pivot result;
2. Has the ability to select measures, dimensions, subsets and time periods from a menu and apply selections as flexible objects that can be inserted through drag-and-drop technology to make cross-tabular and multi-tabular reports and allow flexible pivoting of rows to columns and vice versa;
3. Provides pre-defined logical drill paths (i.e., from summary to detail) so the user can move quickly up or down in levels without defining a new query and allow the user to skip levels in the drill path or modify the drill path real-time;

4. Performs summarization grouping functions (e.g., count, max, min, sum, average, standard deviation, etc.);
5. Supports stratified random sampling with appropriate statistics (e.g., list of members or claims) and generation of random sampling with associated statistics;
6. Has the capability to build custom formulas and derivations;
7. Supports what-if analysis;
8. Provides aggregation or summarization rules based on the existing reports and data filters that are pre-defined and static. This limits the range of data presentation choices and drill down capabilities;
9. Provides analytic slicing and drilling capabilities to ensure a fast response;
10. Provides, at a minimum, the following summary level information:
  - a. Financial indicators (e.g., per-member, per-month expenditures and per-member, per-year expenditures);
  - b. Eligibility indicators;
  - c. Utilization indicators; and
  - d. Access to care indicators;
11. Allows weighting and ranking to be applied in analysis;
12. Provides linear programming capabilities;
13. Provides predictive modeling capabilities; and
14. Supports random number assignment of members, providers and stratified random sampling with appropriate statistics (e.g., list of members, providers or claims) and generation of random sample with associated statistics.

### **Presentation**

1. Allows for online maintenance of reports to include addition, deletion, editing, copying, pasting actions;
2. Integrates data visualization techniques useful for exception reporting (e.g., exception highlighting and graphing);
3. Proactively provides exception highlighting where thresholds have been met and notify the user when certain user-defined criteria have been met; and
4. Includes a menu with the ability to review reports, graphs, charts and other related documents in multiple formats and levels utilizing the latest data.

### **Scheduling**

1. Accommodates the scheduling of reports to be run immediately or scheduled in the future, based on time or event trigger; and
2. Provides the capability to schedule reports for execution and route the result sets automatically to select addressees through e-mail.

### **Help Functions**

1. Provides user-friendly online help features including but not limited to:
  - a. How-to examples;
  - b. A comprehensive index;
  - c. A comprehensive glossary;

- d. User manuals; and
  - e. Command instructions;
2. Provides the capability to schedule reports for execution and route the result sets automatically to select addressees through e-mail.

### **Metadata**

1. Supports an online/contextual help function;
2. Supports descriptive text and search capabilities for elements, derivations, reports, etc.;
3. Provides the capability to import metadata from the database catalog and other external products (e.g., MME, ETL tool, Modeling tool, etc.);
4. Provides the capability to export metadata to other external products (e.g., MME, ETL tool, Modeling tool, etc.); and
5. Provides an ease of maintenance of metadata updates.

### **Administrative Functions**

1. Provides the capability to generate alerts when business thresholds have been exceeded;
2. Notifies the user when certain user-defined criteria have been met. This function must prompt the user to access a certain query or report and/or deliver it automatically to the user in the form of an e-mail or Intranet posting;
3. Provides detailed alert systems to notify managers of emerging trends, detection of excessive costs, and achievement of goals;
4. Provides the ability to terminate runaway queries;
5. Provides the capability to version reports and queries;
6. Provides a method to perform impact analysis due to proposed changes
7. Performs load balancing;
8. Allows for query optimization;
9. Provides the ability to index user created tables (parameters) in user libraries to drive queries;
10. Provides space that data warehouse users can use to exchange useful queries and reports that can be modified and used by other data warehouse analysts; and
11. Provides an interactive, adjustable time-out feature for inactivity where the user will be notified and timed-out after a specified period of inactivity based on NYSDOH policies.

### **Architecture**

1. Includes a Web browser-based interface with a seamless integration with the standard ODBC Microsoft Windows operating system environments; and
2. Works efficiently in a Web portal environment.

### **Security**

See Security Requirements in Section XI of this RFP.

## **E.2.2 MDW Data Access Documentation Requirements**

The Contractor must produce MDW Data Access component deliverables detailed in the following document deliverables matrix during the systems development life cycle.



Requirement Type	Component	Document
Technical	Data Access	MDW Project Plan
		MDW Strategy/Approach Document
		MDW Phase Scope Document
		MDW Standards Document
		MDW Detailed Requirements Document
		MDW Detailed Design Document
		MDW Test Plans, Test Scripts, Test Cases, Test Results
		MDW Training Plans, Training Curriculum, Training Manual
		MDW Operations Manual

### E.2.3 MDW Data Access Proposal Requirements

Offerors must meet the following proposal requirements:

#### Web Portal

Describe the strategy and approach that will be used to build and deploy a Web portal that will be used to launch the Data Access, Data Delivery, and Managed Metadata Environment (MME) components. Include all technical components that comprise the proposed solution including all software (COTS and custom-developed) and hardware. Discuss the solution in terms of its degree of integration, flexibility, scalability, extensibility, supportability, maintainability, affinity and relationship with other proposed components.

#### Business Intelligence (BI) (Query and Reporting), Decision Support System (DSS), Executive Information Management System (EIS) and Dashboards

Describe the strategy and approach that will be used to implement the data access component of the MDW. Include all technical components that comprise the proposed solution including all software and hardware. Discuss the solution in terms of its degree of integration, flexibility, scalability, extensibility, supportability/maintainability, and affinity/relationship with other proposed components. Detail the proposed solution by describing how the following will be accomplished:

1. Reporting and Querying Functions;
2. Business Intelligence Functions;
3. Decision Support Functions;
4. Executive Information Management Functions;
5. Dashboarding Capabilities;
6. Metadata Capture, Display, Import, Export Functions;
7. Security; and
8. Administrative Functions.

### F. MDW DATA DELIVERY REQUIREMENTS

## ***F.1 COMPONENT DESCRIPTION***

The data delivery component is the mechanism that distributes MDW maintained data in a secure fashion to requestors in a variety of formats. This component will allow the scheduled extraction and delivery of data from the MDW.

The current eMedNY Data Warehouse serves as a distribution vehicle for Medicaid claim fact and supporting master file dimensional data to a number of subscribers. In some cases, the data warehouse “pushes” data to other data marts, data warehouses and analytical systems. In some cases, subscribers “pull” data from the data warehouse. See the Offerors’ Library for a listing of external data mart feeds to be created and supported in the proposed solution, as described in this data delivery section.

In addition to the required feeds to the externally controlled data marts, NYSDOH needs the capability to allow a designated set of “power” users to extract large volumes of data. Although NYSDOH currently supports a number of planned extracts, it cannot keep up with the requests from users for periodic or scheduled delivery of large sets of data. The data delivery solution must additionally contain the functionality needed to request, schedule, create, store, publish, and administer these data extracts. NYSDOH desires a data delivery solution that can be used directly by these designated “power” users.

## ***F.2 COMPONENT REQUIREMENTS***

Data delivery component requirements will be categorized in the following areas:

1. Data Delivery Content Requirements;
2. Data Delivery Technical Requirements;
3. Data Delivery Documentation Requirements; and
4. Data Delivery Proposal Requirements.

### **F.2.1 MDW Data Delivery Content Requirements**

The Contractor must provide a MDW ETL data acquisition component that meets the following requirements:

#### **MDW Data Content**

All current feeds or extracts to the externally controlled data marts which are itemized in the chart in the Offerors’ Library must be supplied to their current subscribers during Phase 1 at the frequency identified. The current sizes of these data extracts are included in the Offerors’ Library. It is anticipated that the feed formats could change during the lifetime of the contract and would be determined during JAD sessions that are held with NYSDOH and the data subscribers.

### **F.2.2 MDW Data Delivery Technical Requirements**

The Contractor must provide a MDW ETL data delivery component solution that:



1. Provides a uniform Web-based interface to extract large volumes of data maintained in the MDW based on selection criteria submitted (See the Offerors' Library for a listing of required data extracts and associated volumes);
2. Provides an integrated, intuitive, and user friendly Web-based portal interface to request and schedule dataset creation and to monitor status of request;
3. Maintains information concerning the requestor's identity, date/time of request, date/time of initiation of execution, date/time of completion of execution, duration of execution, volume of data extracted (in number of rows and in bytes), acknowledgement of data extraction and receipt of data, data elements requested and selection criteria for extraction;
4. Provides the capability to extract the data in a number of formats (e.g., flat files, .csv and XML);
5. Publishes ("pushes") the data to a final location destination (server or desktop) or to an intermediate location destination (server) where the requestor can then retrieve ("pull") the data;
6. Provides secure access to this data delivery functionality and to the data elements retrieved;
7. Schedules the data extraction based on time (e.g., run now, every week, every Tuesday, etc.) or based on the occurrence of events (e.g., after the weekly MDW refresh);
8. Provides the administrative functions of:
  - a. Deletion/cleanup of extracted datasets;
  - b. Monitoring and control of jobs that contain data extraction requests;
  - c. Creation of automatic alerts sent to operators when errors occur during the process, such as "no acknowledgement of receipt of data" within a reasonable amount of time, balance totals of data sent does not equal data received, etc.; and
  - d. Notifications sent to requestor concerning the details of the extract, such as duration of execution, size of extract, etc.; and
9. Generates administrative reports that will detail and summarize the data delivery requests and executions.

### F.2.3 MDW Data Delivery Documentation Requirements

The Contractor must produce MDW data delivery component deliverables detailed in the following document deliverables matrix during the systems development life cycle.

Requirement Type	Component	Document
Technical	Data Delivery	MDW Project Plan
		MDW Strategy/Approach Document
		MDW Phase Scope Document
		MDW Standards Document
		MDW Detailed Requirements Document



Requirement Type	Component	Document
		MDW Conceptual/Logical/Physical Data Models
		MDW Detailed Design Document
		MDW Test Plans, Test Scripts, Test Cases, Test Results
		MDW Training Plans, Training Curriculum, Training Manual
		MDW Users Guide
		MDW Operations Manual

### F.2.4 MDW Data Delivery Proposal Requirements

Offerors must meet the following proposal requirements:

Describe the strategy and approach that will be used to request, schedule, create, publish/distribute, notify, report, monitor, administer, and secure the data extracts of the proposed data delivery solution. Include all technical components that comprise the proposed solution including all software (both COTS and custom-developed) and hardware. Discuss the solution in terms of its degree of integration, flexibility, scalability, extensibility, supportability/maintainability, and affinity/relationship with other proposed components. Detail the proposed solution by describing how the following functions will be accomplished:

1. Request function;
2. Scheduling function;
3. Creation function;
4. Publish/distribution function;
5. Notification function;
6. Reporting function;
7. Monitoring function;
8. Administrative function; and
9. Security function.

## G. MDW MANAGED METADATA ENVIRONMENT (MME) REQUIREMENTS

### G.1 COMPONENT DESCRIPTION

The Managed Metadata Environment (MME) component of the solution is deemed critical to the success of the MDW. The MDW will generate real value when it is exploited to support business decision-making. Metadata is critical to this exploitation because it tells users and technologists where to find the exact data that they need and helps them understand what it means. Metadata makes it easier to use the MDW by allowing faster turnaround for information requests, which equates to higher productivity and confidence in the data retrieved.

NYSDOH defines this component as the integrated Web-based systems environment that will be used to contain both business and technical descriptions of the data that is stored in the data

warehouse. It will be used by both business and technical users to enhance their understanding of the data and the processes that populate and distribute the data contained in the MDW.

The MME objectives are to:

1. Provide uniformity in the description and sharing of information;
2. Make reliable information available quickly;
3. Increase the visibility of information across the enterprise;
4. Increase accuracy of user analysis of the data;
5. Increase user confidence in the MDW;
6. Reduce new employee training costs;
7. Reduce operational costs by eliminating redundant data;
8. Identify mistakes and problems with source systems;
9. Reduce time to perform change impact analysis; and
10. Shorten development times.

This could be a COTS, custom build or hybrid. The MME repository could be a centralized approach, federated, or hybrid.

Types of metadata include definition (both business and technical definitions), transformation (source to target mappings, business rules, domain values, etc.), and process control (warehouse usage metrics, quality and audit metrics, operational messages, application run-time) metadata. This knowledge base contains information about data, process, and control in the MDW and as such represents a facility for centralized management and control of the MDW. Metadata sources could include software tools, users, documents, spreadsheets, messaging and transactions, Web-sites and third parties.

## ***G.2 COMPONENT REQUIREMENTS***

MME component requirements will be categorized in the following areas:

1. Data Content Requirements;
2. Technical Requirements;
3. Documentation Requirements; and
4. Proposal Requirements.

### **G.2.1 MDW MME Data Content Requirements**

Business metadata is primarily maintained for the benefit of the user. It is descriptive in nature and helps the user community in their understanding of what is contained in the MDW. Technical metadata will mainly be used by the personnel responsible for building and maintaining the MDW. The metadata content does not all need to be integrated into the MME in Phase 1 of this project, but at least needs to exist and be readily available in its native format in Phase 1. See the Offerors' Library for a listing of business and technical metadata for each development phase that needs to exist in the integrated MME.



## G.2.2 MDW MME Technical Requirements

The Contractor must provide a MDW ETL MME data content component solution that:

1. Provides the ability to capture and automatically synchronize metadata from data mappings, ETL tools and processes, data modeling tools, relational database data dictionaries and catalogs, data quality tools, multiple reporting/query tools, data extraction tools, messaging and transactions, static documentation libraries, external (non MDW sources) and application run-time environments in a timely fashion;
2. Provides the ability to extend and/or customize the capabilities to capture metadata from sources not currently defined or anticipated, but discovered and required in later phases of the project;
3. Provides an integrated, intuitive, user friendly Web-based portal interface to view and report the metadata;
4. Provides keyword and attribute based search capabilities to locate the required metadata;
5. Provides a central interface that would be used to manage/maintain the MME;
6. Provides an extraction capability to allow metadata to be exported and distributed in open and non-proprietary formats by users;
7. Provides an automated method to extract business metadata into the proposed BI reporting tool repository;
8. Provides a relational database repository for persistent storage of metadata content (if centralized approach) and for registry (if decentralized approach);
9. Is able to version the metadata content stored;
10. Includes the technical infrastructure to capture, store, and report the various forms of metadata described in the metadata content section and run natively in an open systems environment;
11. Maintains a secure interface that would allow users with varying roles the ability to maintain and/or view the metadata that they are authorized to maintain and/or view;
12. Accommodates up to a terabyte of metadata content; and
13. Accommodate up to twelve-hundred (1200) active users, two-hundred (200) concurrent users and allow for ten (10) percent growth per year in the total number of users and concurrent users.

## G.2.3 MDW MME Documentation Requirements

The Contractor must produce MDW MME component deliverables detailed in the following document deliverables matrix.

Requirement Type	Component	Document
Technical	Metadata	MME Project Plan
		MME Strategy/Approach Document
		MME Phase Scope Document
		MME Standards Document
		MME Detailed Requirements Document
		MME Logical/Physical Data Models
		MME Detailed Design Document
		MME Test Plans, Test Scripts, Test Cases,



Requirement Type	Component	Document
		Test Results
		MME Training Plans, Training Curriculum, Training Manual
		MME Users Guide
		MME Operations Manual

## G.2.4 MDW MME Proposal Requirements

Offerors must meet the following proposal requirements:

Describe the strategy and approach that will be used to capture, store, maintain, version, report, distribute, expand/extend, and secure the metadata content within the MDW. Include all technical components that comprise the proposed solution including all software (both COTS and custom-developed) and hardware. Discuss the solution in terms of its degree of integration, flexibility, scalability, extensibility, supportability/maintainability, and affinity/relationship with other proposed components. Detail the proposed solution by describing how the metadata content will be:

1. Sourced (e.g., ETL repository, data modeling tool, database catalog, etc);
2. Initially captured from the sources;
3. Refreshed from the sources;
4. Integrated;
5. Stored;
6. Maintained;
7. Versioned;
8. Searched, queried, and reported;
9. Extracted and distributed to other system components or users (e.g., query/reporting tools, etc.); and
10. Secured.

## H. MDW DATA MODEL REQUIREMENTS

### H.1 COMPONENT DESCRIPTION

The data model technical component addresses the definition and management of logical and physical data models in support of the MDW, Managed Metadata Environment (MME), and corresponding ETL staging data structures. It contains logical depictions or models of the MDW, MME, and the ETL staging areas that will support the business and technical requirements outlined in this RFP. The physical models relating to the MDW, MME, and corresponding staging areas will also be depicted for each deployment environment (i.e., development, test, production, training, UAT). These models may be transactional or dimensional, depending on their intended use.

## **H.2 COMPONENT REQUIREMENTS**

Data model component requirements will be categorized in the following areas:

1. Data Model Content Requirements;
2. Data Model Technical Requirements;
3. Data Model Documentation Requirements; and
4. Data Model Proposal Requirements.

### **H.2.1 Data Model Content Requirements**

(for all environments – development, test, production, training, UAT)

1. Conceptual/Logical Model for MDW ETL Staging Area;
2. Conceptual/Logical Model for MDW;
3. Conceptual/Logical Model for MME ETL Staging Area;
4. Conceptual/Logical Model for MME;
5. Physical Model for MDW ETL Staging Area (all environments);
6. Physical Model for MDW (all environments);
7. Physical Model for MME ETL Staging Area (all environments); and
8. Physical Model for MME (all environments).

### **H.2.2 MDW Data Model Technical Requirements**

The Contractor must provide a MDW data model component that will be maintained in an open systems modeling tool that has the capability to support:

1. Syntax of proposed relational database management system;
2. Import and export of metadata;
3. Logical and physical data models;
4. Version control of logical and physical models;
5. Forward engineering capabilities;
6. Reverse engineering capabilities;
7. Volumetric calculation capabilities;
8. Comparison capabilities for different logical and physical data model versions;
9. Report generation capabilities; and
10. Capability to enforce object naming standards.



### H.2.3 MDW Data Model Documentation Requirements

The Contractor must produce a MDW data model component deliverables detailed in the following document deliverables matrix during the systems development life cycle.

Requirement Type	Component	Document
Technical	Data Model	Conceptual/Logical Data Model(s) for MDW ETL Staging Area
		Conceptual/Logical Data Model(s) for MDW
		Conceptual/Logical Data Model(s) for MME ETL Staging Area
		Conceptual/Logical Data Model(s) for MME
		Physical Data Model(s) for MDW ETL Staging (all environments)
		Physical Data Model(s) for MDW (all environments)
		Physical Data Model(s) for MDW (all environments)
		Physical Data Model(s) for MME (all environments)

### H.2.4 MDW Data Model Proposal Requirements

Offerors must meet the following proposal requirements:

Describe the data modeling tool that will be used to model the conceptual, logical, and physical MDW staging, MDW, MME staging and MME data structures. Include how the models will be managed and versioned from a single tool and central control point. Discuss the solution in terms of its degree of integration, flexibility, scalability, extensibility, supportability/maintainability, and affinity/relationship with other proposed components. Discuss the degree to which the physical model that is created from the tool can be used without augmenting physical characteristics after the data structure generation scripts are created. Discuss the overall approach to modeling both the MDW and MME.

## I. OHIP DATA MART INFRASTRUCTURE REQUIREMENTS

### I.1 COMPONENT DESCRIPTION

The following section describes the environments, hardware, network, software, and database management system requirements that the Contractor must meet for the OHIP Data Mart in order to be responsive to this RFP.

The OHIP Data Mart must support a number of environments within its solution set. An environment is defined as the infrastructure needed to support a functional need, such as development, testing, etc. Individual components, such as servers, storage arrays, etc. could be used in more than one environment. A list of environments is depicted below:

1. Environments
  - a. Production – Environment used to deploy the integrated OHIP Data Mart production solution;
  - b. Test – Environment used to perform system integration testing for the integrated OHIP Data Mart solution. This environment must mirror production in software stack, be within the same hardware product line, and support one year of data volume in order to perform system integration testing;
  - c. Development – Environment used to develop and unit test all software contained within the OHIP Data Mart solution – this environment can co-exist with the test environment;
  - d. Failover – Environment used to support failover capabilities;
  - e. Backup/Recovery - Environment used to support backup/recovery capabilities; and
  - f. Disaster Recovery- Environment used to support disaster recovery capabilities;
2. Hardware/OS – all hardware including servers, tape devices, storage, etc. and operating system software; and
3. Network – all network hardware and software components.

## ***1.2 COMPONENT REQUIREMENTS***

The OHIP Data Mart Infrastructure component requirements will include the following categories:

1. Technical Requirements
  - Environments
  - Hardware/OS
  - Network
2. Documentation Requirements
3. Proposal Requirements

### **1.2.1 OHIP Data Mart Infrastructure Technical Requirements**

The Contractor must provide an OHIP Data Mart infrastructure that meets the following requirements:

#### **OHIP Data Mart Infrastructure Environments Component Requirement**

1. General

- a. The Contractor must implement and support the following deployment and support environments: Production, Test, Development, Failover, Backup/Recovery, and Disaster Recovery;
  - b. The Contractor must follow the State's guidelines and constraints for information technology architecture as documented in P04-001 Principles Governing The New York State Information Technology Enterprise Architecture and (<http://www.oft.state.ny.us/policy/index.htm>); and
  - c. The Contractor must follow the State's strategic information architecture plans as documented in P04-001 Principles Governing the New York State Information Technology Enterprise Architecture (<http://www.oft.state.ny.us/policy/index.htm>);
2. Production – The Contractor must provide a production environment to deploy the OHIP Data Mart production solution;
  3. Test – The Contractor must provide a test environment to perform system integration testing for the OHIP Data Mart;
  4. Development – The Contractor must provide a development environment to develop and unit test all software contained within the OHIP Data Mart solution;
  5. Failover – The Contractor must provide a failover environment to support business continuity failover capabilities;
  6. Backup/Recovery - The Contractor must provide a backup/recovery environment to support business continuity backup/recovery capabilities; and
  7. Disaster Recovery - The Contractor must provide a disaster recovery environment to support business continuity disaster recovery capabilities.

### **OHIP Data Mart Infrastructure Hardware/OS Component**

1. The Contractor must provide pre-installation evaluation and preparation of the site for the selected hardware, including electrical, cabling, location at data center, and other physical needs of the system;
2. The Contractor must coordinate the delivery, installation, and repair of hardware;
3. Storage of data must take place on an open storage platform;
4. Processing of data must take place on an open server platform;
5. Hardware servers and storage must support the processor, memory, I/O subsystem bandwidth and storage;
6. Both server and storage hardware must support a minimal high availability capability. (see Section VII Service Level Agreement Requirements for related SLAs);
7. Hardware (servers and storage) and operating systems must support a highly variable workload (i.e., routinely exhibits “peaks” or “spikes” due to warehouse loading and query-intensive processing);
8. Component hardware (processor/operating system) supporting the data acquisition platform must include a proven record of efficiency for computationally intensive operations (MIPS or SPECint benchmarks). Specifically, the data acquisition hardware platform must efficiently support a small number of threads running serially intensive applications;
9. Component hardware (processor/operating system) platform supporting the OHIP Data Mart database structures must support a large number of parallel threads, which are less computationally intensive, and more I/O and memory intensive;

10. Bandwidth between data acquisition and OHIP Data Mart database servers must be enough to support fast refreshes of the OHIP Data Mart database, with minimal disruption (see Section VII Service Level Agreement Requirements for system availability windows);
11. Hardware and operating system must support and be certified with the current software stack used in the OHIP Data Mart (see Section II Current New York State MDW and OHIP Data Mart Architecture);
12. Hardware and operating system must replace the current Web portal environment used in the OHIP Data Mart (see Section II Current New York State MDW and OHIP Data Mart Architecture);
13. Hardware and operating system must support the current software stack used in the OHIP Data Mart (see Section II Current New York State MDW and OHIP Data Mart Architecture); and
14. All hardware proposed must be new equipment that has not been previously used.

### **OHIP Data Mart Infrastructure Network Component**

1. The Contractor must install, configure, enhance, and maintain all hardware, software and provide services for the Contractor's LAN up to the point of connection to NYSDOH's WAN/LAN;
2. The Contractor must install and maintain data lines for any required access to the NYSDOH network from the Contractor's project site. These lines will terminate at the point of demarcation on the NYSDOH network to be determined by the NYSDOH network services staff;
3. The Contractor must provide back-up network connectivity at both the primary and alternate sites with the capacity to support the system and its components;
4. The Contractor must provide a dedicated POTS line at each facility for dial-up access into the network from Albany, New York;
5. The Contractor must allow the State staff access into the facilities;
6. The network for the OHIP Data Mart must, upon implementation, be able to support as many as twelve-hundred (1200) users, with an estimated two-hundred (200) users accessing the system concurrently. The network also must be able to allow for ten (10) percent growth per year in the total number of users and concurrent users;
7. The Contractor must establish agreements with telecommunications network vendors to install secure data lines to the Contractor's data center;
8. The Contractor must provide and maintain all server, network, switches, hardware, racks for mounting hardware, power cabling inside of the racks, keyboard, video and mouse (KVM) switches and/or terminal servers for access to server consoles, monitors for KVM switches, applications/Web pages/ secure sockets layer devices to support https, encrypted network connections, and/or secure sockets layer requirements within the OHIP Data Mart hardware, software network solution;
9. All network hardware and software specifications proposed must be compliant with New York State Office of Cyber Security and Critical Infrastructure Coordination, Cyber Security Policy P03-002, New York State Information Technology Policies, Standards and Guidelines (<http://www.cscic.state.ny.us/lib/policies>);
10. The Contractor must submit to the NYSDOH, prior to installation, plans for all connections to the OHIP Data Mart network. The Contractor must monitor network



- availability, throughput, bandwidth and response time and correct congestion and broken connectivity between users and the OHIP Data Mart LAN whenever a disconnection occurs within the Contractor’s domain;
11. NYSDOH or any third-party authorized by NYSDOH must be able to directly access over the network, without Contractor intervention, any NYSDOH equipment located in the Contractor’s data center;
  12. The Contractor and NYSDOH staff must have remote access capability through the NYSNET to access the OHIP Data Mart production, test, and development environments;
  13. The Contractor must put in place a firewall between its private network and the connection to the State’s network;
  14. The Contractor must assign and configure addresses to support the ever-changing PC and printer environments;
  15. The Contractor must develop software as needed to support new telecommunications features, configurations, and devices;
  16. The Contractor must provide operations staff to assist with correcting problems associated with telecommunications hardware or software; and
  17. Contractor must test and troubleshoot interfaces with contractors or vendors for information exchange.

**I.2.2 OHIP Data Mart Infrastructure Documentation Requirements**

The Contractor must produce OHIP Data Mart infrastructure component deliverables detailed in the following document deliverables matrix during the systems development life cycle.

<b>Requirement Type</b>	<b>Component</b>	<b>Document</b>
Technical	OHIP Data Mart Infrastructure	OHIP Data Mart Project Plan
		OHIP Data Mart Strategy/Approach Document
		OHIP Data Mart Standards Document
		OHIP Data Mart Detailed Requirements Document
		OHIP Data Mart Technical Architecture/Specifications Document
		OHIP Data Mart Detailed Design Document
		OHIP Data Mart Operations Manual

### I.2.3 OHIP Data Mart Infrastructure Proposal Requirements

Offerors must meet the following proposal requirements:

1. Describe the proposed technology solution for the OHIP Data Mart with integrated technology blueprint diagram(s) and associated narrative text that fully documents the solution. The integrated technology blueprint must contain an overview summary of all hardware, operating system, network components used in the solution;
2. Describe the detailed technology solution by identifying and describing the following components for each of the deployment and support environments described in Section I.1, above:
  - a. Environment
    - Describe each environment included in Section I.1, above, by including the hardware, software, network components and
    - Provide specifications for all environments using the form provided in Attachment O Environment Profile;
  - b. Hardware/OS (servers, storage, backup devices, etc.)
    - Describe the hardware specifications in your solution;
    - Describe the software stack (e.g., operating systems, file systems, RDBMS, tools, applications) that the hardware supports in your proposed solution;
    - Provide specifications for all hardware using the form provided in Attachment S Hardware Profile;
    - Describe the hardware monitoring capabilities;
    - Discuss the hardware in terms of capacity, scalability, and redundancy;
    - Describe the plan to meet the SLAs, if a hardware component fails; and
    - Discuss the hardware in terms of interoperability with other infrastructure components;
  - c. Network
    - Provide a high-level network diagram;
    - Describe all network components (hardware and software), including but not limited to switches, firewalls, VPN devices, security appliances (e.g., proxy servers, monitoring tools, etc.);
    - Provide specifications for all network components using the form provided in Attachment P Network Profile;
    - Describe the flow of network traffic in your architecture;
    - Describe the network monitoring capabilities within your solution;
    - Describe the plan to meet the SLAs, if a network component fails;
    - Discuss the network in terms of capacity, scalability, and redundancy; and
    - Discuss the network in terms of interoperability with other infrastructure components.

## **J. OHIP DATA MART BUSINESS CONTINUITY REQUIREMENTS**

### ***J.1 COMPONENT DESCRIPTION***

The OHIP Data Mart Business Continuity Component includes three major areas:

1. Backup/Recovery;
2. Failover; and
3. Disaster Recovery.

Backups are secondary copies of primary information. They provide short-term protection of data to ensure business continuity, are generated at a point-in-time and typically in a periodic automated fashion. Backups are executed to provide a point-in-time copy of information to protect critical business processes. The goal of the backup/recovery solution is data security through redundancy plus ease in restoring data in the case of failure or corruption.

Failover refers to the process and infrastructure required to switch from production to a full-service alternate environment due to a disruption due to daily issues, such as failed disk or server, bad communications line, etc.

Disaster recovery refers to any major disruption, such as a flooded building, fire, or earthquake disrupting an entire installation. Plans, procedures, and infrastructure need to be established to recover from a major disaster and resume daily operations with minimal downtime.

### ***J.2 COMPONENT REQUIREMENTS***

OHIP Data Mart Business Continuity component requirements will be categorized in the following areas:

1. Technical Requirements
  - Backup/Recovery;
  - Failover; and
  - Disaster Recovery;
2. Documentation Requirements; and
3. Proposal Requirements.

#### **J.2.1 OHIP Data Mart Business Continuity Technical Requirements**

The Contractor must provide an OHIP Data Mart business continuity component that meets the following requirements:

## **OHIP Data Mart Business Continuity - Backup/Recovery Requirements**

1. The Contractor must backup all data files residing in the multiple environments. These backups must be executed in such a way that any data set can be restored from the backup medium within ten (10) hours of the discovery and notification that a restoration is needed. On a weekly basis, in accordance with SLAs described in Section VII Service Level Agreement Requirements, the Contractor will backup all databases and other data and store the backups at a secure off-site location;
2. The backup/recovery component must provide a high capacity backup and recovery infrastructure for all required component data within the data acquisition, data access, data delivery and metadata components. Secure backups will include, but are not limited to, the following datasets:
  - a. Database Data (all databases in solution set);
  - b. Files (all formats);
  - c. Operating System Software;
  - d. RDBMS Software;
  - e. Documentation (e.g., user manuals, operations/systems documentation, policies/procedures);
  - f. Program code (source, executable); and
  - g. User libraries of reports, queries, etc.;
3. The frequency, speed, and flexibility must provide capacity to meet NYSDOH warehouse service levels;
4. All back-up copies must be stored in an approved back-up storage location for five (5) years. The Contractor will be responsible for the cost associated with the back-up storage process and back-up storage location;
5. An on-site copy of backups must be maintained at the OHIP Data Mart computer facilities for a period of seven (7) calendar days. These back-up copies will be used to address non-disaster data recovery without the need to retrieve the back-up copy from the back-up storage facility;
6. An automated scheduling system for running the back-up processes for all environments must be developed and maintained;
7. The process to verify that back-up and restoration processes were run appropriately must be developed and maintained. This process will verify that:
  - a. All scheduled back-up procedures have run successfully as scheduled;
  - b. Back-up copies are created in a useable (readable) form and can be used for successful restoration of objects; and
  - c. Back-up copies are stored in the correct location; and
8. In the case of source system- or application-dependent errors that result in invalid data being loaded into the data warehouse, the Contractor must be able to restore these tables utilizing the on-site back-up copies to its state prior to the erroneous load. Restoration of the table/tables must be accomplished within twenty-four (24) hours of the discovery and notification of the error.

## **OHIP Data Mart Business Continuity - Failover Requirements**

1. The OHIP Data Mart failover component must be designed in such a way as to eliminate, to the extent possible, any business outages due to hardware or network malfunctions;
2. The OHIP Data Mart failover component will provide five (5) minute failover capability;
3. Design the capability to switch operations from the production environment to a failover environment on a daily basis to allow the refresh and maintenance of the production environment;
4. The Contractor must design and maintain the capability to switch operations from the production environment to the failover environment in case technical problems incapacitate the production server; and
5. The Contractor must establish, along with NYSDOH, a hierarchy of critical services and infrastructure to determine the order that services must be restored, as part of the Business Continuity Plan.

## **OHIP Data Mart Business Continuity - Disaster Recovery Requirements**

To the extent the primary site cannot be restored in thirty (30) calendar days, the recovery site will be considered the new primary site. All facility, technical, architectural (hardware, software security and network) requirements and applicable service level agreement requirements detailed in RFP Sections VII, VIII and XI will apply within ninety (90) days of the decision to declare the new primary site. Such declaration shall be at the sole discretion of the NYSDOH.

1. The Contractor must propose another computer site at a separate location to be designated as the disaster recovery site;
2. The Contractor must have a Disaster Recovery Plan in place that addresses recovery of data warehouse functions, human resources and the technology infrastructure;.
3. The Contractor must develop and maintain the OHIP Data Mart Disaster Recovery Plan (DRP). The DRP must be available and present at NYSDOH's site. A copy must also be stored at an offsite location approved by NYSDOH;
4. The DRP must provide for the recovery of critical data warehouse services within twenty-four (24) hours of the discovery of the service disruption, the declaration of a disaster or OHIP Data Mart production site becoming unsafe or inoperable. Full OHIP Data Mart functionality must be restored within ten (10) calendar days of the disaster. Critical data warehouse functions are defined as daily ETL refresh cycle, basic data access functions (query and reporting), Web portal and data back-up capabilities;
5. The DRP must address how to deal with possible events including, but not limited to:
  - a. Natural disasters (e.g., earthquake, fire, flood, storms);
  - b. Terrorist acts;
  - c. Power disruptions or power failure;
  - d. Computer software or hardware failures;
  - e. Computer shutdowns due to hackers, viruses, etc, as well as significant compromise/degradation of data warehouse performance;
  - f. Processing shutdowns; and

- g. Labor strife (walkouts, shutdowns);
6. The Contractor must develop, maintain and submit to NYSDOH, in advance, all proposed off-site procedures, locations and protocols for NYSDOH review and approval prior to implementation. These items must be incorporated by the Contractor as components of the DRP;
7. The Contractor must ensure that each aspect of the DRP is detailed as to both Contractor and NYSDOH responsibilities, and must satisfy all requirements for Federal certification;
8. This DRP must be available to State and Federal auditors at all times;
9. The Contractor must modify the DRP, software installation procedures and operational procedures as needed to reflect the changes implemented with the new data sources, if the system changes or any enhancements will impact the disaster recovery capability. Modifications to the DRP must be submitted to NYSDOH for review and approval;
10. The Contractor must provide NYSDOH with up-to-date copies of the DRP in an electronic and printed version on the first business day of each calendar quarter during the term of the contract and after a substantive change to the OHIP Data Mart that would require revision to the DRP. The Contractor must also provide a walk-through of its DRP during the first calendar quarter of each year for the life of the contract;
11. The Contractor must publish the DRP in the metadata repository;
12. The Contractor must maintain or otherwise arrange for a disaster recovery site for its system operations in the event of a disaster that renders the OHIP Data Mart production site inoperable;
13. The Contractor must take all steps necessary to fully recover the data and/or system from the effects of a disaster and to reasonably minimize the recovery period;
14. The Contractor must execute the DRP test to demonstrate the capability of the DRP to restore processing capability for all critical system components at a remote site. The DRP test must be included as a part of Acceptance Testing and be executed no less often than annually after the implementation of Phase 1 of the data warehouse. The test at the remote site must be performed for all input, processing and output procedures functions. Further, the test must include:
  - a. The processing of one weekly ETL cycle and one daily ETL cycle in place at the time of the test and must involve all major OHIP Data Mart functions including data acquisition, data access (Web portal, query, reporting, EIS/DSS capabilities), MME and data delivery components, and must Verify results against the corresponding procedures and production runs conducted at the OHIP Data Mart production site;
  - b. The length of the test will be the amount of time that is necessary to recover from the disaster and provide proof that the recovery has been successfully completed;
  - c. A report summarizing the hot site processing test results must be provided to NYSDOH within thirty (30) calendar days of the completion of the test. This report must include remediation steps taken to resolve any issues discovered during the test; and
  - d. The DRP test must be performed at no additional cost to NYSDOH. In the event the Contractor's test is deemed by NYSDOH to be



unsuccessful, the Contractor must continue to perform the test at its expense until satisfactory results are received and approved by NYSDOH;

15. The Contractor must perform an annual review of the disaster recovery back-up site, procedures for all off-site storage and validation of security procedures. A report of the back-up site review must be submitted within thirty (30) calendar days of the review. NYSDOH reserves the right to inspect the disaster recovery back-up site and procedures at any time with twenty-four (24)-hour notification;
16. If the OHIP Data Mart production site becomes unavailable during the contract period, NYSDOH may require the Contractor to move OHIP Data Mart operations to the disaster recovery site. In this event, the Contractor will not be allowed to return to the original OHIP Data Mart production site without the approval of NYSDOH. NYSDOH approval will depend on the Contractor's ability to demonstrate that the OHIP Data Mart is again fully operational and all connections are available;
17. The Contractor must provide an uninterruptible power source (UPS) at both the primary and alternate sites with the capacity to support the system and its components until normal operations can be restored; and
18. The Contractor must provide back-up network connectivity at both the primary and alternate sites with the capacity to support the system and its components.

### J.2.2 OHIP Data Mart Business Continuity Documentation Requirements

The Contractor must produce OHIP Data Mart Business Continuity component deliverables detailed in the following document deliverables matrix during the systems development life cycle.

Requirement Type	Component	Document
Technical	OHIP Data Mart Business Continuity	OHIP Data Mart Project Plan
		OHIP Data Mart Strategy/Approach Document
		OHIP Data Mart Phase Scope Document (for each phase)
		OHIP Data Mart Standards Document
		OHIP Data Mart Detailed Requirements Document
		OHIP Data Mart Detailed Design Document
		OHIP Data Mart Business Continuity Plans <ul style="list-style-type: none"> <li>o Failover</li> </ul>



		<ul style="list-style-type: none"> <li>○ Backup/Recovery</li> <li>○ Disaster Recovery</li> </ul>
		OHIP Data Mart Operations Manual(s)

**J.2.3 OHIP Data Mart Business Continuity Proposal Requirements**

Offerors must meet the following proposal requirements:

**OHIP Data Mart Business Continuity - Backup/Recovery Proposal Requirements**

1. Describe the approach to data backup and data recovery. The offeror must discuss the following points:
  - a. Appropriate storage media for back-up copies;
  - b. Retention approach for on-site back-up copies and off-site back-up copies;
  - c. Back-up and recovery software tools and utilities used;
  - d. Off-site storage location for back-up data copies; and
  - e. Backup/Recovery Process.

**OHIP Data Mart Business Continuity - Failover Proposal Requirements**

1. Describe how the proposed production configuration(s) will ensure failover and redundancy to meet the system availability requirements outlined in Section VII Service Level Agreement Requirements in an event such as power shutdown or power interruption, failure in the telecommunications equipment, hardware failure (processor, disk storage, memory, I/O subsystem), etc.;
2. Describe the redundant or failover strategies associated with all storage devices;
3. Describe the redundant or failover strategies with all network hardware; and
4. Describe the redundant or failover strategies with all databases.

**OHIP Data Mart Business Continuity - Disaster Recovery Proposal Requirements**

1. Describe in detail how the proposed solution will provide for the recovery of critical data warehouse services within twenty-four (24) hours of the discovery of the service disruption, the declaration of a disaster or OHIP Data Mart production site becoming unsafe or inoperable. Critical OHIP Data Mart functions are defined as daily data acquisition refresh cycle, basic data access functions (Web portal, query, reporting) and data back-up capabilities;
2. Describe how full OHIP Data Mart functionality will be restored within ten (10) calendar days of the disaster; and
3. Describe how disaster recovery works from a hardware, software, network, and database perspective.



## VII. SERVICE LEVEL AGREEMENT REQUIREMENTS

### A. OVERVIEW

Service level agreements (SLAs) play an important role in defining and managing the relationship between the Contractor and NYSDOH management for the MDW and OHIP Data Mart. SLAs define NYSDOH’s service requirements and its expectations as to how the Contractor will meet these requirements. A successfully implemented service level management discipline ensures that both information systems function smoothly while fulfilling the users’ business intelligence needs.

Within this section the following areas and their associated SLAs are discussed:

1. System Availability;
2. Performance;
3. Staffing;
4. Data Quality;
5. Problem Management;
6. Business Continuity; and
7. Help Desk Responsiveness.

### B. SYSTEM AVAILABILITY

The MDW and OHIP Data Mart have become an increasingly important resource meeting many of the business intelligence needs of NYSDOH, other State agencies, local departments of social services (LDSSs) and the New York City Human Resources Administration (NYCHRA). The continued growth of the MDW and OHIP Data Mart, including the addition of new data from eMedNY and other external data sources, will increase its importance in coming years and increase the need for continuous system availability.

System availability is a critical factor for the continued success of the MDW and OHIP Data Mart. MDW and OHIP Data Mart users require that both systems be available to their fullest extent to support their business intelligence needs.

**Exhibit VII-1: System Availability Schedule by Environment**

<b>Production MDW Availability Schedule</b>		
<b>Requirements</b>	<b>Description</b>	<b>Specifications</b>
Hours for User Access	The hours that the environment needs to be operational and available to its users.	<p><b><u>User Access Hours:</u></b></p> <p>12 a.m. to 11:59 p.m. Eastern Time (ET) Monday through Sunday including State Holidays.</p> <p>System Availability Requirement one-hundred (100) percent exclusive of the time to switch over to the failover environment</p>



**Production MDW Availability Schedule**

Requirements	Description	Specifications
		in the event of a production environment failure which is capped at five (5) minutes per occurrence.
Refresh and Maintenance Window	<p>The hours that the environment will be available to the Contractor for:</p> <p><u>Data Refresh</u>: Time reserved for all ETL activities.</p> <p><u>System Maintenance</u>: Time available to the Contractor to perform hardware and software maintenance.</p> <p>During the Refresh and Maintenance Window the MDW system will not be available for on line usage. All queries and reports may be canceled at the start of the Refresh and Maintenance Window.</p>	<p><b><u>Refresh and Maintenance Window</u></b>:</p> <p>1 a.m. to 6 a.m. (ET) Monday through Friday, Saturday, Sunday and State holidays.</p>

**Failover MDW Availability Schedule**

Requirements	Description	Specifications
Hours of Availability	The hours that the environment needs to be operational and available as a failover in the event of a problem with the production environment.	<p>12 a.m. to 11:59 p.m. Eastern Time (ET) Monday through Sunday including State Holidays.</p> <p>System Availability Requirement one-hundred (100) percent exclusive of the time to switch over to the failover environment in the event of a production environment failure which is capped at five (5) minutes per occurrence.</p>
Refresh and Maintenance Window	<p>The hours that the server will be available to the Contractor for:</p> <p><u>Data Refresh</u>: Time reserved for all ETL activities.</p> <p><u>System Maintenance</u>: Time available to the Contractor to perform hardware and software</p>	<p><b><u>Refresh and Maintenance Window</u></b>:</p> <p>1 a.m. to 6 a.m. (ET) Monday through Friday, Saturday, Sunday and State holidays.</p>



**Failover MDW Availability Schedule**

Requirements	Description	Specifications
	maintenance	

**Development and Test MDW Availability Schedule**

Requirements	Description	Specifications
Hours for Online Access	The hours that the system needs to be operational and available to Contractor and NYSDOH staff for System Change development and testing.	<p><b><u>Online Hours:</u></b></p> <p>6 a.m. to 1 a.m. Eastern Time (ET) Monday through Friday.</p> <p>6 a.m. to 6 p.m. (ET) Saturday, Sunday and State holidays.</p> <p>System Availability Requirement ninety (90) percent.</p>
<u>Refresh and Maintenance Window:</u>	<p>The hours that the server will be available to the Contractor for:</p> <p><u>Data Refresh:</u> Time reserved for all ETL activities.</p> <p><u>System Maintenance:</u> Time available to the Contractor to perform hardware and software maintenance.</p> <p>During the Refresh and Maintenance Window the MDW system will not be available for on line usage. All queries and reports may be canceled at the start of the Refresh and Maintenance Window.</p>	<p><b><u>Refresh and maintenance Window:</u></b></p> <p>1 a.m. to 6 a.m. (ET) Monday through Friday.</p> <p>6 p.m. to 6 a.m. (ET) Saturday, Sunday and State holidays.</p>



Production OHIP Data Mart Availability Schedule		
Requirements	Requirements	Specifications
Hours of Availability	The hours that the environment needs to be operational and available to its users and to NYSDOH staff for data refreshes.	<p><b><u>Hours of Availability:</u></b></p> <p>12 a.m. to 11:59 p.m. Eastern Time (ET) Monday through Sunday including State Holidays.</p> <p>System Availability Requirement one-hundred (100) percent exclusive of the time to switch over to the failover environment in the event of a production environment failure which is capped at five (5) minutes per occurrence.</p>
System Maintenance Window	System Maintenance Window	<p><b><u>System Maintenance Window:</u></b></p> <p>NYSDOH will work with the Contractor to schedule hardware and system software maintenance to be performed by the Contractor (which excludes all database and application software).</p>

Failover OHIP Data Mart Availability Schedule		
Requirements	Requirements	Specifications
Hours of Availability	The hours that the environment needs to be operational and available as a failover in the event of a problem with the production environment.	<p><b><u>Hours of Availability:</u></b></p> <p>12 a.m. to 11:59 p.m. Eastern Time (ET) Monday through Sunday including State Holidays.</p> <p>System Availability Requirement one-hundred (100) percent exclusive of the time to switch over to the failover environment in the event of a production environment failure which is capped at five (5) minutes per occurrence.</p>
System Maintenance Window	System Maintenance Window	<p><b><u>System Maintenance Window:</u></b></p> <p>NYSDOH will work with the Contractor to schedule hardware and system software maintenance to be performed by the Contractor. This excludes maintenance of all database and application software which is performed by NYSDOH staff.</p>



Development/Test OHIP Data Mart Availability Schedule		
Requirements	Description	Specifications
Hours for Online Access	The hours that the system needs to be operational and available to NYSDOH staff for development and testing.	<p><b>Online Hours:</b></p> <p>6 a.m. to 1 p.m. Eastern Time (ET) Monday through Friday.</p> <p>6 a.m. to 6 p.m. (ET) Saturday, Sunday and State holidays.</p> <p>System Availability Requirement ninety (90) percent.</p>
<u>Refresh and Maintenance Window:</u>	<p>The hours that the server will be available to the Contractor for:</p> <p><u>System Maintenance:</u> Time available to the Contractor to perform hardware and software maintenance.</p> <p>During the Refresh and Maintenance Window the MDW system will not be available for on line usage. All queries and reports may be canceled at the start of the Refresh and Maintenance Window.</p>	<p><b>Refresh and maintenance Window:</b></p> <p>1 a.m. to 6 a.m. (ET) Monday through Friday.</p> <p>6 p.m. to 6 a.m. (ET) Saturday, Sunday and State holidays.</p>

Other Availability Requirements		
Requirements	Description	Specifications
Contractor Network Availability	Hours that network connectivity to all environments at the Contractor's Primary Computer Facility and Disaster Recovery Site must be available from the State network demarcation point and also the Contractor's primary facility as described in Section VIII Facility Requirements.	<p><b>Network Availability:</b></p> <p>12 a.m. to 11:59 p.m. Eastern Time (ET) Monday through Sunday including State Holidays.</p> <p>Network availability required: one-hundred (100) percent.</p>
Help Desk Availability	Defines the hours that the Contractor will have resources available support the MDW users.	<p><b>Help Desk Support Hours:</b></p> <p>Help desk availability on 24 X 7, Monday through Sunday and official State holidays.</p>

1. The Contractor must calculate system availability for each calendar month;
2. NYSDOH, at its sole discretion, may assess the Contractor penalties of up to five (5) percent of the fixed monthly administrative fee for a failure to meet system availability requirements; and

3. NYSDOH and Contractor will meet on a regular basis to review the availability schedule and associated service level agreements. NYSDOH will consider adjusting these requirements due to extenuating circumstances and as needed as determined by NYSDOH.

## **C. PERFORMANCE**

### ***C.1 DATA ACCESS***

Data warehouse performance requires a balance between the need for fast service in processing queries and reports versus the flexibility for ad hoc queries. There is a challenge in determining the query performance since not all queries are equal in complexity, number of tables joined, or number of rows accessed.

The Contractor will not be held responsible for the performance of the OHIP Data Mart queries and reports. Since the database design and tuning is the responsibility of NYSDOH, NYSDOH assumes responsibility for OHIP Data Mart performance unrelated to hardware, system software and the Contractor network. However, the Contractor will be held responsible for any performance issues resulting from hardware, system software and Contractor network problems that have rendered the OHIP Data Mart as unuseable and therefore unavailable.

The Contractor will only be held responsible for the following performance requirements as they apply to the MDW:

1. NYSDOH will establish a number of benchmark queries during the DDI period and, with assistance from the Contractor, will develop these queries to be used to measure query performance in the MDW. These queries will be based on a mix of common queries from the existing eMedNY Data Warehouse historical query patterns. These patterns will be reviewed and altered by the Contractor on an annual basis, as deemed appropriate by NYSDOH. Prior to the implementation of the MDW, the benchmark queries will be executed in the MDW test environment to set baseline benchmark times. Each of the queries will meet the following criteria:
  - a. Address multiple subject areas within the data warehouse;
  - b. Reflect the type of commonly executed queries used by the data warehouse user community; and
  - c. Access the claims table and/or recipient eligibility tables;
2. The benchmark queries will be scheduled to run twice daily in the production MDW environment during normal business hours, once during peak usage hours and once during low usage hours;
3. No allowance will be made for degraded performance due to the addition of data, production system changes, or the addition of MDW users;
4. NYSDOH reserves the right to review and update/modify benchmarks as needed to reflect changes in the MDW environment as the data warehouse matures; and
5. NYSDOH, at its sole discretion, may assess the Contractor a penalty of up one (1) percent of the fixed monthly administrative fee per each occurrence in a quarter in which ten (10) percent or more of the benchmark query run times exceed NYSDOH benchmark performance requirements. NYSDOH will establish appropriate benchmark queries which represent normal operational business requirements as determined by NYSDOH.



**C.2 DATA ACQUISITION/DATA DELIVERY**

The ETL processes for the data warehouse include the extraction, validation, cleansing, transformation and loading of source data into the MDW, subsequent population of the internal analytical data marts, and creation of data feeds for the external data marts. These processes must be performed within the Production MDW’s Refresh and Maintenance window described in Exhibit VII-1 System Availability by Environment. The Contractor will be responsible for providing to NYSDOH regular operational statistics to include the duration of the various ETL steps performed within the Refresh and Maintenance Window. This information will be used by NYSDOH to monitor the performance of the ETL processes. Section VII.B Service Level Agreement Requirements System Availability, above, provides the detail on the potential penalties incurred by the Contractor for ETL processes that exceed the Production MDW’s Refresh and Maintenance Window.

**D. STAFFING**

Successful operation of the MDW relies on having sufficiently trained staff correctly allocated to support Phases 1-3, the Operations Phase and System Change Management tasks and activities. NYSDOH realizes the important role of staffing the MDW and has identified the following staffing areas to be addressed by SLAs.

**Exhibit VII-2: Staffing Service Levels**

<b>Staffing</b>		
<b>Requirement</b>	<b>Description</b>	<b>Specification</b>
Training/Experience	Data warehousing is an area that relies on specialized skill sets and experience of its practitioners for success. When assigning resources to staff data warehouse positions, the Contractor must provide resources that meet minimal staffing requirements for the applicable position as established by NYSDOH.	See the Section IV.C Project Management Staffing Requirements for each data warehouse position.
Staffing Levels	Priorities shift within the data warehouse between the many functions staffed within the system. It is important that as these shifts occur, there are not disruptions of services to any data warehouse functions by falling below minimum staffing requirements.	The following data warehouse phases must meet staffing levels stated in the Contractor’s Project Staffing Requirements Plan: Phases 1 – 3, Operations and System Change Management tasks and activities.

1. NYSDOH may assess the Contractor, at NYSDOH’s sole discretion, a penalty of \$1,000 a day for each staff position allocated to support the implementation or operation of the MDW that was re-assigned, without NYSDOH approval, to the New York State MMIS project if the contractor is also awarded that contract;
2. The Contractor must meet the minimum staffing levels as stated in the Project Staff Requirements Plan for each calendar month;
3. The Contractor must submit a monthly staffing report to NYSDOH listing actual levels versus proposed levels in the Project Staff Requirements Plan;



4. NYSDOH reserves the right to audit the Contractor’s actual staffing levels versus the levels in the Project Staff Requirements Plan and assess an additional penalty of one (1) percent of the fixed monthly administrative fee when this reporting is found to be inaccurate;
5. The Contractor must provide a monthly summary of staffing by position each month for review by NYSDOH to be used to determine that minimum monthly staffing levels have been met;
6. The Contractor must provide a yearly summary of staff continuing education to NYSDOH to be used in determining that the yearly continuing education requirement has been met;
7. NYSDOH will reduce the fixed monthly administrative fee to the Contractor for each day a key or core staff position is vacant during each calendar month, or part thereof, based on the daily rates appropriate to the key or core staff positions and the contract year as provided in Attachment N Pricing Schedules. NYSDOH may assess, at its sole discretion, an additional penalty of one (1) percent of the fixed monthly administrative fee each month each staff position is vacant; and
8. When a vacant key or core staff position is not filled within thirty (30) calendar days, NYSDOH will reduce payment to the Contractor by the daily fixed rate price for each day and staff position that falls below the minimum staffing level for that position during the calendar month and, at its sole discretion, may assess the Contractor a penalty of up to one (1) percent of the fixed monthly administrative fee for each additional day the position remains vacated.

**E. DATA QUALITY**

The credibility of the MDW is linked directly to the quality of its data. Failure to maintain a high level of data quality within the data warehouse undermines its credibility, causing a loss of confidence in the data warehouse by the user. The following SLAs address NYSDOH’s requirement to maintain and improve the quality of data in the data warehouse.

1. Data Defect: A data defect occurs when a data element does not conform to business and data validation rules.
2. Data Defect Percentage: Data defect percentage is calculated at the data element level, record/row level. Example: There are 1,000 rows of claims data during the quarter. The date field is a mandatory field but is not populated in 72 rows during the quarter. Percentage of data errors for the quarter = 72 / 1,000. Percentage of data errors = 7.2 percent. Percentage of valid rows for the quarter = 92.8 percent.

**Exhibit VII-3: Data Quality Service Levels**

<b>Data Quality</b>		
<b>Requirement</b>	<b>Description</b>	<b>Specification</b>
Data Quality Communications	The Contractor must notify appropriate NYSDOH staff when a data quality issue has been discovered or the Contractor is notified of a data issue by NYSDOH or another third party, describing the nature of the issue and the warehouse columns and tables impacted and the extent of the errors.	The Contractor is required to appropriate NYSDOH staff notify via the NYSDOH formal notification process for each occurrence of a data quality defect within twenty-four (24) hours of discovery of occurrence or within twenty-four (24) hours of notification to the Contractor of the occurrence.



<b>Data Quality</b>		
Requirement	Description	Specification
	At the direction of NYSDOH, the Contractor must notify affected users in accordance with procedures outlined in the Communication Plan.	The Contractor must notify affected users within twenty-four (24) hours.
Data Quality Audit	On a quarterly basis, the MDW tables will be assessed by an automated process to identify any existing data quality issues to determine what percentage of data elements is defect-free.	<p><b><u>Data Quality Audit Score:</u></b></p> <p>Operations Year 1: Requirement, 98 percent defect-free per quarter.</p> <p>Operations Year 2: Requirement, 98 percent defect-free per quarter.</p> <p>Operations Year 3: Requirement, 99 percent defect-free per quarter.</p> <p>Operations Year 4: Requirement, 99 percent defect-free per quarter.</p> <p>Operations Year 5 and beyond: Requirement, 99 percent defect-free per quarter.</p>

1. NYSDOH, at its sole discretion, may assess the Contractor a penalty of five (5) percent of the fixed monthly administrative fee per each failure to provide notification of a data quality defect as defined in the Data Quality Communications SLA; and
2. NYSDOH may assess the Contractor, at its sole discretion, a penalty of five (5) percent of the fixed monthly administrative fee per each occurrence for each quarter that the data warehouse fails to meet the data defect percentage quality audit requirement for the applicable year as defined above.

**F. PROBLEM MANAGEMENT**

Problem management focuses on NYSDOH’s expectations for the Contractor’s response to problems that occur with the normal operations and functions of the MDW. Problem management is driven by the level or severity assigned to each problem.

Resolution of the problems classified below is deemed to be part of the operational responsibilities of the Contractor for which it is paid through the fixed monthly administrative fee. Other than the fixed monthly administrative fee, the Contractor shall receive no additional remuneration from the State for the resolution of the problems set forth in this section.

All problems will be classified into the following severity levels:



**Exhibit VII-4: Problem Classification**

<b>Problem Classification</b>			
<b>Problem Severity Level</b>	<b>Description</b>	<b>Definitions</b>	<b>Requirement</b>
Priority 1	Catastrophic	<p>The ability to conduct analysis or service the customer has stopped, or there are data integrity problems.</p> <p>Examples: Server down, network down, database down, application down, etc.</p>	<ul style="list-style-type: none"> <li>• The Contractor must pursue problem resolution on a 24/7 basis until resolved;</li> <li>• The Contractor project manager must serve as the contact point for communications with designated NYSDOH staff; and</li> <li>• The Contractor project manager will provide a status update to the designated NYSDOH staff on an hourly basis.</li> </ul>
Priority 2	Severe	<p>Service is seriously degraded but can continue its operation in production via a workaround or incremental resource for a short period of time before analysis stops. A problem also will be considered severe if a commonly used feature often generates application errors, causes the software to freeze, locks up the computer on which the software is running, or otherwise routinely does not work as intended. Classification of a problem as severe rather than catastrophic assumes NYSDOH still can conduct business with the software. As with the catastrophic classification, the severe classification assumes there is no existing patch or acceptable workaround procedure for the problem.</p> <p>Examples: Extremely slow system performance, a piece of application functionality is down or produces erroneous results.</p>	<ul style="list-style-type: none"> <li>• The Contractor must pursue problem resolution from 6 a.m. until midnight daily until the problem is resolved;</li> <li>• The Contractor project manager must serve as the contact point for communications with the designated NYSDOH staff; and</li> <li>• The Contractor project manager will provide a status update to the designated NYSDOH staff once every two (2) hours.</li> </ul>
Priority 3	Major	<p>Service is lost by a single user or small number of users, affecting significant business functionality for that user or group of users. This will normally be addressed to</p>	<ul style="list-style-type: none"> <li>• The Contractor must pursue problem resolution continually during regular NYSDOH business hours until the problem is resolved;</li> </ul>



Problem Classification			
Problem Severity Level	Description	Definitions	Requirement
		problems effecting less than ten (10) percent of the user community. For problems or incidents where a workaround can be developed with a small amount of incremental resources or where there is an existing patch or acceptable workaround procedure for the problem.	<ul style="list-style-type: none"> <li>The Contractor project manager must serve as the contact point for communications with the designated NYSDOH staff; and</li> <li>The Contractor project manager will provide a status update to the designated NYSDOH staff once every four (4) hours.</li> </ul>
Priority 4	Ordinary	The underlying problem is a question on end use or configuration of the software. It also may be classified as ordinary when the problem does not materially restrict NYSDOH use of the software in its production environment, such as when a feature or combination of features generates minor or rare errors. Also, if any problem that otherwise should be classified as severe or major can be solved either by a known workaround or an existing patch, the problem may be treated as ordinary.	<ul style="list-style-type: none"> <li>The Contractor must pursue problem resolution continually during regular NYSDOH business hours until the problem is resolved; and</li> <li>The Contractor project manager will provide a written summary and resolution to the designated NYSDOH staff when the problem is resolved.</li> </ul>
Priority 5	Requests	Any call from single users or site groups that are requesting a new service or some clarification.  Examples: Requesting a new user logon, access to a new view or table, or the meaning of a system message.	<ul style="list-style-type: none"> <li>The Contractor must address the request during regular NYSDOH business hours until the request is completed; and</li> <li>The Contractor project manager will provide a written summary of the request status to the designated NYSDOH staff when the request is implemented through a weekly status report.</li> </ul>

Exhibit VII-5 details the response service levels, including the following components:

1. Acknowledgement: The response from the problem management system documenting that a problem notification has been received and booked;
2. Response Time: The amount of time between problem acknowledgment and when operations personnel begin work on the problem;



3. Resolution Time: The amount of time elapsed from problem notification until the problem has been successfully resolved and the system is restored to full functionality; and
4. Update Time: After the initial response, the update time represents the amount of time elapsed until the next status update with the designated NYSDOH staff.

**Exhibit VII-5: Response Service Levels**

<b>Response Times by Severity Level</b>				
<b>NYSDOH Classification Level</b>	<b>Acknowledgement</b>	<b>Response Time</b>	<b>Resolution Time</b>	<b>Minimum Status Reports</b>
Priority 1	15 minutes	15 minutes	24 hours	Hourly
Priority 2	15 minutes	30 minutes	2 calendar days	Every 2 hours
Priority 3	15 minutes	60 minutes	3 calendar days	Every 4 hours
Priority 4	15 minutes	1 calendar day	4 calendar days	When resolved
Priority 5	15 minutes	1 calendar day	5 calendar days	Weekly status

1. NYSDOH, at its sole discretion, may assess the Contractor a monthly penalty for each late problem acknowledgement of up to one (1) percent of the fixed monthly administrative fee;
2. NYSDOH, at its sole discretion, may assess the Contractor a monthly penalty for each late problem response of up to one (1) percent of the fixed monthly administrative fee;
3. NYSDOH, at its sole discretion, may assess the Contractor a monthly penalty of up to one (1) percent of the fixed monthly administrative fee for each calendar day (close of business (COB) of regular business hours) late in problem resolution; and
4. NYSDOH, at its sole discretion, may assess the Contractor a monthly penalty of up to 1 percent of the fixed monthly administrative fee for each late status update time report.

**G. BUSINESS CONTINUITY**

NYSDOH requires that the Contractor takes all precautions to ensure that for both the MDW and OHIP Data Mart, interruptions in service resulting from a production hardware failure, data corruption or a disaster that renders the Contractor’s primary computer facility unusable are avoided. RFP requirements for failover environments that are equally capable and current as their Production counterparts address business continuity requirements only in part. Therefore the Contractor must develop a strategy, and provide hardware and software solutions, to perform regular backups of all MDW and OHIP Data Mart environments that meet the currency of data requirements as defined in Section VI Technical Requirements. Failure to execute any part of this backup/recovery strategy introduces a great risk and as such NYSDOH, at its sole discretion, may assess the Contractor a penalty of up to five (5) percent of the fixed monthly administrative fee per each occurrence.

The availability schedules and corresponding SLAs for the Production MDW and Production OHIP Data Mart apply to the disaster recovery environment when fulfilling the production role.

## H. SYSTEM CHANGE MANAGEMENT

Payment for work on a system change project by System Change Management staff will be paid upon NYSDOH-approved completion of the project. The exception to this may be a major system enhancement of long duration and significant Contractor resources. In which case, NYSDOH and the Contractor may work together to decompose the body of work into separate projects of tangible benefit to NYSDOH with their own estimated hours and completion date. This will, in essence, provide interim payments to the Contractor.

If the actual hours required to complete a system change project exceeds the estimated hours for that project, as determined at the end of the project analysis phase and as approved by NYSDOH, NYSDOH may assess a penalty equal to the excess hours spent on the project times the highest hourly rate appropriate to the contract year provided in Attachment N Pricing Schedules.

In addition, when the total actual hours for a completed system change project exceeds either the estimated hours or estimated duration determined at the end of the project analysis phase and approved by NYSDOH by more than ten (10) percent, NYSDOH, at its sole discretion, may assess the Contractor an additional penalty as follows:

1. For small projects (estimated at less than 500 hours), a \$500 per day penalty from the estimated completion date to the actual completion date and
2. For all other projects, a \$5,000 per day penalty from the estimated completion date to the actual completion date.

## I. HELP DESK RESPONSIVENESS

Help desk responsiveness is critical for the continued success of the MDW. Therefore, the Contractor must maintain sufficient telephone lines and personnel so that no more than ten (10) percent of incoming calls within a month meet the following conditions:

1. Ring busy;
2. On-hold for more than two (2) minutes; or
3. Call not answered within ten (10) rings.

NYSDOH, at its sole discretion may assess the Contractor a penalty of up to one (1) percent of the fixed monthly administrative fee for failure to meet the help desk responsiveness criteria listed above. Help desk statistics for the eMedNY DW are available in the Offerors' Library.

## Proposal Requirements

**Describe in your proposal how you will meet all requirements described in the Service Level Agreements outlined in this section and address their associated requirements listed in Attachment M.**

## VIII. FACILITY REQUIREMENTS

### A. PROPOSED APPROACH

The Contractor must identify and provide a suitable, primary location where cooperative MDW and Contractor service functions will be performed 24 hours per day, 7 days per week, 365 days per year alongside a variety of permanent and temporary staff including external Subject Matter Experts (SMEs) and Audit and Control Group Staff (A&CGs). Proposals must include co-location specifications which will promote working relationships between all staff and increase efficiencies of the program, minimize overall administrative and program costs and maximize revenue sources such as Manufacturer Drug Rebates, liens/recoveries and other third-party revenue resources as identified by NYSDOH. In addition, proposals must include strategies to rapidly procure adequate space for key and core State and Contractor staff during the initial phases of project development. NYSDOH reserves the right to inspect all facilities at any time.

The primary facility must be located within a 10 (ten) mile radius of the New York State Capitol building, in a location approved by NYSDOH. When selecting the location of the primary and disaster recovery sites, Offerors must take into consideration the Service Level Agreements described in Section VII.

#### **Proposal Requirements**

**Describe in your proposal how you will support the approach to establishing a facility detailed above and address any associated requirements listed in Attachment M.**

### B. CONTRACTOR REQUIREMENTS

#### ***B.1 SPACE AND OFFICE FACILITIES***

To ensure adequate space and office facilities, the Contractor must detail how the following minimum requirements (including any phased approaches) will be met:

1. The Contractor must maintain the primary facility for this contract within a ten (10) mile radius of the New York State Capitol building, in a location approved by NYSDOH;
2. Lease agreements will be subject to NYSDOH will review and approval;
3. NYSDOH will not withhold approval of any facility it deems reasonably adequate;
4. The Contractor is responsible for providing a location with at least nine-thousand eight-hundred (9,800) square feet of secured office space, accessible to authorized NYSDOH staff and other NYSDOH authorized consultant staff twenty-four (24) hours per day, seven (7) days per week without prior notice, admission, escort or other requirements. The Contractor will provide this facility space to house its own staff, NYSDOH, other NYSDOH consultant and contractor staff and to satisfy all phone, installation and other requirements specified in this RFP. It is anticipated that NYSDOH, NYSDOH consultant

and contractor staff will be collocated in this facility. This space is expected to be largely integrated with NYSDOH consultant and contractor staff workspace and used for the following activities:

- a. Sufficient space for on-site control agency audits of front-end, reporting and other Medicaid functions (OSC, Office of Inspector General (OIG), etc.);
  - b. Ongoing inspections and revenue enhancing activities which require coordinated systems integration (OMIG, AG, FMG, DOB, etc.);
  - c. Drug rebate invoicing, accounting, record retention and retrieval (DOH Pharmacy Bureau, etc.);
  - d. Adequate secure storage for physical and electronic historical records;
  - e. OMIG and other Federal audit technical assistance;
  - f. New York City and County information integration teams including temporary or long-term demonstration projects;
  - g. National initiatives such as national HHS asset verification program and Medicare Part D phased-down contribution calculations; and
  - h. Training and resource centers including but not limited to teleconferencing, Web-based and computer-based materials;
5. The following minimum activities must also be performed at the Contractor's primary project site:
- a. Contract administration/housing key personnel;
  - b. Project coordination;
  - c. Joint application design (JAD) and review sessions;
  - d. Demonstrations of design prototypes;
  - e. Discussion and presentations of proposed system design changes;
  - f. Deliverable walk-throughs;
  - g. Technical and user support help desk functions;
  - h. System testing task walk-throughs;
  - i. User acceptance test support;
  - j. Implementation planning;
  - k. Transition management support; and
  - l. Regularly scheduled and NYSDOH-requested training sessions;
6. The Contractor is responsible for all costs related to securing and maintaining the Contractor's primary project site and any other of its locations for the life of the project, including, but not limited to:
- a. Leasehold requirements including improvements;
  - b. Utilities;
  - c. Telephone and data service (lines will terminate at the point of demarcation on the NYSDOH network);
  - d. Office equipment and supplies;
  - e. Janitorial services;
  - f. Security including Physical Security and Access to Medicaid Data Warehouse Facility;

- g. Storage, transportation, shredding and HIPAA compliant disposal of confidential documents and other media;
  - h. Insurance;
  - i. Maintenance of all necessary telecommunications circuits between the NYSDOH offices and the Contractor's facilities;
  - j. Sufficient electrical outlets, electrical power and distribution system;
  - k. Hardware and software acquisition and maintenance; and
  - l. Installation and maintenance of data lines for the PC network.
7. For any project activities approved by NYSDOH to be performed at a location other than at the primary Contractor project site, the Contractor must provide toll-free communications with NYSDOH staff to conduct project work;
8. The Contractor must prepare a Facility Management Plan meeting the requirements of the RFP as part of Project Start-up activities described in Section III.B.2.1 Project Start-up Deliverables and submit it to NYSDOH for review and approval. The plan must include, at a minimum but not limited be to the following details:
  - a. Facility description and build-out plan;
  - b. Floor plan (including square footage);
  - c. Seating chart;
  - d. Electrical specifications;
  - e. Telecommunications specifications;
  - f. Internet specifications;
  - g. Fire and smoke detection specifications;
  - h. NYSDOH and NYSDOH consultant office space;
  - i. Security system for office and operation;
  - j. Parking plans;
  - k. Meeting rooms with a description that includes:
    - i. Number and type of meeting rooms;
    - ii. Seating capacity of each meeting room; and
    - iii. Equipment to be contained in each meeting room;
  - l. Archival facilities description that includes:
    - i. Location;
    - ii. Storage capacity;
    - iii. Fire and smoke detection specifications; and
    - iv. Physical security;
9. The Contractor will equip the training and resource center, including classroom training facilities to accommodate stand-up instructor-led sessions, with effective learning environment and tools:
  - a. Furnish and maintain appropriate hardware, software and telecommunications to support the development, maintenance and presentation of training program(s);
  - b. Use approved training media including, but not limited to, teleconferencing, Web-based and computer-based training; and
  - c. Equip the training facility for an effective learning environment with desks, chairs, computers, tables, whiteboard, flip charts and access to electronic information;

10. The Contractor must provide all equipment and software necessary during the project for its staff to successfully transfer, design, develop, test, implement and maintain the MDW and the OHIP Data Mart;
  
11. The Contractor is responsible for all State and contractor space, equipment, installation and office needs of its primary project site and any other locations associated with the contract including:
  - a. Two (2) offices (approximately 250 square feet each) with digital speaker phones, appropriate size table, desks and chairs, 4'x 6' white boards and appropriate digital presentation screens;
  - b. Four (4) offices (approximately 150 square feet each) with digital speaker phones, appropriate size table, desks and chairs and 4'x 6' white boards;
  - c. Flexible, integrated cubicles (approximately 64 square feet each) designed to accommodate a minimum of twenty-five (25) permanent and/or long-term and fifteen (15) temporary employees. Phones, furniture, layout design and other work-space essentials must be flexible to accommodate additional staff as business enterprise needs require;
  - d. One (1) conference room with table seating for twenty-five (25) staff with overflow seating for a minimum of thirty (30) with audio visual (AV) projection equipment with one (1) work station that has secure connectivity to the MDW, OHIP Data Mart, other NYSDOH-established dependent data marts, the MMIS, the Internet, NYSDOH and Contractor LANs, digital speaker phone with conference call capability, 4'x 6' white boards, one (1) electronic whiteboard;
  - e. One (1) conference room with table seating for ten (10) staff with overflow seating for a minimum of five (5) with one (1) work station that has secure connectivity to the MDW, OHIP Data Mart, other NYSDOH-established dependent data marts, the MMIS, the Internet, NYSDOH and Contractor LANs, digital speaker phone with conference call capability, 4'x 6' white boards and a appropriate digital presentation screen;
  - f. Secure and adequately sized break/lunchroom exclusively accessible to State project and State consultant staff;
  - g. Adequate file cabinet storage, color printer access, digital telephone service, a Xerox Workcenter 4150 or better photocopier and facsimile machine, a local file server with secure storage capability of at least five (5) terabytes and, at a minimum, Microsoft Vista capable workstations (not including the conference room work stations) with at least 21-inch dual widescreen digital flat screen monitors with secure access (including wireless access where appropriate) to the MDW, OHIP Data Mart, MMIS, the Internet, NYSDOH and Contractor LANs; and
  - h. A minimum of forty-seven (47) reserved parking spaces for NYSDOH use, including twenty-five (25) reserved employee, twenty (20) visitors and two (2) handicaps. NYSDOH parking space will be designated and within easy access to the facility mentioned above. Parking (for both the Contractor and NYSDOH) will be designated and reserved. Handicap parking must meet all local, State and Federal requirements for number and design. If parking is mixed with other tenants,

NYSDOH space must be reserved and numbered. This space must be available throughout the entire contract period and at no additional cost to the State;

12. The Contractor must provide courier service to NYSDOH-specified sites with local (Albany) pickup and delivery service two (2) times each business day. One (1) run shall be in the morning and one (1) run in the afternoon;
13. Unless otherwise provided in this RFP, the Contractor is solely responsible for obtaining all permits, approvals, licenses, certifications and similar authorizations required by any local, State or Federal entities for the project and maintaining them throughout the duration of the contract;
14. The Contractor must observe all Occupational Safety and Health Administration (OSHA), environmental impact and fire code requirements, building codes and all handicapped accessibility regulations;
15. The Contractor is responsible for providing and maintaining all necessary telecommunications circuits between NYSDOH offices and the Contractor's facilities;
16. The Contractor must provide enough personal computers for all on premises NYSDOH and NYSDOH contractor staff, including the Independent Verification and Validation (IV&V) vendor staff. Those computers must adhere to Transaction Processing Performance Council (TPC) benchmarks and have suitable, sufficient processor speed, memory and hard drive space to operate and support the current release of Microsoft's operating system and Office Suite software, as well as any additional equipment and software necessary to access and utilize MDW functions as well as associated State systems including the OHIP Data Mart.
17. The Contractor must also replace all office automation equipment for all must on premises NYSDOH and NYSDOH contractor staff, including the Independent Verification and Validation (IV&V) vendor staff, every three (3) years;
18. The Contractor must provide climate-controlled space with proper controls over temperature, humidity, air movement, and air cleanliness for all OHIP Data Mart, MDW and other hardware to avoid computer downtime and malfunctions. Designated contractor employees shall be trained to monitor environmental control procedures, equipment and response procedures in case of emergencies or equipment problems and will monitor environmental conditions;
19. The Contractor must protect equipment from physical risks, including but not limited to power failures and other electrical anomalies. A suitable electrical supply shall be provided that:
  - a. Includes a dependable power supply with an uninterruptible power supply (UPS) and surge protection devices for equipment supporting critical business operation to support orderly shut down or continuous running until operations may be transitioned to the hot site. Equipment must be regularly checked to ensure it has adequate capacity and be tested in accordance with the manufacturer's recommendations;
  - b. Runs back-up generators in the event of a power outage;
  - c. Includes multiple feeds to avoid a single point of failure in the power supply; and
  - d. Includes surge protection devices.
20. The Contractor must conduct ongoing facilities management.

## ***B.2 PHYSICAL SECURITY AND ACCESS TO THE PRIMARY MDW AND OHIP DATA MART FACILITIES***

1. The Contractor must designate one or more persons responsible for the security of each facility;
2. The Contractor must house the facilities in a secure area, protected by a defined security perimeter, with appropriate security barriers and entry controls to include, but not be limited to:
  - a. Physical access;
  - b. Access by visitors shall be recorded and supervised; and
  - c. Access rights regularly reviewed and updated;
3. The Contractor must ensure that communication switches and network components outside the central computer room shall receive the level of physical protection necessary to prevent unauthorized access;
4. Power and telecommunications cabling carrying information or supporting information services must be protected from interception or damage. The Contractor must document what existing power and/or cabling is covered by this standard and must communicate that to NYSDOH for appropriate protective action;
5. The Contractor, or subcontractor with administrative control (i.e., primary physical access) over wiring closets, communications and service rooms, must ensure that they are properly secure to protect information resources and to prevent unauthorized access to sensitive information;
6. The Contractor must obtain prior NYSDOH approval for the use of any equipment by the Contractor, its subcontractors, agents or others working with it to access the MDW or OHIP Data Mart from outside the Contractor's premises. The security provided must be equivalent to that for on-site equipment used for the same purpose, taking into account the risks of working outside the Contractor's premises. This equipment may include, but not be limited to, all forms of personal computers, personal digital assistants or similar devices that are used for home working or are being transported away from the normal work location;
7. Any Contractor devices that will be connected to NYSDOH network must be screened and approved by NYSDOH prior to connection;
8. Regardless of ownership, the use of any equipment outside the Contractor's premises for information processing of State business requires approval by NYSDOH;
9. The Contractor must provide adequate security and safeguards to protect NYSDOH and contract employees from harm and to protect all equipment from unauthorized access and harm. These measures must include, but are not limited to:



- a. Sufficient lighting;
  - b. Night-time and weekend security patrols;
  - c. Security Access Reader Card System with magnetic locks monitored by security personnel, Request to Exit Devices, Sounders, etc., to make the system complete;
  - d. Outside surveillance cameras with recordings archived for seven (7) calendar days;
  - e. Recorded and supervised visitor access; and
  - f. Regular review and updating of access rights to the project site; and
10. The Contractor must develop, implement, maintain and submit to NYSDOH an annual Physical Security Plan for review and approval.

### **Proposal Requirements**

**Describe in your proposal how you will support all facility requirements described above and address any associated requirements listed in Attachment M.**

## **IX. USER SUPPORT REQUIREMENTS**

### **A. HELP DESK**

The Contractor's Help Desk must provide broad and comprehensive MDW user support. This includes, but is not limited to, support for users: retrieving desired data, selectively viewing and presenting data, formatting and saving reports, developing specialized reports, developing alternative ways to group, present, or otherwise enhance the understanding of reports and interpreting query results. The Contractor's Help Desk must respond to user questions, direct problems to the proper resolution entity and provide technical support to users (e.g., interpret query error messages, help with simple query creation, verify system availability, etc.)

The Contractor's Help Desk will not be responsible for providing technical support to OHIP Data Mart users. These users will be directed to the OHIP Data Mart staff for resolution.

Because of the complexity of the data warehouse and the heterogeneous nature of the MDW user community, user support plays an important role in producing a productive business intelligence system. NYSDOH's goal for user support for the MDW is a system that provides a robust automated and documented working environment that reduces users' reliance on the help desk.

The Contractor must use a commercial-off-the-shelf (COTS) product to track, classify and report back to NYSDOH on help desk calls. This product must capture the specific caller data, type of problem encountered and how it was resolved. This product must provide comprehensive reports to NYSDOH on a weekly basis. These reports may be used to identify where the application or user training needs to be improved.

The Contractor will be responsible for providing Help Desk services to all MDW users during the hours of 8 a.m. to 5 p.m. (ET) Monday through Friday. In addition, the Contractor will provide limited Help Desk support (via cell phone coverage), 8 a.m. to 5 p.m. (ET), on Saturdays, Sundays and State holidays, except during scheduled outages as defined in the Service Level Agreements detailed in Section VII Service Level Agreement Requirements. The Contractor Help Desk will respond to all user inquiries within the agreed upon timeframe.

### **Proposal Requirements**

**Describe in your proposal how you will support the Help Desk business function described above and address its associated requirements listed in Attachment M.**

## **X. TESTING REQUIREMENTS**

### **A. OVERVIEW**

Testing will play an integral part in the overall success of the MDW Replacement/OHIP Data Mart Operational Support Project. Although every group within the data warehouse team bears responsibility for testing, the overarching responsibility for testing resides with the Contractor. The Contractor must create and deliver to NYSDOH a comprehensive and thorough testing plan for all phases of the project. Testing plans must be developed for Phases 1 – 3 development and System Change Management tasks and activities.

### **B. TESTING SYSTEMS**

#### ***B.1 OHIP DATA MART TESTING SYSTEM***

The Contractor will not be responsible for supporting OHIP Data Mart systems testing. OHIP Data Mart testing will be conducted by NYSDOH's OHIP Data Mart staff. The Contractor will be responsible for OHIP Data Mart Business Continuity testing as described Section B.3, below.

#### ***B.2 MDW TESTING SYSTEM***

The Contractor is responsible for the MDW testing system requirements. The proposed testing system must:

1. Provide the MDW test system that can be refreshed as requested by NYSDOH. This NYSDOH approval is needed to prevent instances where a refresh may inadvertently wipe out any current testing efforts and results;
2. Provide a test system that mirrors the production system with all current releases, patches and fixes installed for the MDW;
3. Install the same database management tools and utilities for the test system that are installed on the production servers for the MDW;
4. Develop and implement, upon acceptance by NYSDOH, a configuration management system to control the migration of tested hardware and software (system and application) to the production environment;
5. Include access to the UAT test system as an option on the MDW Web portal;
6. Provide access to the MDW test system to allow for NYSDOH review, testing and acceptance;
7. Provide a test system to support the following activities:
  - a. Production problem research and resolution;
  - b. Test area to validate software vendor patches and fixes before promoting in production;
  - c. Test area to validate edits and updates to the following components: Metadata information, user tools and the Web portal;
  - d. System and user acceptance testing;

- e. User area to test new queries and reports prior to execution in production;
  - f. Data conversion to seed the MDW; and
  - g. A one time test of the initial move of the eMedNY ETL process and then going forward with testing of the new MDW ETL process;
8. Provide a MDW test system that addresses the functionality provided by the following functions:
- a. Data Acquisition;
  - b. Data Delivery;
  - c. Data Access;
  - d. Metadata; and
  - e. Business Continuity;
9. Test system must use the same hardware, operating system (OS), and RDBMS that is being used in production. The Test system must also have the same make and model of servers (database, application and ETL) to mirror those that are being used in the production data warehouse environment; and
10. Provide the same database capacity and structure for the test system as is available for the production data warehouse database.

### ***B.3 BUSINESS CONTINUITY TESTING***

The Contractor is responsible for testing both the MDW and OHIP Data Mart business continuity plans. This testing will include:

1. Failover / Fallback functionality for both MDW and OHIP Data Mart. This testing must be scheduled monthly or at the discretion of NYSDOH;
2. Back up / Recovery functionality for both the MDW and OHIP Data Mart. This testing must be scheduled quarterly or at the discretion of NYSDOH; and
3. Business Continuity Plan for both the MDW and OHIP Data Mart. This testing must be scheduled for every two years or at the discretion of NYSDOH.

### **Proposal Requirements**

**Describe in your proposal how you will support the MDW testing for systems and business continuity functions described above and address their associated requirements listed in Attachment M.**

### **C. PHASES 1 – 3 DEVELOPMENT TESTING**

The Contractor must include in its response to this RFP a description of its approach to creating a comprehensive testing plan for Phases 1 – 3 development activities. For the all development activities, a comprehensive testing plan must be in place before technical design is

complete. The Contractor will create test scenarios or use cases before construction including the anticipated outcome for each scenario. When structured data tests are run, the Contractor must present a report on the structured data test to NYSDOH, including the anticipated and actual outcomes. The Contractor must include any scenarios submitted by NYSDOH. All discrepancies must be identified and explained.

The Development Testing plan must incorporate Unit Testing, System Integration Testing, Regression Testing, Volume Testing, Operations Readiness Testing, Parallel Testing, and User Acceptance Testing. NYSDOH will review, modify and approve the testing plan to make sure all NYSDOH concerns are addressed. Prior to NYSDOH approval to begin the Operations Phase, the Contractor must successfully execute the comprehensive Development Testing Plan. The structure of this Development Testing Plan must be followed for the subsequent Operations Phase and System Change Management tasks and activities.

The Contractor must have a reasonable and aggressive retesting plan to deal with situations where initial tests fail. The Contractor is responsible to meet the overall deadlines for this implementation and must include a description of a retest strategy and methodology, including an approach to looping back and restarting the testing process in order to produce the desired results in a timely and accurate fashion.

### ***C.1 UNIT TESTS***

Testing must include bench or unit tests to ensure that changes meet the intended purpose, do not cause unintended consequences (regression testing), and do not cause system errors upon execution of changed programs.

### ***C.2 SYSTEM INTEGRATION TESTS***

Integration testing is required to verify that any proposed changes being tested will be able to successfully interact with other existing system components. This testing must uncover any potential issues with the interfacing between system components.

### ***C.3 REGRESSION TESTS***

Regression testing is required to verify that previous functionality has not been adversely impacted by the changes being tested.

### ***C.4 VOLUME TESTS***

The Contractor must aggressively test production based on estimates of transaction volume supplied by NYSDOH. The Contractor must include a description of its volume testing plan and schedule in response to this RFP.

### ***C.5 OPERATIONS READINESS TESTS***

The Contractor must demonstrate to NYSDOH readiness to initiate operations using the MDW. This testing must include demonstrations, load testing and results, staff readiness testing, and communications testing. The Contractor must include a description of its operations readiness testing strategy, methodology and schedule in response to this RFP.

### ***C.6 PARALLEL TESTS***

The Contractor must plan parallel tests of the data warehouse based on actual converted data that can be compared to current operations of the existing eMedNY Data Warehouse. These must be real tests on actual converted data; therefore, data conversion must be complete through the testing date before parallel testing can begin. NYSDOH requires a minimum of two (2) months parallel testing, ensuring that all functions that are part of the foundation functionality are working properly. The Contractor must include a description of its parallel testing strategy, methodology and schedule in response to this RFP. Parallel testing is a part of the Readiness Testing Period.

### ***C.7 USER ACCEPTANCE TESTS (UAT)***

System acceptance depends on a final, disciplined set of tests by NYSDOH for User Acceptance Testing. The Contractor will draft a design and schedule for User Acceptance Tests early in the development of test plans. The Contractor must describe its approach to User Acceptance Testing in response to this RFP. User Acceptance Testing is a part of the Readiness Testing Period. User Acceptance Testing for individual system components or modules cannot begin until all components of the MDW for the applicable phase are ready for User Acceptance Testing.

### **Proposal Requirements**

**Describe in your proposal how you will support the Development Testing Plan functions described above and address their associated requirements listed in Attachment M.**

## **XI. SECURITY REQUIREMENTS**

### **A. OVERVIEW**

The Contractor must comply fully with all security procedures of NYSDOH, as well as with all applicable State and Federal requirements, in performance of this contract. The Contractor must not, without written authorization from NYSDOH, divulge to third parties any confidential information obtained by the Contractor or its agents, distributors, resellers, subcontractors, officers or employees in the course of performing contract work, including, but not limited to, security procedures, business operations information or commercial proprietary information in the possession of NYSDOH, Protected Health Information (PHI) or other data.

To ensure confidentiality, the Contractor must take appropriate steps as to personnel, agents and subcontractor education in specific security requirements as applied to this contract, explaining its responsibilities in maintaining security, and reviewing all policies, processes and procedures that will be used for this project.

All activity covered by this RFP must be fully secured and protected by satisfactory security arrangements approved by NYSDOH. NYSDOH and the Contractor will establish a joint security management team to accomplish these objectives. The Contractor must treat all information obtained through its performance under the contract as confidential information and will not use any information so obtained in any manner except as necessary for the proper discharge of its obligations and securing of its rights, or as otherwise provided. State or Federal officials, or representatives of these parties as authorized by State or Federal law or regulations, will have access to all confidential information in accordance with the requirements of State and Federal laws and regulations. NYSDOH will have absolute authority to determine if, and when, any other party is allowed to access MDW information. Confidentiality is the concept that data only will be viewable by those who are explicitly permitted to view it.

### **B. GENERAL SECURITY REQUIREMENTS**

#### ***B.1 SECURITY, PRIVACY AND CONFIDENTIALITY PLAN***

The Contractor must develop and use a Security, Privacy and Confidentiality Plan approved by NYSDOH for all projects and all major system enhancements to address potential security issues and the steps that the Contractor has taken to ensure these issues will not compromise the operation of the MDW. The plan must be an overarching plan for all levels of security, including but not limited to:

1. Data Security;
2. Network Security; and
3. Application Security

All provisions of the Security, Privacy and Confidentiality Plan must be compliant with:

1. New York State Office of Cyber Security and Critical Infrastructure Coordination, Cyber Security Policy P03-002, New York State Information Technology Policies, Standards and Guidelines (<http://www.cscic.state.ny.us/lib/policies>);
2. New York State Information Technology Policies, Standards and Guidelines G07-001, Identity and Access Management: Trust Model;
3. National Institute of Standards and Technology SP 800-63 Electronic Authentication Guidance; and
4. The Certification Commission for Healthcare Information Technology Security Criteria for 2007 Certification of Inpatient EHRs.

The Security Privacy and Confidentiality Plan must include a description of:

1. All security tools, hardware and software the Contractor is using and how they integrate to form a comprehensive security architecture; and
2. The approach to monitoring attempted security violations and the actions that will be taken when attempts are made at violating security.

The Contractor must:

1. Deliver an initial Security, Privacy and Confidentiality Plan during the first thirty (30) calendar days of the project for NYSDOH review and approval;
2. Revise the Security, Privacy and Confidentiality Plan annually and submit for NYSDOH review and approval; and
3. Submit an updated Security, Privacy and Confidentiality Plan to NYSDOH for review and approval thirty (30) business days prior to the start of MDW Operations.

## **Proposal Requirements**

**Describe in your proposal how you will support the general security requirements described above and address any associated requirements listed in Attachment M.**

### **C. DATA SECURITY**

Data Security is the concept that data only will be viewable by those who are explicitly permitted to view or receive it. The security model being developed to support the MDW is one that is based upon security access roles and organizational affiliation. A role base access control method is one that groups resources (such as business activities, business functions, screens, etc.) into roles. Employees are then assigned roles based on their need to know information or their need to accomplish a particular business function. A user's organizational affiliation will also determine what data is available to them; for example, an employee of OMH can only access OMH defined data; an employee of Nassau County can only have access to Nassau County data and no data from any other county.

The Contractor must:

1. Support a role based security system that has the flexibility to easily add or delete roles;
2. Provide a solution that will make it easy for Security Administrators to add or remove individuals from established roles;

3. Provide a solution that is able to establish different roles for the metadata database;
4. Provide a solution that will keep a record of activities performed by the users; and
5. Provide a solution that prevents unauthorized access and safeguard the confidentiality of person/consumer data in compliance with State and Federal law, including the Health Insurance Portability and Accountability Act (HIPAA), the New York State Personal Privacy Protection Law, and the data breach provisions of the New York State Technology Law.

## **Proposal Requirements**

**Describe in your proposal how you will support the data security requirements described above and address any associated requirements listed in Attachment M.**

### **D. NETWORK SECURITY**

The Contractor must:

1. Provide a MDW network infrastructure solution that must be self-contained and in its own security perimeter. In securing the perimeter of the Contractor's network, the use of International Computer Security Association (ICSA) compliant firewalls is required. The handoff to NYSDOH, according to the Contractor's best practices, may be a pair of firewalls, routers, load balancers or Ethernet switches;
2. NOT connect to the State's internal computer network without the prior, written consent of the State, which the State will reasonably provide if necessary or appropriate for the Contractor to provide support. As a condition of connecting to the State's computer network, the Contractor must secure its own connected systems in a manner consistent with the State's then-current security policies, which the State will provide to the Contractor on request;
3. Provide Internet security functionality to include the use of firewalls, intrusion detection, https, encrypted network/secure socket layer, and security provisioning protocols such as secure sockets layer, and Internet protocol security (IPSEC);
4. Implement mechanisms to safeguard data integrity and confidentiality of data passing over public networks;
5. Implement appropriate security controls to ensure the integrity and confidentiality of data flowing across the MDW network;
6. Put in place a firewall between its private network and the connection to the State's network;
7. Keep any information passing through its network confidential;
8. Ensure that measures are in place to mitigate any new network security risks created by connecting the MDW network to a third-party network;
9. Establish responsibilities and procedures for remote use, as defined in the New York State Office of Cyber Security and Critical Infrastructure Coordination, Cyber Security Policy P03-002 (<http://www.cscic.state.ny.us/lib/policies>);
10. The Contractor's Network Architecture and all proposed network hardware and software must be compliant with:

- a. New York State Office of Cyber Security and Critical Infrastructure Coordination, Cyber Security Policy P03-002, New York State Information Technology Policies, Standards and Guidelines (<http://www.cscic.state.ny.us/lib/policies>);
  - b. New York State Information Technology Policies, Standards and Guidelines G07-001, *Identity and Access Management: Trust Model*;
  - c. National Institute of Standards and Technology SP 800-63 *Electronic Authentication Guidance*; and
  - d. The Certification Commission for Healthcare Information Technology *Security Criteria for 2007 Certification of Inpatient EHRs*
11. Track user logon and logoffs into the data warehouse system by user identifiers so that a history of valid and non-valid logon requests by user can be available for investigative purposes.

### **D.1 PROPOSAL REQUIREMENTS**

**Describe in your proposal how you will support the network security requirements described above and address any associated requirements listed in Attachment M.**

### **E. APPLICATION SECURITY**

The Contractor's solution must allow for the following:

1. Applying a consistent security policy across all applications;
2. Ensuring that applications are protected;
3. Providing an easy and consistent mechanism for configuring operational rules and security policies;
4. Providing a structure where applications can be developed without needing to understand the specifics of security implementation; and
5. Restricting access based upon the user's role.

### **Proposal Requirements**

**Describe in your proposal how you will support the application security requirements described above and address any associated requirements listed in Attachment M.**

## **XII. PROPOSAL REQUIREMENTS**

### **A. INTRODUCTION**

These instructions prescribe the format and content of the Offeror's Proposal and are designed to facilitate the submission of a proposal that is easy to understand and evaluate. Failure to adhere to these instructions may result in the disqualification of the Proposal.

For the purposes of this section, the terms bidder, offeror and vendor may be used interchangeably and the terms bid, offer or proposal may be used interchangeably.

### **B. PROPOSAL REQUIREMENTS OVERVIEW**

The following sections include requirements that must be met by Offerors in the submission of their Request for Proposal (RFP) responses. Other proposal requirements that are specific to business or other functional areas are identified independently as "Proposal Requirements" in Sections IV – XI. Attachment M Mandatory Requirements Traceability Matrix provides a comprehensive listing of all MDW Replacement/OHIP Data Mart Operational Support Project requirements.

#### ***B.1 GENERAL REQUIREMENTS***

1. By signing the "Bid/No Bid Form" in Attachment B, each bidder attests to its express authority to sign on behalf of this company or other entity and acknowledges and accepts that:
  - a. The RFP and all associated specifications, general and specific appendices, including Appendix A Standard Clauses for NYS Contracts and all schedules and forms included with such documents, as well as subsequently issued and agreed-upon work specifications issued pursuant to this Contract, will become part of any contract entered into, resulting from the RFP. Anything which is not expressly set forth in the above-referenced documents, but which is reasonable to be implied, shall be furnished and provided in the same manner as if specifically expressed.
  - b. Each bidder is under an affirmative duty to be informed by personal examination of the specifications and location of the proposed work and by such other means as it may select, of character, quality, and extent of work, products and services to be performed and the conditions under which the contract is to be executed.
2. The Department of Health will make no allowances or concession to an offeror for any alleged misunderstanding or deception related to quantity, quality, character, location or other conditions.
3. The proposal price must cover the cost of furnishing all of the said services, materials, equipment, and labor to the satisfaction of the Department of Health and the performance of all work set forth in said specifications. Work to be provided by subcontractors must be documented in the RFP response.
4. If the use of subcontractors is proposed, the Proposal must explain how the work of subcontractor's will be managed and controlled.

5. The Department reserves the right to make awards within two-hundred-seventy (270) calendar days after the date of the proposal opening, during which period proposals shall not be withdrawn unless the bidder distinctly states in the bid that acceptance thereof must be made within a shorter specified time.

## ***B.2 EXPERIENCE***

1. The Offeror shall submit evidence to the satisfaction of the Department that it possesses the necessary experience and qualifications to perform the services required including at least the following:
  - a. The Offeror must have a minimum of sixty (60) months of healthcare data analysis experience with Medicaid and/or health and human services organizations, or within other complex healthcare delivery systems such as managed care organizations OR the Offeror must have a minimum of sixty (60) months experience in the maintenance and implementation of a suite of commercial-off-the-shelf (COTS) software products for decision support systems within a healthcare delivery system;
  - b. The Offeror must have been the prime contractor for at least three multi-Terabyte data warehouse contracts that have included system design, development, implementation, maintenance and operations; and
  - c. The base data warehouse software product(s) proposed in response to this RFP must be installed and in productive use, in substantially the configuration proposed, by a paying customer external to the Offeror's organization or its corporate organization, for at least six (6) months prior to the due date for submission of proposals in response to this RFP. The purpose of the productive use requirement is to allow time for major defects to be detected and corrected in the Offeror's software, and to ensure that the proposed base software product has a record of proven use in customer environments prior to installation at the Department.
2. An offeror may be disqualified from receiving awards if such offeror or any subsidiary, affiliate, partner, officer, agent or principal thereof, or anyone in its employ, has previously failed to perform satisfactorily in connection with public bidding or contracts.

## ***B.3 REFERENCES***

1. The Offeror must provide at least three (3) references external to the offeror or subcontractor organizations. The purpose is to provide the Department the ability to verify the claims made in the proposal by the Offeror.
2. Each of the references provided must meet all of the criteria below. The reference criteria are as follows:
  - a. Every reference must be with regard to a project implemented within the past ten (10) years;
  - b. The Offeror must have been the prime contractor for the contract(s) associated with each reference;
  - c. The services provided for each of the references must have included system design, development, implementation, maintenance and operations; and

- d. At least one of the references must be for a healthcare data system or must be for a United States-based governmental (Federal, State or local) client.
3. The Department reserves the right to contact additional references (i.e., those known to the Department as clients of the offeror but not listed by the offeror as a reference).

#### ***B.4 NON-COLLUSIVE BIDDING***

By submission of this proposal, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its/his/her/their knowledge and belief:

1. The prices of this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
2. Unless otherwise required by law, the prices that have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly to any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition; and
3. No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

NOTE: Chapter 675 of the Laws of New York for 1966 provides that every bid made to the State or any public department, agency or official thereof, where competitive bidding is required by statute, rule or regulation, for work or services performed or to be performed or goods sold or to be sold, shall contain the foregoing statement subscribed by the bidder and affirmed by such bidder as true under penalties of perjury.

A bid shall not be considered for award nor shall any award be made where (1), (2) and (3) above have not been complied with; provided however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefore. Where (1), (2) and (3) above have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the State, public department or agency to which the bid is made or its designee, determines that such disclosure was not made for the purpose of restricting competition.

The fact that a bidder has published price lists, rates, or tariffs covering items being procured, has informed prospective customers of proposed or pending publication of new or revised price lists for such items, or has sold the same items to other customers at the same price being bid, does not constitute, without more, a disclosure within the meaning of the above quoted certification.

Any bid made to the State or any public department, agency or official thereof by a corporate bidder for work or services performed or to be performed or goods, sold or to be sold,

where competitive bidding is required by statute, rule or regulation and where such bid contains the certification set forth above shall be deemed to have been authorized by the board of directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation or other legal entity involved in the bid.

### ***B.5 TECHNOLOGY PURCHASES NOTIFICATION POLICY***

For the purposes of this policy, "technology" applies to all services and commodities, voice/data/video and/or any related requirement, major software acquisitions, systems modifications or upgrades, etc., that result in a technical method of achieving a practical purpose or in improvements of productivity. The purchase can be as simple as an order for new or replacement personal computers, or for a consultant to design a new system, or as complex as a major systems improvement or innovation that changes how an agency conducts its business practices; and

Any contract entered into pursuant to an award of this RFP shall contain a provision which extends the terms and conditions of such contract to any other State agency in New York. Incorporation of this RFP into the resulting contract also incorporates this provision in the contract.

### ***B.6 CONFLICTS***

If it becomes apparent that: (1) the specifications conflict, or (2) if the specifications are not clear as to (a) the method of performing any part of the work, or as to (b) the types of materials or equipment necessary, or as to (c) the work required to be done in every such situation, the Contractor shall be deemed to have based its proposal upon performing the work and furnishing materials or equipment in the most inexpensive and efficient manner. If such conflicts and/or ambiguities arise, the Department of Health will furnish the Contractor supplementary information showing the manner in which the work is to be performed and the type or types of material or equipment that shall be used.

### ***B.7 MINORITY AND WOMEN OWNED BUSINESS POLICY STATEMENT***

The New York State Department of Health recognizes the need to take affirmative action to ensure that Minority and Women Owned Business Enterprises are given the opportunity to participate in the performance of the Department of Health's contracting program. This opportunity for full participation in our free enterprise system by traditionally, socially and economically disadvantaged persons is essential to obtain social and economic equality and improve the functioning of the State economy. It is the intention of the New York State Department of Health to fully execute the mandate of Executive Law, Article 15-A and provide Minority and Women Owned Business Enterprises with equal opportunity to bid on contracts awarded by this agency in accordance with the State Finance Law. To implement this affirmative action policy statement, the Contractor agrees to file with the Department of Health within ten (10) days of notice of award, a staffing plan of the anticipated work force to be utilized on this contract or, where required, information on the Contractor's total work force, including apprentices and subcontractor staff,

broken down by specified ethnic background, gender, and Federal occupational categories or other appropriate categories specified by the Department. The form of the staffing plan shall be supplied by the Department.

For purposes of this procurement and resulting Contract, the Department has established a goal of 10% for minority business enterprises (MBE) participation and 10% for women-owned business enterprises (WBE) participation, based on the total dollar value of the contract. As part of its proposal, and utilizing all the forms in Attachment W, the Bidder is expected to document in detail and certify the good-faith efforts it will undertake to solicit the participation of such enterprises to meet these goals, and must provide an explanation acceptable to the Department in the event it cannot meet those goals.

After an award of this contract, the Contractor agrees to submit to the Department a work force utilization report, in a form and manner required by the Department, of the work force actually utilized on this contract, broken down by specified ethnic background, gender and Federal occupational categories or other appropriate categories specified by the Department. An updated version of such report shall be provided annually on the anniversary date of this contract. The Contractor also agrees to submit, as part of its proposal and in updated form throughout the life of the contract, the additional forms provided as Attachment W to this RFP.

Contractor shall attempt to utilize, in good faith, any MWBE identified within its work force utilization report, during the performance of the contract. Requests for a partial or total waiver of established goal requirements may be made at any time during the term of the Contract to the Department, so long as such request is made as soon as possible and prior to the submission of a request for final payment on the contract.

### ***B.8 CERTIFICATION REGARDING DEBARMENT AND SUSPENSION***

Regulations of the Department of Health and Human Services, located at Part 76 of Title 45 of the Code of Federal Regulations (CFR), implement Executive Orders 12549 and 12689 concerning debarment and suspension of participants in Federal programs and activities. Executive Order 12549 provides that, to the extent permitted by law, Executive departments and agencies shall participate in a government-wide system for non procurement debarment and suspension. Executive Order 12689 extends the debarment and suspension policy to procurement activities of the Federal government. A person who is debarred or suspended by a Federal agency is excluded from Federal financial and non-financial assistance and benefits under Federal programs and activities, both directly (primary covered transaction) and indirectly (lower tier covered transactions). Debarment or suspension by one Federal agency has government-wide effect. Pursuant to the above-cited regulations, the New York State Department of Health (as a participant in a primary covered transaction) may not knowingly do business with a person who is debarred, suspended, proposed for debarment, or subject to other government-wide exclusion (including any exclusion from Medicare and State healthcare program participation on or after August 25, 1995), and the Department of Health must require its prospective Contractors, as prospective lower tier participants, to provide the certification in Appendix B to Part 76 of Title 45 CFR, as set forth below:

1. APPENDIX B TO PART 76-CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION-LOWER TIER COVERED TRANSACTIONS
2. Instructions for Certification:
  - a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below;
  - b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment;
  - c. The prospective lower tier participant shall provide immediate written notice to the person to whom this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or had become erroneous by reason of changed circumstances;
  - d. The terms covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded, as used in this clause, have the meaning set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations;
  - e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated;
  - f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions;
  - g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, ineligible, or voluntarily excluded from covered transactions, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the List of parties Excluded from Federal Procurement and Non procurement Programs;
  - h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings; and



- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
3. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transactions.
    - a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department agency; and
    - b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

### C. PROPOSAL SUBMISSION INSTRUCTIONS

A Proposal consists of two distinct parts: (1) the Technical Proposal, and (2) the Price Proposal. The graphic below outlines the format and volume for submission of each part:

	DVD or CD ROM	Original	Copies
Technical Proposal	1 copy in Adobe PDF;  1 copy in MS Word 2003/XP; and  1 copy of all project plans in MS Project 2003/XP.	1 Original Hard Copy	11 Hard Copies
Price Proposal – Pricing Schedules	1 copy in Adobe PDF (complete);  1 MS Office copy consisting of: <ul style="list-style-type: none"> <li>• Narrative in MS Word 2003/XP as needed; and</li> <li>• Worksheets in MS Excel 2003/XP</li> </ul>	1 Original	5 Copies
Price Proposal – Audited Company Financial Statements	N/A	1 Original	N/A



1. The complete proposal must be received by the Department in Albany, New York, no later than the time on the day specified on page i of this RFP and at the address specified in Section XIII.E.1 Administrative Requirements Two-part Proposals of this RFP.
2. It is the bidders' responsibility to see that bids are delivered to the address specified in Section XIII.E.1 Administrative Requirements Two-part Proposals of this RFP prior to the date and time of the bid due date. Late bids, for whatever reason, including delay by the carrier or not being received in the Department's mail room in time for transmission to the address specified in Section XIII.E.1 Administrative Requirements Two-part Proposals of this RFP, will not be considered.
3. All proposal materials shall be printed on 8.5" x 11" white paper (two-sided), be clearly page numbered on the bottom of each page with appropriate header and footer information. A type size of eleven (11) points or larger shall be used. The Technical Proposal materials shall be presented in three-ring binder(s) separate from the sealed Price Proposal and audited Company Financial Statements. The sealed Price Proposal and audited Company Financial Statements shall also be presented in separate three-ring binder(s);
4. The proposal must be as specific as possible in its responses to provide the Department with an adequate understanding of the intent of the proposal;
5. The Department discourages overly lengthy proposals. Therefore, marketing brochures, user manuals or other materials, beyond that sufficient to present a complete and effective proposal, are not desired. Elaborate artwork or expensive paper is not necessary or desired. In order for the Department to evaluate proposals fairly and completely, proposals should follow the format set out below to provide all requested information. The use of tabs to identify sections and/or subsections is required. The Offeror should not repeat information in more than one section of the proposal. If information in one section of the proposal is relevant to a discussion in another section, the Offeror should make specific reference to the other section rather than repeating the information; and
6. Audio and/or videotapes are not allowed. Any submitted audio or videotapes will be ignored by the evaluation team.

Any questions concerning this RFP contract procurement should be directed to the parties listed in page ii of this document.

#### **D. TECHNICAL PROPOSAL CONTENTS**

The Technical Proposal shall consist of the following sections separated by tabs. Documents and responses must be presented in this order:

<b>Tab</b>	<b>Proposal Contents</b>
1	Table of Contents
2	Transmittal Letter
3	Mandatory Requirements
4	Executive Summary and Introduction
5	Services Overview
6	Scope of Work and Project Management Methodology
7	Contractor and Systems Requirements
8	Corporate Organization, Experience, and Qualifications



9	Certifications and Guarantees by the Offeror
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***D.1 TABLE OF CONTENTS (TAB 1)***

A Table of Contents of the Technical Proposal shall be inserted in Tab 1. The Table of Contents will identify all sections (identified here as Tabs), all subsections contained therein, and the corresponding page numbers. The Table of Contents shall include all sections and subsections present under Tabs 1 through 9. The Table of Contents found at the beginning of this RFP provides a representative example of what is expected for the Technical Proposal Table of Contents.

***D.2 TRANSMITTAL LETTER (TAB 2)***

An individual authorized to legally bind the Offeror shall produce a signed Transmittal Letter in Tab 2. A photocopy of the Transmittal Letter shall be included in each copy of the Technical Proposal. Each subcontractor must also produce and sign a Transmittal Letter for inclusion in Tab 2. The Transmittal Letter(s) will be evaluated as part of the screening for Proposal Mandatory Submittal Requirements and shall include:

1. The complete name and address of the company and the name, mailing address, email address, fax number and telephone number for both the authorized signer and the person the Department should contact regarding the proposal;
2. A statement indicating the legal structure of the entity submitting the offer;
3. A statement that the Offeror accepts the contract terms and conditions contained in this RFP including attachments;
4. A statement confirming that the Offeror has received and acknowledged all Department amendments to the RFP, as may be amended;
5. A statement confirming that the Offeror is authorized to do business in New York State;
6. A statement that the Offeror does not qualify its proposal or include any exceptions from the RFP;
7. A statement that the Offeror, as of the date of proposal submission, meets the requirements for vendor responsibility as set forth as Attachment C Vendor Responsibility Questionnaire, of the RFP, and that the Offeror will immediately advise the Department in the event changed circumstances render the Offeror unable to continue to meet those requirements;
8. If a proposal with subcontractors is submitted, the Offeror must provide, in an appendix to the Transmittal Letter, one subcontractor summary for each listed subcontractor that contains the following information:
  - a. Complete name of the subcontractor;
  - b. Complete address of the subcontractor;
  - c. Type of work the subcontractor will be performing;
  - d. Percentage of work the subcontractor will be providing;
  - e. Evidence that the subcontractor is authorized to do business in the State of New York, and is authorized to provide the applicable goods or services in the State of New York;
  - f. A statement that clearly verifies that the subcontractor is committed to render the services required by the contract;

- g. A general description of the scope of work to be performed by the subcontractor; and
  - h. The subcontractor's assertion that it does not discriminate in its employment practices with regards to race, color, religion, age (except as provided by law), sex, marital status, political affiliation, national origin, or handicap.
9. An individual authorized to legally bind the subcontractor must sign that subcontractor's summary document and certify that the information provided is complete and accurate; and
10. A statement that identifies whether or not the entity submitting the proposal as the prime contractor is a joint venture. If it is a joint venture a copy of the joint venture agreement must be included as an appendix to the Transmittal Letter, identifying the principals involved, and their rights and responsibilities regarding performance and payment. All members of the joint venture must meet the requirements set forth above.

### ***D.3 MANDATORY REQUIREMENTS CHECKLIST (TAB 3)***

Tab 3 shall be labeled Mandatory Requirements Checklist and must contain the completed Mandatory Requirements Checklist provided in the RFP as Attachment K Mandatory Requirements Checklist. Upon receipt of Proposals, the Department will use this checklist to confirm that Offerors have produced and submitted proposals according to the Department's specifications.

### ***D.4 EXECUTIVE SUMMARY AND INTRODUCTION (TAB 4)***

Tab 4 shall be labeled Executive Summary and Introduction and must contain a narrative prepared by the Offeror that provides the Department with a collective understanding of the contents of the entire Proposal. The Executive Summary / Introduction should briefly summarize the strengths of the Offeror and the key features of its proposed approach to meet the requirements of the RFP and is limited to twenty-five (25) pages in length (any submitted text beyond this length will be disregarded by evaluators). The Executive Summary shall summarize the Offeror's proposed role as a partner in program operations with the Department and describe the major benefits offered by this proposal.

### ***D.5 SERVICES OVERVIEW (TAB 5)***

Tab 5 shall be labeled Services Overview section and must contain a comprehensive overview of the services that offerors are proposing to provide to the Department. Consistent with the requirements of this RFP, offerors may also reference other added value services and enhancements that are relevant to the Scope of Work for the submitted Proposal.

### ***D.6 SCOPE OF WORK AND PROJECT MANAGEMENT METHODOLOGY (TAB 6)***

Tab 6 shall be labeled Scope of Work and Project Management Methodology. In this section, an Offeror must document its approach to requirements described in Section IV Project Management by responding to each proposal requirement presented in that section. All project requirements are set forth in Attachment M Mandatory Requirements Traceability Matrix.

Additionally, the Department requires that Offerors complete Attachment L Proposal Requirements Cross-Reference Matrix. If the response to a requirement can be found in multiple locations (for example both in a narrative response numerically tied to an RFP section as well as in a separately labeled attachment) that must be clearly identified in the Proposal Requirements Cross Reference as well.

Proposals must be fully responsive to the requirements; however Offerors are given wide latitude in the degree of detail they offer or the extent to which they reveal plans, designs, examples, processes, and procedures. Repeating a requirement statement will be considered non-responsive. Proposals must clearly and prominently identify any requirements that the Offeror cannot satisfy.

### ***D.7 PROPOSAL REQUIREMENTS (TAB 7)***

Tab 7 shall be labeled Proposal Requirements. In this section, Offerors will document their approach to meeting the Business, Technical, Service Level Agreement, Facility, User Support, Testing and Security of the RFP by responding to each requirement set forth in Sections V, VI, VII, VIII, IX, X and XI and Attachment M Mandatory Requirements Traceability Matrix of the RFP.

The Department requires Offerors to use where possible a one-to-one match between the numbering utilized for sections in the RFP and the numbering of their corresponding responses in Tab 7.

Additionally, the Department requests that Offerors complete Attachment L Proposal Requirements Cross-Reference Matrix.

Proposals must be fully responsive to the requirements; however Offerors are given wide latitude in the degree of detail they offer or the extent to which they reveal plans, designs, examples, processes, and procedures. Repeating a requirement statement will be considered non-responsive and may disqualify the Offeror.

### ***D.8 CORPORATE ORGANIZATION, EXPERIENCE, AND QUALIFICATIONS (TAB 8)***

Tab 8 shall be labeled Corporate Organization, Experience, and Qualifications.

#### **D.8.1 Corporate Organization**

In this section the Offeror must provide a corporate organization chart of its company that is submitted with the proposal. If the company is a subsidiary of a parent company, the organization chart should be that of the subsidiary company. The chart should display the company's structure and the organizational placement of the oversight for the MDW Replacement and OHIP Data Mart Operational Support project. The Offeror must identify the level of the person who will be responsible for signing the contract and indicate the signing person's relationship with the company. The Proposal must document the legal structure of the company,

including the date established and the state in which the company is registered, licensed, and incorporated, as applicable:

1. Provide evidence that the offeror is authorized to do business, and to provide the proposed good or service, in the State of New York;
2. Describe the history of the company;
3. Provide a corporate organizational chart;
4. Describe the executive, management and technical staff assigned to this project. Include the number of staff, their roles on this project, their expertise and experience in providing the services described in this RFP, and their tenure with the company;
5. Identify any contractual terminations within the past five (5) years; and
6. Describe other contracts or projects currently undertaken by the Offeror.

### **D.8.2 Offeror's Experience Levels & Qualifications**

The Offeror must discuss all relevant Corporate Experience, including large healthcare programs (e.g., Medicare, Medicaid, commercial insurance) contracts, within the last ten (10) years. As appropriate, Offerors should also list prime Contractors or subcontractors to the Offeror.

The Offeror must provide a minimum of three (3) project summaries that meet the requirements of Section XII.B.2 Proposal Requirements Experience, above. Offerors must provide the following items in the Project Summaries:

1. Title of the project;
2. Name of customer's organization;
3. Customer reference, title, and current telephone number;
4. Start and end dates of the original contract;
5. Total contract value (to the Offeror's organization; e.g., if Offeror was a subcontractor, specify subcontract dollar amount.);
6. Average staff hours in FTEs during operations; and
7. Brief description of scope of work (stress relevance to this contract).

### **D.8.3 Letters of Reference**

The Offeror must provide Letters of Reference from at least three (3) previous customers and include a contact person, email address, and telephone and fax numbers for each reference. Letters of reference must meet the criteria outlined in Section IV Project Management Staffing Plan.

### **D.8.4 Minority and Women Owned Business Enterprise (M/WBE) Plan**

The Offeror must provide a Minority and Women Owned Business Enterprise Plan in accordance with the provisions of section B.7, above.

## ***D.9 CERTIFICATIONS AND GUARANTEES BY THE OFFEROR (TAB 9)***

### **New York State Department of Health Bid/No Bid Form**

The Offeror must complete the Bid/No Bid Form included as Attachment B Bid/No Bid Form. The Bid/No Bid Form must be filled out in its entirety. The responsible corporate officer for contract negotiation, to the extent authorized by this RFP, must be listed. This document must be signed by the responsible corporate officer.

### **Vendor Responsibility Questionnaire**

New York State Procurement Law requires that State agencies award contracts only to responsible vendors. Attachment C Vendor Responsibility Questionnaire contains the "Vendor Responsibility Questionnaire" that all offerors must complete and submit with the proposal.

### **State Taxation and Finance, Contractor Certification Form ST-220-CA and Form ST-220-TD**

The Offeror must complete and submit directly to the New York State Taxation and Finance, Contractor Certification Form ST-220-TD (Attachment G of this RFP). The Offeror must complete and submit with its proposal the Contractor Certification to Covered Agency Form ST-220-CA (Attachment F of this RFP) that attests to the submission of the Form ST-220-TD.

### **State Consultant Services Form A and Form B**

Chapter 10 of the Laws of 2006 amended certain sections of State Finance Law and Civil Service Law to require disclosure of information regarding contracts for consulting services in New York State.

The winning offeror for this procurement must complete a "State Consultant Services Form A, Contractor's Planned Employment from Contract Start Date through End of Contract Term" (Attachment D of this RFP) in order to be eligible for a contract.

Winning offeror must also agree to complete a "State Consultant Services Contractor's Annual Employment Report Form B" (Attachment E of this RFP) for each State fiscal year included in the resulting contract. This report must be submitted annually to the Department of Health, the Office of the State Comptroller, and Department of Civil Service. Please also see Section XII.B.9 Proposal Requirements Provision Related to Consultant Disclosure Legislation of this RFP.

## **E. PRICE PROPOSAL CONTENTS**

The Price Proposal must be separately bound and sealed and should contain the following tabs:

1. Table of Contents;
2. Pricing Schedules; and
3. Company Financials.

Additionally, a separate sealed envelope containing the required Company Financial Information must be included as part of the Price Proposal.

At the time of the award, the Department reserves the right to modify the payment schedule proposed by the offeror to achieve a reasonably equitable deliverable-based distribution of all phases.

### ***E.1 TABLE OF CONTENTS (TAB 1)***

A Table of Contents of the Price Proposal must be inserted at Tab 1. The Table of Contents will identify all sections (identified herein by Tabs), subsections contained therein, and corresponding page numbers. The Table of Contents shall include all sections and subsections present under Tabs 1 through 3. The Table of Contents found at the beginning of this RFP provides a representative example of what is expected for the Price Proposal Table of Contents.

### ***E.2 PRICING SCHEDULES (TAB 2)***

Tab 2 shall contain the pricing schedules described in the following subsections. The pricing schedules are included in Attachment N Pricing Schedules.

#### **Pricing Schedule A - Total Evaluated Price**

Pricing Schedule A summarizes the price for all Contractor activities during the base contract period, including the design and implementation of the Replacement MDW and five (5) years of operations and system maintenance and change management phase activities. The Total Evaluated Price on this schedule should equal the sum of all other pricing schedule totals. The total proposed Phases 1 through 3 pricing **may not exceed 40% of the total contract cost.**

#### **Pricing Schedule B - Implementation Price**

Pricing Schedules B-1 through B-3 include all planning, design, construction, testing, and implementation costs for the MDW expressed as a fixed price that will be paid by each milestone and within each implementation phase identified in Section IV Project Management.

#### **Pricing Schedule C - Operations Price - Fixed Administrative Fee**

In Pricing Schedules C.1 through C.5, the Offeror must specify a fixed annual price to operate the MDW for each year of the Operations Phase. This price will represent all fixed Contractor prices. It shall include all infrastructure costs, including facility lease, hardware, system software licenses, costs associated with fixed levels of personnel, and any other such costs. The Offeror is required to show the components of the fixed annual price.

In Pricing Schedules C.1.a through C.5.a, the Offeror must specify the daily rate per full time equivalent (FTE) for each staffing role required to support the MDW for each year of the Operations Phase.

#### **Pricing Schedule D - System Change Management Task and Activity Staff Price**

In Pricing Schedules D.1 through D.5, the Offeror must specify the hourly rate for each of the system maintenance and change management phase labor categories specified and the number

of system maintenance and change management phase staff required for each year of the Operations Phase.

The rates proposed for each contract year shall remain fixed for the term of the contract. These rates shall also be used to develop price quotations for temporary use of additional resources or for permanent increases in the size of the system maintenance and change management phase staff component.

### ***E.3 COMPANY FINANCIALS CONTENT (TAB 3)***

The Offeror must submit the following documents to be used in the evaluation of financial viability:

1. Audited financial statements (annual reports) for the last three (3) years;
2. A minimum of three (3) financial references (e.g., letters from creditors, letters from banking institutions, Dunn & Bradstreet reports);
3. New York State Department of State Registration; and
4. Certificate of Incorporation, together with any and all amendments thereto; Partnership Agreement; or equivalent business organizational documents, as applicable.

The Company Financial Information must be submitted in a separate sealed envelope enclosed within Tab 3 and will be opened only for the Proposal that is selected as the apparent successful Proposal. After the contract has been signed or the Department elects not to award a contract, the sealed Corporate Financial Information will be returned unopened to unsuccessful Offerors.

## **F. EVALUATION PROCESS**

The State of New York will perform a fair and comprehensive evaluation of the proposals received in response to this RFP in accordance with the New York State procurement law, guidelines and procedures, as well as policies and procedures approved by the Department. This section of this RFP describes the evaluation process that will be used to determine which Proposal provides the best value to the Department.

The evaluation process will ensure the selection of the best overall solution for the New York State Medicaid program on a “best value” basis. Scoring will be split 75% for the Technical Evaluation and 25% for the Cost Evaluation. The evaluation process will include the following components:

1. Establish Evaluation and Selection Committees;
2. Evaluate Proposal Mandatory Requirements;
3. Evaluate and Score Technical Proposals;
4. Evaluate and Score Price Proposals;
5. Technical and Price Proposals Combined;
6. Proposal Ranking and Selection Committee Recommendation; and
7. NYSDOH Contract Award Decision.

NYSDOH reserves the right to reject any and all proposals.

### ***F.1 MANDATORY REQUIREMENTS AND CHECKLISTS FOR PROPOSALS***

The purpose of this phase is to determine if each Technical Proposal is sufficiently responsive to the RFP to permit its complete evaluation. As part of its initial screening, all Proposals submitted in response to this RFP will be assessed by the Department to assure that the mandatory requirements for proposals have been satisfied. Any one mandatory requirement that is not met may cause a proposal to be declared non-responsive. The Department does, however, reserve the right to waive minor irregularities or request written clarification and correction.

When Price Proposals are opened, each proposal will be reviewed for compliance with the mandatory submission criteria contained in Attachment K Mandatory Requirements Checklist of this RFP. Any proposal that fails one (1) or more of the criteria may cause the Department to reject the proposal. The Department may require clarification from offerors for purposes of assuring a full understanding of responsiveness to the proposal requirements.

### ***F.2 SCORING OF OFFEROR TECHNICAL PROPOSALS (75%)***

#### **Evaluation Criteria and Assigned Point Totals**

The evaluation of the offeror's technical approach will be based on the responses provided in the proposal. The highest scoring proposal will receive the full percentage. Information from the Price Proposal or the evaluation of the Price Proposal will not be available to the Technical Evaluation Committee during its evaluation.

Detailed evaluation criteria will not be disclosed to bidders.

The technical raw scores will be normalized as follows:

$N = (A/B) * 75\%$  where:  
A is the score being evaluated;  
B is the highest technical score; and  
N is the technical score.

### ***F.3 SCORING OF OFFEROR PRICE PROPOSALS (25%)***

A separate committee will review and score the Price Proposals from all Offerors meeting the mandatory requirements.

The Price Proposal will be evaluated based on the sum of Phases 1 through 3 Pricing, the complete Operations Price over the life of the contract and the estimated System Change Management phase pricing over the life of the contract based on the figures proposed in Attachment N Pricing Schedules. The total proposed Phase 1 through 3 pricing may not exceed 40% of the total contract cost.

### **Calculation of Scores**

The Price Proposal Evaluation Committee will award up to the full percentage available to the bidder with the lowest overall cost.

The financial raw scores will be normalized as follows:

$$C = (A/B)*25\%$$

A is Total Price of lowest Price Proposal;

B is Total Price of Price Proposal being scored; and,

C is the Price score.

### ***F.4 TECHNICAL AND PRICE PROPOSALS COMBINED***

Technical and Price Proposal percentage will be combined to establish a score for each proposal. The proposals will then be ranked based on each Offeror's combined score. The ranking will be in descending order, with higher combined scores ranking above lower combined scores.

### ***F.5 NOTICE OF INTENT TO AWARD***

A Notice of Intent to Award for the contract will be sent by mail to all Offerors who have submitted a timely Proposal. The Notice of Intent to Award is subject to execution of a written contract, approval of the New York State Attorney General and the New York State Office of the State Comptroller, as well as Federal approval. Accordingly, the Notice will not constitute the formation of a contract between the Department and the apparent successful Offeror.

### ***F.6 ACCEPTANCE PERIOD***

If the apparent successful Offeror fails to timely negotiate and execute a contract, the Department (in its sole discretion) may revoke the award and award the contract to the next highest ranked Offeror, or may withdraw the RFP.

The Department further reserves the right to cancel the award at any time prior to execution of a written contract or receiving Federal approval, whichever is later.

### ***F.7 FEDERAL APPROVALS***

The contract award is subject to Federal approval. The Department will make every effort to obtain timely Federal approval. The Department reserves the right to not award a contract if Federal approval is not obtained or the Department does not receive enhanced Federal Financial Participation (FFP).

### **XIII. ADMINISTRATIVE REQUIREMENTS**

#### **A. ISSUING AGENCY**

This Request for Proposal (RFP) is a solicitation issued by the New York State Department of Health (NYSDOH). NYSDOH is responsible for the requirements specified herein and for the evaluation of all proposals.

#### **B. LEGAL BASIS**

The procurement process for this RFP will be conducted in accordance with the Federal regulations contained in 42 CFR 434.10, 45 CFR 95.613, and 45 CFR 74, as well as applicable procurement policies and procedures established by the State of New York, including relevant provisions of the New York State Finance Law.

#### **C. INQUIRIES**

All inquiries regarding this proposal must be submitted to the designated contacts listed on page ii of this document.

#### **D. RFP ISSUANCE AND AMENDMENTS**

Prior to its release, this RFP was reviewed and approved by the Office of the State Comptroller, the Office for Technology, the Department of Health, and Region II of the Centers for Medicaid and Medicare Services. Its contents represent the best available statement of the requirements and needs of involved stakeholders.

NYSDOH reserves the right to amend the RFP at any time prior to the proposal due date by issuing written addenda. All written addenda to the RFP, along with the RFP itself, will become part of the contract.

Both the RFP and any subsequent amendments will be posted on the NYSDOH Web site.

##### ***D.1 QUESTIONS AND ANSWERS***

Prospective Offerors may submit questions concerning this RFP, in writing, to the permissible subject matter contact identified on page ii.

Questions received by NYSDOH after the final due date specified on page i may not be answered.

All questions pertaining to this RFP must be submitted in writing and should cite the RFP section and page number. NYSDOH will accept written questions received by fax or by electronic mail or delivered by the U.S. Postal Service, a commercial service, and/or in person by the date specified on page i. Requests for materials and information not in the Offerors' Library should be sent as written questions to the contact specified on page ii.

Following receipt of the submitted questions, NYSDOH staff will prepare written responses to all questions received. These responses will be made available on CD-ROM by the date listed on page ii. To the extent practicable, questions will remain as written. However, NYSDOH may consolidate and paraphrase questions received. NYSDOH's intention is to complete all responses within approximately two (2) weeks of the deadline for receipt of written questions.

Offerors should clearly understand that the only official answer or position of NYSDOH would be those stated in writing and provided to all prospective Offerors. Verbal responses provided during the Offerors' Conference (or at any other time) do not represent the official answer or position of NYSDOH and NYSDOH shall not be bound in any way by any such verbal answer.

## ***D.2 LETTER OF INTENT***

A letter of intent template is included as Attachment U to this RFP. Submission of a Letter of Intent is not mandatory; however, to assist NYSDOH in better managing the procurement process, submission of this form is requested. Please submit the completed and signed Letter of Intent and submit to the Permissible Subject Matter Contact listed on Page ii of this RFP.

## ***D.3 OFFERORS' LIBRARY***

NYSDOH will provide an Offerors' Library. These materials will be made available on CD-ROM, upon Offeror request. Library documents are intended only as a resource. They provide a window into current system functionality and NYSDOH operational needs. However, as the RFP seeks a replacement data warehouse, the technical performance of the current data warehouse should not be viewed as controlling over the technical requirements of the RFP.

If any materials, documentation, information, or data are discovered to be inaccurate or incomplete, such inaccuracy or incompleteness shall not constitute a basis for challenging the contract award, contract rejection, or renegotiation of any payment amount or rate either prior to or after contract award. All statistical information contained in the Offerors' Library represents the best information available to NYSDOH with regard to the current data warehouse at the time of RFP preparation.

Requirements specified in this RFP shall take precedence over any documentation in the Offerors' Library if a conflict exists.

#### ***D.4 OFFERORS' CONFERENCE***

An Offerors' Conference will be held by NYSDOH on the date and time specified on page i. While attendance at the Offeror's Conference is not required, it is strongly encouraged. The conference will be held in the following location:

Empire State Plaza Convention Center

Meeting Room 1

The Offerors' Conference is intended to be an interactive exchange of information, and appropriate NYSDOH staff will attend to clarify RFP content. NYSDOH will attempt to provide tentative answers to all written questions received prior to the Offerors' Conference.

***Offerors are reminded that the official answers and positions of NYSDOH will be those stated in writing and posted to the procurement Web site.*** Any verbal responses given at the Offerors' Conference are not binding on NYSDOH.

Offerors are responsible for checking for updates to information on the procurement Web site as the Offerors' Conference date; time and location are subject to change. Offerors should also visit <http://www.health.state.ny.us> regularly to see if there are any changes. Those Offerors wishing to receive notification of changes by mail must send a written request to the permissible subject matter contact identified on Page ii of this RFP.

#### ***D.5 USE OF FAX MACHINES AND ELECTRONIC MAIL***

NYSDOH will use the procurement Web site as the primary means of communication with Offerors. However, where appropriate, NYSDOH may use facsimile (fax) machines and electronic mail (e-mail) to transmit information (e.g., questions, RFP addenda) to prospective Offerors. However, NYSDOH may also use the U.S. Postal Service to send originals.

Prospective Offerors assume sole responsibility for ensuring that NYSDOH actually receives (complete and in a timely manner) written questions, proposals, requests for copies of the RFP, and other inquiries (whether transmitted by fax, e-mail, the U.S. Postal Service, a commercial delivery service, or delivered in person) from the prospective Offeror. NYSDOH will not accept faxed or emailed proposals.

#### ***D.6 AGREEMENT TO ACCEPT AND ABIDE BY THE REQUEST FOR PROPOSAL AND REQUEST FOR PROPOSAL PROCESS***

By submitting a proposal in response to this RFP, each Offeror (including the Offeror's parent organization and proposed subcontractors, agents, and employees of the Offeror) agrees and consents, without reservation, substitution, or limitation, to the terms of the RFP, including the requirements and procedures established accordingly.

## **E. SUBMISSION OF PROPOSALS**

The detailed requirements for submission of proposals are described in the following sections. Deviations from these requirements may render a proposal non-responsive.

### ***E.1 TWO-PART PROPOSALS***

Proposals shall be prepared in two components: a Technical Proposal and a Price Proposal, prepared in accordance with the requirements stated in this RFP.

Sealed proposals shall be delivered to the following address:

New York State Department of Health  
Corning Tower, Room 2019  
The Governor Nelson A. Rockefeller Empire State Plaza  
Albany, New York 12237-0016

Proposals must be physically received at this location on or before the time and date specified on Page i of this document. Late proposals will be rejected.

Submitted proposals must conform to the proposal requirements specified in Section XII Proposal Requirements.

The outside cover of the separate, sealed package containing the Technical Proposal shall be clearly marked:

New York State Department of Health  
FAU #: 0711050248 Task 4824  
*Medicaid Data Warehouse Replacement and OHIP Data Mart Operational Support  
Project – Technical Proposal*  
(Offeror Name)

The outside cover of the separate, sealed package containing the Price Proposal shall be clearly marked:

New York State Department of Health  
*Medicaid Data Warehouse Replacement and OHIP Data Mart Operational Support  
Project – Price Proposal*

(Offeror Name)

All proposals shall clearly indicate the name, title, mailing address, daytime telephone number, and fax number of the Offeror's authorized agent with the authority to bind the Offeror to the provisions of the proposal and to answer official questions concerning the proposal.

### ***E.2 PROPOSAL AMENDMENTS AND RULES FOR WITHDRAWAL***

Prior to the proposal due date, a submitted proposal may be withdrawn by submitting a written request for its withdrawal, signed by the Offeror's authorized agent and providing an explanation for the action, to the contact designated on page ii. Return postage cost will be borne by the Offeror.

Offerors are allowed to make amendments or corrections to their proposals at any time prior to the proposal due date, without penalty. To amend or correct a proposal, an Offeror shall request that its proposal be returned. Return postage cost will be borne by the Offeror. The revised proposal must be received by NYSDOH prior to the proposal due date specified on page i in order to be considered for evaluation.

### ***E.3 ACCEPTANCE OF PROPOSALS***

NYSDOH will accept receipt of all proposals properly submitted. NYSDOH reserves the right to sign a contract, without negotiation, based on the terms, conditions and premises of the RFP and the proposal of the selected Offeror.

However, NYSDOH also reserves the right to waive minor irregularities in proposals when doing so would be in the best interest of NYSDOH. If NYSDOH waives minor irregularities, such waiver shall in no way modify the RFP requirements or excuse the Offeror from full compliance with RFP specifications and the contract requirements if the Offeror is awarded the contract. NYSDOH also reserves the right to request clarification or correction of proposal responses.

NYSDOH reserves the right to negotiate final specifications and terms if it determines doing so would be in the best interest of the State.

Alternate proposals will not be evaluated. However, NYSDOH reserves the right to consider the contents of an alternate proposal, if submitted, during final contract negotiations, if appropriate.

### ***E.4 PROPOSAL LIFE***

All proposals must be fully responsive to this RFP in order to be considered for contract award. The proposal must remain valid for 270 calendar days from the proposal due date.

### ***E.5 NYSDOH RIGHT TO REJECT PROPOSALS***

NYSDOH reserves the right, at its sole discretion, to reject any or all proposals. NYSDOH reserves the right, at its sole discretion, to cancel this procurement at any time.

## ***E.6 SELECTION COMMITTEE***

Upon completion of the evaluation of the Technical and Price Proposals, the price and technical evaluation committees will submit their recommendations for award to the selection committee. A Notice of Intent to Award will be issued after the selection committee and the Commissioner of the Department have approved the recommendation.

## ***E.7 CONTRACT SIGNATURE PROCESS***

When the Notice of Intent to Award has been issued, NYSDOH will submit the contract to the selected Offeror. If NYSDOH and the Offeror fail to reach a satisfactory agreement on the terms of the contract, NYSDOH may enter into discussions with the Offeror which submitted the next best proposal. When a satisfactory agreement is achieved, the contract will be presented to CMS for approval for Federal financial participation and to the appropriate State authorities for approval. Upon approval by CMS and the appropriate State authorities, the contract will be fully executed, subject to any additional modifications required by those authorities.

NYSDOH reserves the right to cancel this procurement prior to contract signing and not enter into a contract hereunder, if deemed in the best interest of NYSDOH.

## ***E.8 DEBRIEFING AND VENDOR PROTESTS***

Once an award has been made, offerors may request a debriefing with regard to their proposal. The debriefing will be limited to the strengths and weaknesses of the offeror's proposal, and will not include any discussion of other proposals. Requests must be received no later than three (3) months from the date of award announcement.

Written protests related to this procurement must be received no later than ten (10) calendar days from the date of award announcement. Procedures for submitting a protest can be obtained from the designated contact listed on page ii, pursuant to the New York State Office of the State Comptroller, Bulletin G-232 dated July 10, 2008 listed at <http://osc.state.ny.us/agencies/gbull/attachments/contractawardprotestprocedure.pdf>.

## **F. NYSDOH RESPONSIBILITIES**

The following sections detail NYSDOH responsibilities, including:

1. Review and approval of all work products;
2. Providing direction and setting policy for all work accomplished;
3. Providing appropriate staff; and
4. Auditing.

### **F.1 REVIEW AND APPROVAL OF ALL WORK PRODUCTS**

1. NYSDOH reserves the right to review and approve all aspects of the Contractor's work as it relates to this RFP;

2. NYSDOH will determine that the Contractor has addressed each requirement through each phase of the MDW contract and will notify the Contractor when it has been determined that an RFP requirement has been satisfied in each deliverable and project phase. NYSDOH will use the requirements traceability matrix created and maintained by the Contractor to assist in this process;
3. NYSDOH reserves the right, at its sole discretion, to determine if the Contractor has successfully met or completed all requirements for a project milestone or project phase; and NYSDOH reserves the right, at its sole discretion, to withhold payments based on a deliverable, milestone or phase completion when the Contractor has failed to meet all of the requirements.
4. NYSDOH has sole responsibility of approving the addition of new System Change Management projects and setting the priority of System Change Management projects. When NYSDOH submits a Change System Request (CSR), the Contractor shall open the CSR in the tracking tool and assign a CSR number. The Contractor shall begin work on the System Management project after receiving NYSDOH's approval in writing; and
5. NYSDOH will conduct a timely review of all materials submitted to NYSDOH by the Contractor, returning comments within ten (10) business days unless otherwise agreed upon by NYSDOH and the Contractor.

## **F.2 PROVIDING DIRECTION AND SETTING POLICY FOR ALL WORK ACCOMPLISHED**

1. NYSDOH will provide policy and contract clarification as requested by the Contractor;
2. NYSDOH will notify the Contractor regarding changes in Federal, State and NYSDOH requirements that affect the Contractor's performance with regard to the requirements in this RFP;
3. NYSDOH will establish policies and make administrative decisions concerning the requirements in this RFP;
4. NYSDOH will provide clarification to the Contractor regarding NYSDOH policies, regulations and other requirements that affect the data warehouse operations; and
5. NYSDOH will identify all Federal and State mandated reports for the Contractor's production and distribution including format, content, frequency of production, media, and distribution.

## **F.3 PROVIDING APPROPRIATE STAFF ACCESS FOR THE CONTRACTOR TO MEET ITS OBLIGATIONS**

1. NYSDOH will designate appropriate NYSDOH staff to be the primary contacts for the Contractor during the life of the contract; and
2. NYSDOH will provide access to the appropriate NYSDOH staff to advise and answer Contractor questions.

## **F.4 AUDITING RESPONSIBILITIES**

The goal of a project audit is to ensure that the Quality Assurance activities defined in Project Planning are being implemented and to determine whether quality standards are being met. NYSDOH reserves the right to audit any or all aspects of the Contractor's performance.

1. NYSDOH will review, on an annual basis during the first quarter of the calendar year, at a minimum:
  - a. The MDW documentation to validate accuracy, completeness and timeliness;
  - b. Security, Privacy and Confidentiality Plans and Procedures; and
  - c. All software to determine that the Contractor has kept the software current with all patches, fixes and new versions published by the software vendor;
2. In addition to the annual review, NYSDOH reserves the right to review at any time without prior announcement any aspect of the Contractor's performance as it relates to the requirements in this RFP;
3. NYSDOH may execute audits, announced or otherwise, of performance reports generated by the Contractor with the system logs to verify the accuracy of the Contractor's generated performance reports; and
4. NYSDOH reserves the right to audit the Contractor's security measures without notice.

## **G. CONTRACTOR RESPONSIBILITIES**

### **G.1 GENERAL CONTRACTOR REQUIREMENTS**

1. All deliverables, materials or other submissions provided by the Contractor must meet the form and content requirements specified by NYSDOH. Such deliverables or other materials shall be subject to NYSDOH approval;
2. If NYSDOH determines that a deliverable cannot be approved, the Contractor will have a cure period beginning with notice from NYSDOH that the deliverable is not approved. The cure period will last for ten (10) business days from the notice of deliverable rejection;
3. The Contractor work plan also must provide sufficient time (a minimum of ten (10) business days) for NYSDOH review and approval of each deliverable based on the scope of the deliverable;
4. The Contractor must deliver to NYSDOH five (5) paper copies of all document deliverables and an electronic copy on the date specified in NYSDOH-approved plans. The electronic copy must be on a DVD or CD-ROM in NYSDOH-approved format;
5. The Contractor must establish project management and reporting standards and communication protocols to be approved by NYSDOH;
6. The Contractor must maintain all approved project documentation in the MDW metadata repository;
7. The Contractor must use the project estimation methodology specified in its proposal for all project estimates provided to NYSDOH; and



8. Any tools used by the Contractor to establish project estimates must be made available to NYSDOH.

## **H. VENDOR-TO-VENDOR RELATIONSHIPS**

1. The Contractor must participate in scheduled contract coordination meetings between NYSDOH, the MMIS contractor and any other applicable contractors throughout the life of the MMIS and data warehouse contracts;
2. The Contractor must cooperate with the successor contractor while providing all required turnover services. This will include meeting with the successor and devising work schedules that are agreeable for both NYSDOH and the successor contractor;
3. The Contractor must participate in shared JAD sessions with NYSDOH and the current MMIS contractor during Phases 1 – 3 development tasks and activities to establish specific areas that require contract coordination efforts to be established; and
4. The Contractor must participate in shared JAD sessions with NYSDOH and the new MMIS contractor during the Phases 1 – 3 development tasks and activities to establish specific areas that require contract coordination efforts to be established.

## **I. PAYMENT**

If awarded a contract, the Contractor shall submit invoices and vouchers to:

Mr. Henry Stone  
Director, Administrative Support  
Office of Health Insurance Programs (OHIP)/  
Division of Systems  
New York State Department of Health (NYSDOH)  
800 North Pearl Street  
Albany, New York 12204

Payment of such invoices by the State shall be made in accordance with Article XI-A of the New York State Finance Law and in accordance with the schedules and methods defined in this section and Attachment N Pricing Schedules.

At the time of the award, the Department reserves the right to modify the payment schedule proposed by the offeror to achieve a reasonably equitable deliverable-based distribution of all phases.

No payment will be made until the Contract has received all required approvals. NYSDOH is not responsible for and will not pay local, State, or Federal taxes. All costs associated with the contract must be stated in U.S. currency.

Contractor payments will be reduced by the amount of any actual or liquidated damages as determined by the Project Director in accordance with the provisions of the RFP. The allowed payment by phases is described below.

### ***1.1 IMPLEMENTATION PHASE PAYMENTS***

The Contractor will be paid a fixed price for the implementation of each implementation milestone in accordance with Schedules B.1, B.2 and B.3 of the Contractor's proposal. Upon NYSDOH's approval of the completion of a milestone, the Contractor may invoice NYSDOH for that milestone.

### ***1.2 OPERATIONS PHASE PAYMENTS***

#### **1.2.1 Fixed Administrative Fee**

The Contractor shall be paid the fixed administrative fee, as presented in Pricing Schedules C.1 through C.5 of the Contractor's proposal, for each applicable year of operations. This fee will be invoiced and paid in equal monthly installments.

- **Contract Year 1 (Contract Start Date Through June 30, 2010)** - The first contract year is expected to be devoted to design, development, and implementation of the Medicaid Data Warehouse; therefore, there will be no operations payments during this contract year.
- **Contract Years 2 through 6 (July 1, 2010 Through June 30, 2015)** - The administrative fee includes the annual fixed amounts for operations of the Medicaid Data Warehouse.

#### **1.2.2 System Change Management Pricing**

The Contractor shall be paid up to, but not in excess of, the system change management price, as presented in Pricing Schedules D.1 through D.5 of the Contractor's proposal, for each applicable year of operations. These monthly payments made by NYSDOH will be variable and based on the actual hours spent by Contractor System Change Management staff working on completed NYSDOH-approved projects that are not within the scope of this RFP and the hourly rates in Pricing Schedules D.1 through D.5 appropriate to the staff and contract year.

- **Contract Year 1 (Contract Start Date Through June 30, 2010)** - The first contract year is expected to be devoted to design, development, and implementation of the Medicaid Data Warehouse; therefore, there will be no System Change Management payments during this contract year.
- **Contract Years 2 Through 6 (July 1, 2010 Through June 30, 2015)** - The System Change Management Price includes the cost of activities on NYSDOH-approved projects as performed by designated System Change Management Staff presented by the Contractor in Pricing Schedules D.1 through D.5 of its proposal.

### ***1.3 CONTRACT EXTENSION PRICING***

Should NYSDOH elect to extend the term of the contract, as set forth in Attachment I Contract Requirements, Section 1 Contract Term, the pricing for each optional contract extension year will be subject to an annual price increase of the lesser of three percent (3%) or the percent increase in the National Consumer Price Index for All Urban Consumers (CPI-U) as published by the United States Bureau of Labor Statistics, Washington, D.C., 2012 for the twelve (12) month period ending three (3) calendar months prior to the end date of the last year of the contract, as may be amended. Should the contract be extended for any of the six one-month periods, monthly payments to the Contractor will be calculated using the same methodology and the same pricing for the last full year of the contract.

## **J. LOBBYING STATUTE**

Chapter 1 of the Laws of 2005, as amended by Chapter 596 of the Laws of 2005, Chapter 395 of the Laws of 2006, and Chapter 14 of the Laws of 2007 provides, among other things, the following as pertains to development of procurement contracts with governmental entities:

1. Makes the lobbying law applicable to attempts to influence procurement contracts once the procurement process has been commenced by a state agency, unified court system, state legislature, public authority, certain industrial development agencies and local benefit corporations;
2. Requires the above mentioned governmental entities to record all contacts made by lobbyists and Contractors about a governmental procurement so that the public knows who is contacting governmental entities about procurements;
3. Requires governmental entities to designate persons who generally may be the only staff contacted relative to the governmental procurement by that entity in a restricted period;
4. Authorizes the Commission on Public Integrity to impose fines and penalties against persons/organizations engaging in impermissible contacts about a governmental procurement and provides for the debarment of repeat violators;
5. Directs the Office of General Services to disclose and maintain a list of non-responsible offerors pursuant to this new law and those who have been debarred and publish such list on its Web site;
6. Requires the timely disclosure of accurate and complete information from Offerors with respect to determinations of non-responsibility and debarment;
7. Expands the definition of lobbying to include attempts to influence gubernatorial or local Executive Orders, Tribal–State Agreements, and procurement contracts;
8. Replaces the former Temporary State Commission on Lobbying with a new Commission on Public Integrity;
9. Provides that opinions of the Commission shall be binding only on the person to whom such opinion is rendered;
10. Increases the monetary threshold which triggers a lobbyist’s obligations under the Lobbying Act from \$2,000 to \$5,000;
11. Expands the reporting obligation to encompass lobbying related to the disbursement of public monies;

12. Prohibits the provision of gifts, broadly defined, by lobbyists; and
13. Establishes the Advisory Council on Procurement Lobbying.

Generally speaking, two related aspects of procurement have been addressed: (i) activities by the business and lobbying community seeking procurement contracts and, (ii) activities involving governmental agencies establishing procurement contracts.

The relevant statutes provide for two related bodies, as noted above: the Commission on Public Integrity, established pursuant to Section 94 of the Executive Law, and the Advisory Council on Procurement Lobbying (Advisory Council), established pursuant to Section 1-t of the Legislative Law. The Advisory Council is authorized to establish model guidelines regarding the restrictions on contacts during the procurement process for use by governmental entities (see Legislative Law §1-t (e)). In an effort to facilitate compliance by government entities, the Advisory Council has also prepared model forms and language that can be used to meet the obligations imposed by State Finance Law §139-j, relating to restrictions on contacts.

It should be noted that while this Advisory Council is charged with the responsibility of providing the above-referenced guidelines to New York State agencies, and to providing advice to the Commission on Public Integrity regarding procurement lobbying, the Commission on Public Integrity retains full responsibility for the interpretation, administration and enforcement of the Lobbying Act established by Article 1-A of the Legislative Law (see Executive Law §94). Accordingly, questions regarding the registration and operation of the Lobbying Act should be directed to the Commission on Public Integrity.

## **K. ACCESSIBILITY OF STATE AGENCY WEB-BASED INTRANET AND INTERNET INFORMATION AND APPLICATIONS**

Any Web-based Intranet and Internet information and applications development, or programming delivered pursuant to the contract or procurement will comply with NYS Office for Technology Policy P04-002, “Accessibility of New York State Web-based Intranet and Internet Information and Applications”, and NYS Mandatory Technology Standard S04-001, as such policy or standard may be amended, modified or superseded, which requires that state agency Web-based Intranet and Internet information and applications are accessible to persons with disabilities. Web content must conform to NYS Mandatory Technology Standard S04-00, as determined by quality assurance testing. Such quality assurance testing will be conducted by NYSDOH, the Contractor or other third party acceptable to NYSDOH. The results of such testing must be satisfactory to NYSDOH before Web content will be considered a qualified deliverable.

## **L. INFORMATION SECURITY BREACH AND NOTIFICATION ACT**

Section 208 of the State Technology Law (STL) and Section 899-aa of the General Business Law (GBL) require that State entities and persons or businesses conducting business in New York who own or license computerized data which includes private information including an individual’s unencrypted personal information plus one or more of the following: social security number, driver’s license number or non-driver ID, account number, credit or debit card number plus security code, access code or password which permits access to an individual’s financial account, must disclose to a New York resident when their private information was, or is

reasonably believed to have been, acquired by a person without valid authorization. Notification of breach of that private information to all individuals affected or potentially affected must occur in the most expedient time possible without unreasonable delay, after measures are taken to determine the scope of the breach and to restore integrity; provided, however, that notification may be delayed if law enforcement determines that expedient notification would impede a criminal investigation. When notification is necessary, the State entity or person or business conducting business in New York must also notify the following New York State agencies: the Attorney General, the Office of Cyber Security & Critical Infrastructure Coordination (CSCIC) and the Consumer Protection Board (CPB). Information relative to the law and the notification process is available at: <http://www.cscic.state.ny.us/security/securitybreach>.

## **M. PUBLIC INFORMATION**

Disclosure of information related to this procurement and the resulting contract shall be permitted consistent with the laws of the State of New York and specifically the Freedom of Information Law (FOIL) contained in Article 6 of the Public Officers Law. The State shall take reasonable steps to protect from public disclosure any of the records relating to this procurement that are exempt from disclosure. Information constituting trade secrets or critical infrastructure information for purposes of FOIL shall be clearly marked and identified as such by the Contractor upon submission. If the Contractor intends to seek an exemption from disclosure of claimed trade secret materials or claimed critical infrastructure information under FOIL, the Contractor shall at the time of submission, clearly mark and identify those specific parts of the submission for which such treatment is sought, request the exemption in writing and provide an explanation of (i) why the disclosure of the identified information would cause substantial injury to the competitive position of the Contractor, or (ii) why the information constitutes critical infrastructure information that should be exempted from disclosure pursuant to §87(2) of the Public Officers Law. Acceptance of the identified information by the State does not constitute a determination that the information is exempt from disclosure under FOIL. Determinations as to whether the materials or information may be withheld from disclosure will be made in accordance with FOIL at the time a request for such information is received by the State.

## **N. NEW YORK STATE TAX LAW SECTION 5-A**

Section 5-a of the Tax Law, as amended, effective April 26, 2006, requires certain Contractors awarded state contracts for commodities, services and technology valued at more than \$100,000 to certify to the Department of Tax and Finance (DTF) that they are registered to collect New York State and local sales and compensating use taxes. The law applies to contracts where the total amount of such Contractors' sales delivered into New York State are in excess of \$300,000 for the four (4) quarterly periods immediately preceding the quarterly period in which the certification is made, and with respect to any affiliates and subcontractors whose sales delivered into New York State exceeded \$300,000 for the four (4) quarterly periods immediately preceding the quarterly period in which the certification is made.

This law imposes upon certain Contractors the obligation to certify whether or not the Contractor, its affiliates, and its subcontractors are required to register to collect state sales and



compensating use tax and Contractors must certify to DTF that each affiliate and subcontractor exceeding such sales threshold is registered with DTF to collect New York State and local sales and compensating use taxes. The law prohibits the State Comptroller, or other approving agencies, from approving a contract awarded to an Offeror meeting the registration requirements but who is not so registered in accordance with the law.

Contractor must complete and submit directly to the New York State Tax and Finance (DTF), Contractor Certification Form ST-220-TD (Attachment G of this RFP) attached hereto. Unless the information upon which the ST-220-TD is based changes, this form only needs to be filed once with DTF. If the information changes for the Contractor, its affiliate(s), or its subcontractor(s), a new form (ST-220-TD) must be filed with DTF.

Contractor must also complete and submit to the NYSDOH the form Contractor Certification to Covered Agency Form ST-220-CA (Attachment F of this RFP) attached hereto, certifying that the Contractor filed the ST-220-TD with DTF. Failure to make either of these filings may render an Offeror non-responsive and non-responsible. Offerors shall take the necessary steps to provide properly certified forms within a timely manner to ensure compliance with the law.