



**2007-2012**

**Strategic  
Information  
Technology  
Plan**

**March  
2007**

**Wisconsin Department of Health and Family Services**

Published on Internet: <http://dhfs.wisconsin.gov/aboutdhfs/ITPlan/index.htm>

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## Introduction

### Overview

Information technology (IT) influences every activity in the Department of Health and Family Services (DHFS). Therefore, the Department integrates its business and IT strategic planning processes to ensure alignment of IT directions with business goals. The Strategic Information Technology Plan should be viewed in context of the Department's business plan. It serves as our roadmap for leveraging technology in our business processes and is intended to guide the development of more detailed implementation plans. As IT improves, we will be able to perform our mission better, faster, and cheaper. Leveraging technology in our business processes requires:

- Complete understanding of the Department's mission.
- Employment of best business practices.
- Implementation of structured and standardized architectures.
- Process-driven systems development.
- Partnership with all stakeholders.
- Clarity of the business requirements.
- Effective management and protection of information as a strategic resource.

The Department's Business Plan lists five strategic goals. These goals are listed below. The Department's goals and strategies have IT implications, and the IT directions outlined in this document address these implications. They serve as strategic guideposts for IT resource investments over the next 5 years. These directions are also consistent with the Statewide Enterprise IT Initiatives.

### Strategic Business Plan Goals

The Department's strategic goals support its mission: Promote and protect the health and safety of Wisconsin people.

1. Promote the health and safety of all people in Wisconsin, emphasizing prevention.
2. Foster access to quality, affordable health care and treatment for all people and manage Medicaid cost effectively.
3. Implement long-term care reform.
4. Increase opportunities for children to grow up safe, healthy and successful in strong families.
5. Provide public services that are effective, efficient and accountable while holding down taxpayer costs.

### Information Technology Vision

*To facilitate the programmatic goals of the Department through dependable, seamless technology resources with secured access to comprehensive, quality data using integrated enterprise facilities.*

### Business Problems & Opportunities

The Department will apply technology solutions to meet its programmatic needs within these business parameters.

- Reduce manual processes.
- Reduce excessive use of paper.

- Provide systems to reduce lack of information.
- Provide systems to reduce lack of timely information.
- Provide systems to reduce lack of staffing to support increasing operational needs.

## **IT Architectures**

This plan is organized based on the five standard IT Architectures (Applications, Data, Technology, Organization and Security). For a detailed description and definition of each of the architectures, please refer to Appendix A.

## ***Applications Architecture***

### ***Definition of Application Architecture***

Applications are the automated programs people use to do their work and accomplish the Department's mission. The application architecture provides the structure for developing the department's electronic business applications.

The following is a description of strategic-level initiatives and projects that DHFS is focusing on:

- BadgerCare Plus
- BadgerCare Plus Expansion to Childless Adults
- Family Care Expansion
- MMIS Implementation
- eHealth
- Public Health Information Network (PHIN)
- Vital Records (VR) System Redesign.

These initiatives align with the Governor's goals, and the Department's business goals, IT directions, and IT architectures as shown in the mapping in Appendix B. The Department will:

- Ensure business and programmatic needs will drive IT proposals.
- Give higher priority to projects fulfilling or supporting federal mandates or state statutes.
- Seek opportunities for integrating Division/Office-level projects into a Department or State-enterprise project effort when advantageous.

### ***Badger Care Plus***

Bureau of Eligibility Management (BEM) Projects required for eligibility to be accurately determined for BadgerCare Plus.

Correctly and accurately determine eligibility for BadgerCare Plus (and all other programs in CARES since the implementation of BadgerCare Plus will have a cascading affect on other programs of assistance in CARES). Improve client communications, reduce processing costs and provide accurate reporting to the state, counties and clients via reporting, ACCESS and Client Notices.

This effort includes changes/enhancements to CARES, CARES WorkerWeb (CWW), ACCESS and related systems including: Application Entry (AE), Client Notices (a.k.a. client correspondence), Alerts, Standard Filing Unit (SFU), Independent Intelligent Eligibility Determination (IIED), Eligibility Determination Benefit Calculation (EDBC), MMIS Interfaces, reporting, Family Care functions, IVE Interface with eWiSACWIS and Electronic Case File (ECF). Support needed for this initiative will be provided by BEM, Deloitte Consulting, EDS, DOA/DET with eWiSACWIS support coming from BITS.

In addition to the items listed above, we will also be replacing the entire CWW technical infrastructure on May 31<sup>st</sup> and we will also be building a new CARES Notices infrastructure later this year to support the new Client Notices (correspondence) system. Finally, we will be utilizing distance learning/e-Training to implement and train the end users on the work related to all of these initiatives.

### ***Badger Care Plus Expansion to Childless Adults***

Bureau of Eligibility Management (BEM) projects required for eligibility to be determined for BadgerCare Plus Expansion to childless Adults. While we have not yet fleshed out the detailed requirements for the BadgerCare Plus Expansion project, it will be similar to BadgerCare Plus, although not as extensive because it will be built on the foundation designed into BadgerCare Plus.

Correctly and accurately determine eligibility for BadgerCare Plus Expansion to Childless Adults (and all other programs in CARES since the implementation of BadgerCare Plus will have a cascading affect on other programs of assistance in CARES). Provide accurate reporting to the state, counties and clients via reporting, ACCESS and Client Notices.

This effort includes changes/enhancements to CARES, CARES WorkerWeb (CWW), ACCESS and related systems including: Application Entry (AE), Client Notices (a.k.a. client correspondence), Alerts, Standard Filing Unit (SFU), Independent Intelligent Eligibility Determination (IIED), Eligibility Determination Benefit Calculation (EDBC), MMIS Interfaces, reporting, Family Care functions, IVE Interface with eWisacwis and Electronic Case File (ECF). Support needed for this initiative will be provided by BEM, Deloitte, EDS, DOA/DET with e-Wisacwis support coming from BITS.

### ***Family Care Expansion***

The Department is committed to implementing the Governor's direction to expand the Family Care program state-wide over the next five years. Family Care replaced several long term care community service programs for elderly, physically disabled and developmental disabled individuals with a entirely new managed care service delivery model. In addition to new program policy and procedures, the new managed care program required entirely new business process and information technology supports - as compared to the previous individual programs, which were traditional Medicaid waiver programs delegating service delivery operations to county agencies. An at-risk managed care program significantly changes the contracting relationship between the Department/payer and the care management organization (CMO) responsible for management and delivery of program services. The Department's primary responsibilities must focus on program availability for clients, quality/performance oversight of program delivery, financial oversight of program delivery, and state level policy and budgetary responsibilities.

The development of business process and information technology needed for Family Care leverages infrastructure already in place for Medicaid programs to the greatest extent possible. The functions addressed included program eligibility (functional and financial), enrollment, capitation payment to CMOs, encounter reporting from CMOs, activity reporting from Resource Centers (initial contact organizations), business intelligence supporting collected data, and data

accessibility for all appropriate parties. Infrastructure development has occurred to support these functions for the Family Care pilot program initiative, and now must continue to progress in order to support scaling up to state wide implementation. Because the core Medicaid information technology system (MMIS) that has been leveraged for several key Family Care functions is now being replaced, this will also result in the need for new system modifications. In the Family Care expansion initiative, different managed care program models may be utilized in different sites. While the basic functions necessary for a managed care delivery system model remain, the business process differences may require more or variations in information technology development.

There are **six** major initiatives for next year, with work efforts already underway for some of them. Additional smaller projects that support or inter-relate with these major initiatives are also planned, but identified and tracked at a more detailed work-plan level.

### 1. **MMIS County Pilot**

**Business Problem** – It is cost prohibitive to maintain multiple local claims processing systems. Additionally, the federal oversight agency (Centers for Medicare and Medicaid Services – CMS) is requiring that all Wisconsin Medicaid waiver programs must have the option of using the MMIS system (Medicaid Management Information System) for service provider claims processing in order to continue to receive federal waiver authority.

**IT Initiative** - Since the Department has to maintain the capacity for Medical Assistance claims processing and is in the process of installing and modifying a new claims processing system, we are taking advantage of this opportunity and developing the capability and capacity within the new MMIS (interChange) system to handle claims processing for programs delegated to the county/local level for administration. This project effort is targeted for completion in 2008.

### 2. **HSRS (Human Services Reporting System) - Encounter Reporting Transition**

**Business Problem** – The Department's legacy mainframe system to collect summary program, service, and cost data for community support programs is becoming cost prohibitive to maintain, and does not meet the changing needs for more detailed and comprehensive data on program performance. Additionally the federal oversight agency (CMS) is making encounter reporting a condition of future Medicaid waiver and waiver renewal approvals.

**IT Initiative** – Leverage the Family Care encounter reporting system by developing enhancements which can replace the data collection functions performed by the HSRS system, improving on data collection flexibility and data cleansing, and minimizing the transition workload impact on local agencies which have limited IT resources. Targeted for piloting in 2008.

### 3. **Data Warehouse – Business Intelligence Development**

**Business Problem** – Community service program data (including Family Care), collected from county/local program administrative agencies, needs to be made available externally back to those business partners for their management purposes. The Medicaid program data warehouse (MEDS) is the designated central repository for this data, but it is not externally accessible and does not have the appropriate security infrastructure in place to allow external access.

**IT Initiative** – In conjunction with the MMIS/interChange implementation, which will create the required security and web portals, the Department is restructuring the datasets and creating views of the functional program-eligibility screen and encounter reporting datasets to allow external access by submitters to their own data and de-identified aggregate statewide data.

#### 4. Functional Screen Rewrite

**Business Problem** – The Functional Screen applications determine program eligibility for Family Care and several other community programs. The business and data layers of the applications are written in Microsoft VB 6.0. Microsoft will no longer support VB 6.0 starting March 2008. The application must be available state-wide without interruption to meet federal eligibility determination requirements.

**IT Initiative** – Migrate the Functional Screen application to JAVA architecture. The Medicaid financial eligibility system (CARES Worker Web) is developed in Java. Since the Functional Screen application feeds data into CARES, there will be development efficiencies if both applications are utilizing the same architecture. Planning is expected to begin in the next year but funding needs to be identified to support the development effort.

#### 5. Functional Screen Enhancements/Eligibility Streamlining

**Business Problem** – Family Care Expansion is a driving force to improve eligibility and enrollment business processes. The Functional Screen applications continue to evolve and require on-going enhancements in response to federal and state program policy and operational requirements.

**IT Initiative** – Manage Functional Screen projects, in collaboration with the Division of Health Care Financing (DHCF), to eliminate manual processes and streamline eligibility and enrollment functions for both adult and children's Long Term Care (LTC) programs. This effort can leverage development completed for the CARES Work Web project, such as the automated In-Box functionality, to improve screener communication and expedite intake and referral linkage between inter-related program entities, i.e. Income Maintenance using CARES and Resource Centers using Functional Screens.

## 6. Children's LTC Reform

**Business Problem** – Pilot a managed care model of long-term supports to meet the objectives for children, including access to services, choice of services, coordination of services, quality of services, and financing of services. Also, pilot and support Resource Centers serving at least 25% of children with long-term support needs.

**IT Initiative** – Continue improvement of the Children's Long-Term Support Functional Screen and related components, such as the Medicaid ACCESS system, to ensure efficient and timely Medicaid and long-term support eligibility for children.

Develop and improve data collection systems for Resource Centers to ensure complete and accurate data about Department required services. Planning will begin in the next year, with pilot implementation targeted for 2008.

### ***Medicaid Management Information System (MMIS) Design, Development, and Implementation (DDI)***

This project is the design, development and implementation of a new Medicaid Management Information System (MMIS) to replace the current MMIS. This project is the result of a competitive procurement in 2004 for a new MMIS and Fiscal Agent contract to provide claims processing, payment and reporting and other administrative and operational and system support for Wisconsin's health care programs including Medicaid, BadgerCare, FamilyCare, SeniorCare, Wisconsin Immunization Registry, Wisconsin Well Woman Program and Wisconsin Chronic Disease Program.

This initiative will help improve the efficiency and effectiveness of program administration and reduce administrative contract costs through the implementation of a new MMIS. The new MMIS incorporates the latest advances in computer hardware and software, utilization management and program management techniques.

The design, development and implementation process for the new MMIS continues in the next year following standard system development life cycle processes. The focus in the next year will be on construction/development, testing and implementation readiness.

### ***eHealth***

In November 2005, Governor Jim Doyle issued the Executive Order #129 to challenge Wisconsin to achieve statewide adoption of electronic health records and information exchange to enable better, safer and more efficient patient care. The eHealth Care Quality and Patient Safety Board was created and charged to develop a five-year action plan which will guide Wisconsin state government's legislative and regulatory actions, encourage coordinated efforts in the private health care sector, further public and private partnerships for the development of a statewide electronic health information infrastructure, and maximize federal financial participation to support early adoption of the electronic health information infrastructure that provides needed information at the point of patient care. An Action Plan was developed and at its November 14, 2006 meeting, the Board endorsed the strategies and recommendations in the plan to meet the expectations in the Governor's Executive Order.

This plan weaves together three strategies to take a coherent, whole-systems approach to transformation of the health care sector:

1. Improve quality, safety and value by establishing the eHealth technology platform to provide needed information at the point of patient care.
2. Encourage the development, alignment and implementation of value-based purchasing policies and actions across the public and private sectors.
3. Link Health Information Technology (HIT) and Health Information Exchange (HIE) plans to prevention and disease management activities.

Health information today is fragmented, often inaccessible and error prone. Patients, providers, public health authorities, and payers often make important decisions with inadequate information. Technology provides a platform to manage and access information to transform the health care sector, to make health care investments more productive, and to improve the safety and quality of health care. None of this is possible without the investment in health information technology and exchange. Better information is needed so that all health care providers in Wisconsin can deliver patient-centric care, consistent with the six aims for improvement established by the Institute of Medicine for health care that is safe, effective, patient-centered, timely, efficient and equitable.

There is now a wonderful opportunity to accelerate ground-breaking work already underway in the state led by health care provider organizations, physicians, public health, technologists, scholars, and public and private health care purchasers. Wisconsin already enjoys a high level of information technology adoption in health care and public health. Many large health systems are already moving ahead with electronic health records and other investments. In both the health care and technology sectors, Wisconsin benefits from strong intellectual resources and a commitment to succeed in statewide health information technology (HIT) and health information exchange (HIE).

Collaboration between Wisconsin's public and private health care purchasers is nationally recognized. For example, the Wisconsin Collaborative for Healthcare Quality, the Wisconsin Health Information Organization, the Wisconsin Medical Society and the Wisconsin Hospital Association, major insurers and provider organizations are collaborating on the measurement and reporting of health care quality and costs. Our work in Wisconsin is well aligned with goals of our federal government leadership and activities in other leading states.

The project calls for the adoption of electronic health records systems by private and public health care providers, and more data exchange or sharing amongst the health care providers, payers, associations and organizations to provide critical information at the point of care anywhere in the state of Wisconsin. This will require the establishment of an IT platform to store the necessary data and information. Data can come in many formats depending upon its source and use (e.g. scanned documents, database elements, graphics, etc.).

In order to support the project needs, certain infrastructural items will have to be defined, develop and implemented in the first couple of years. These are:

- Data set standard for the various information needs identified as high priority, such as patient demographics, Master Patient Index (MPI), allergies List, medications list, diagnosis history, results reporting (lab, x-rays, etc.) and care providers data.
- Privacy and Security standards
- Technical IT Architectural requirements
- Identification of potential solutions and contracts to provide high-speed internet access to small health care providers and in some cases individual patient (through a community or public access points such as library, county HFS, etc.)

### ***Public Health Information System (PHIN) including Emergency Preparation/Response***

The Wisconsin Division of Public Health (DPH) is developing a statewide information technology infrastructure for public health. This Public Health Information Network (PHIN) is consistent with federal initiatives for a nationwide infrastructure based on standards that ensure all parts can work together. PHIN is designed to provide automation of day-to-day state and local public health operations as well as capacity for early detection of and response to bioterrorism and other emergencies.

PHIN is designed to continuously monitor, detect early, and enable rapid response to public health emergencies. Through state-of-the-art Internet resources, the Wisconsin Health Alert Network (HAN) connects all public health partners: state and local public health, emergency responders and managers, laboratories, hospitals and clinics, emergency rooms, law enforcement, and the public. In a secure environment, HAN sends alerts in multiple forms including voice, fax, and e-mail. In addition, PHIN provides secure information access and exchange, and integration of on-line public health surveillance systems. These systems will provide a dynamic, comprehensive, real-time view of the health status of Wisconsin's communities and relay this view to our state and federal partners.

The PHIN provides advanced information technology resources for communications, data analysis, and public health response during public health threats, emergencies, and daily operations. Key services and implementation dates:

- Partner Communications and Alerting-assures high-speed Internet connectivity; provides routine use of the Web for notification of alerts and other critical communication; and maintains a directory of public health participants, their roles, and contact information covering all local jurisdictions. This system provides an automated, redundant (e-mail, voicemail, fax, text pager, etc.) communications system for public health emergencies. It is currently operational and being enhanced. The Health Alert Network communicated alerts and advisories during the eColi outbreak, and the Wisconsin Emergency Assistance Volunteer Registry was used to identify and alert volunteers for the Katrina disaster.
- Electronic Laboratory Reporting-improves timeliness, accuracy, and efficiency of reporting of notifiable conditions and other results. Three major laboratories are reporting electronically. Twelve additional labs will be connected by April 2008. The results of all reporting labs will be accessible by local health departments to perform their surveillance and response duties.

- Early Event Detection/Countermeasure, Response and Outbreak Management--systems to continuously track information from many sources for early warning of public health emergencies. Includes systems that manage outbreaks, countermeasures, and other responses to public health emergencies. A commercial-off-the-shelf system (currently used by several California counties including LA) was purchased and is being piloted in the City of Milwaukee, Brown County and Burnett County. Most local health departments will use this Wisconsin Disease Surveillance System (WEDSS) by the end of CY2007.

### ***Vital Records***

Federal legislation (the Intelligence Reform Act and Real ID Acts) requires all states to implement automated vital records systems. A statewide electronic system for registering (filing), printing, servicing, and managing vital records also achieves long-standing business goals of enabling the State Vital Records Offices and its business partners to eliminate redundant activities and improve the quality and timeliness of all vital records functions. This project will provide access through a Web-based electronic registration system for authorized vital record business partners who complete and file birth, death, marriage, and divorce records; and fetal death reports. The system will also provide a Web-based accounting and record copy issuance system to be used at the state and local registration office level and will provide a uniform platform for the conversion of numerous non-integrated legacy systems. The proposed system is a comprehensive solution for the essential processes of a state vital records program using an enterprise technology architecture. It will provide appropriate, secure access to authorized vital records filers; reduce the dependence on manual searches or batch data uploads; and make processing vital records more timely and efficient. This project advances long-term solutions to preserve and protect vital records, maximizes partnerships and ensures data security. The project will be designed to conform to federal requirements.

This project also has a large data conversion component. In general it must convert existing paper, film and electronic information to the new online system.

Vital records offices in Wisconsin file approximately 68,000 birth records, 46,000 death records, 36,000 marriage records, and 18,000 divorce records each year. The statewide system used to register and amend vital records is paper-intensive and only partially automated. The transmission of information between filing parties, Local Registrars, and the State Registrar does not incorporate advances in technology that would make communication more timely, secure, and efficient. Currently, two-thirds of the records filed annually are submitted on paper. This requires Local Registrars and other vital records business partners, including birthing facilities, funeral directors, physicians, coroners and medical examiners, county clerks, and county clerks of court, to fill out or amend vital records forms on typewriters before mailing these documents to the State Office. The speed of registration of legal documents and data is dependent upon the U.S. postal service or, in some cases, long-distance travel for hand-delivery, in order to meet statutory filing deadlines.

The State Vital Records Office has developed several stand-alone computer applications to make in-house record processing more effective. However, these systems are not readily available to Local Registrars, are difficult to modify, have limited ability to communicate with each other, use outdated technology, and are not flexible enough to meet current needs of the State and Local Registrars and the filing parties. Some Local Registrars have automated their vital records functions but the majority are still using manual systems. Many registrars have

little or no room for expanding their vital records files and are seeking an acceptable alternative to filing paper records.

The process used to index and amend vital records has varied over the years, resulting in a current system of multiple index and record formats. Approximately 20 million birth, death, marriage, divorce, and amendment records and indexes are housed in the State Vital Records Office. These records and indexes must be edited for correctness and protected against damage or destruction.

Increased concerns over privacy and the misuse of vital records in identity theft crimes have prompted state and local registration offices to spend more resources protecting vital records from unauthorized access, leaving less time to devote to a paper-intensive system. To provide the level of service that employers, the public, child support enforcement and other agencies require, while safeguarding the privacy rights of individuals whose events are recorded and recognizing the rights of historians and public researchers, it is necessary to improve and expand the current level of automation used by the statewide vital records system.

## **Data Architecture**

### **Definition of Data Architecture**

The data architecture provides the framework for integrating, managing, and using department data.

### **Data and Information Management**

**Description of Challenge:** DHFS' data resides on multiple systems, at multiple locations, managed by multiple vendors, other state agencies and internal staff. Access to data sources is very difficult. Core/enterprise data (customer/client data, address data, provider data, etc.) is also duplicated by each application at their respective system hosting locations. Several department technical solutions, namely, Geographic Information Systems (GIS), Data Warehousing (DW), Document Management (DM), Reporting and others need access to multiple sources of data but face barriers in getting to the data. Once the data is retrieved, there is no well-defined strategy to maintain it.

Data is at the heart of all information systems for the department. Any technical solution pursued by the department requires data for input and will produce data or information as outputs.

**IT Strategy:** DHFS needs to develop an enterprise strategy, in the form of a Federated Model, for data and information management to allow for better services and decision-making. The Federated Model allows programs the flexibility to store and manage data based on the best solution they can achieve for their needs. However, it requires that standard processes, conventions and designs be implemented in any system design solution to allow for interoperability and efficient access and sharing. To implement a Federated Model, we propose:

1. Establishing a department-wide data management **governance** structure, that would include:
  - o Collaborative BITS and Division management process,
  - o Definition of data ownership, and
  - o Implementation of a "Data Stewardship" program.
2. Developing data administration and information management **guidelines**.
  - o Following common, core data standards in designing systems, collecting and saving data.
3. Developing a methodology to link disparate data sets across organizational and technological boundaries, for example, use of a "**Master 'X' Index (MXI) system** – Master **C**ustomer Index, Master **A**ddress Index, Master **P**rovider Index, and others.

### **Expanded Use of Master Customer Index (MCI)**

Division of Health Care Financing (DHCF) funded the development of a "Master Customer Index" to allow various applications access to various sources of "Customer" information through a single index. Several programs have started to use this solution, namely, DHFS-Cares Worker Web, DHFS-Long-Term Care and DWD-ASSET. Future

additions may include DHFS-eWiSACWIS and other systems. There are **2.63 million** distinct individuals known to MCI. The development costs of this project were \$250,000; the yearly maintenance costs are \$55,000.

MCI INFORMATION	MCI FEATURES
<ul style="list-style-type: none"> <li>• 10-digit Unique Identifier</li> <li>• Social Security Number (SSN)</li> <li>• First and Last Names</li> <li>• Date of Birth</li> <li>• Gender</li> <li>• Alias and Maiden Names</li> <li>• Applications aware of individual</li> </ul>	<ul style="list-style-type: none"> <li>• Search</li> <li>• Clearance/Match Scores (<math>\geq 75\%</math> - <i>no new entry</i>)</li> <li>• Demographic Maintenance</li> <li>• SSN Verification with Social Security Administration (SSA)</li> </ul>

DHFS needs to expand the use of MCI and look into opportunities to develop other major indexes, such as a Master **Provider** Index (MPI) and Master **Address** Index (MAI) or others to allow for data connectivity and availability for decision-support.

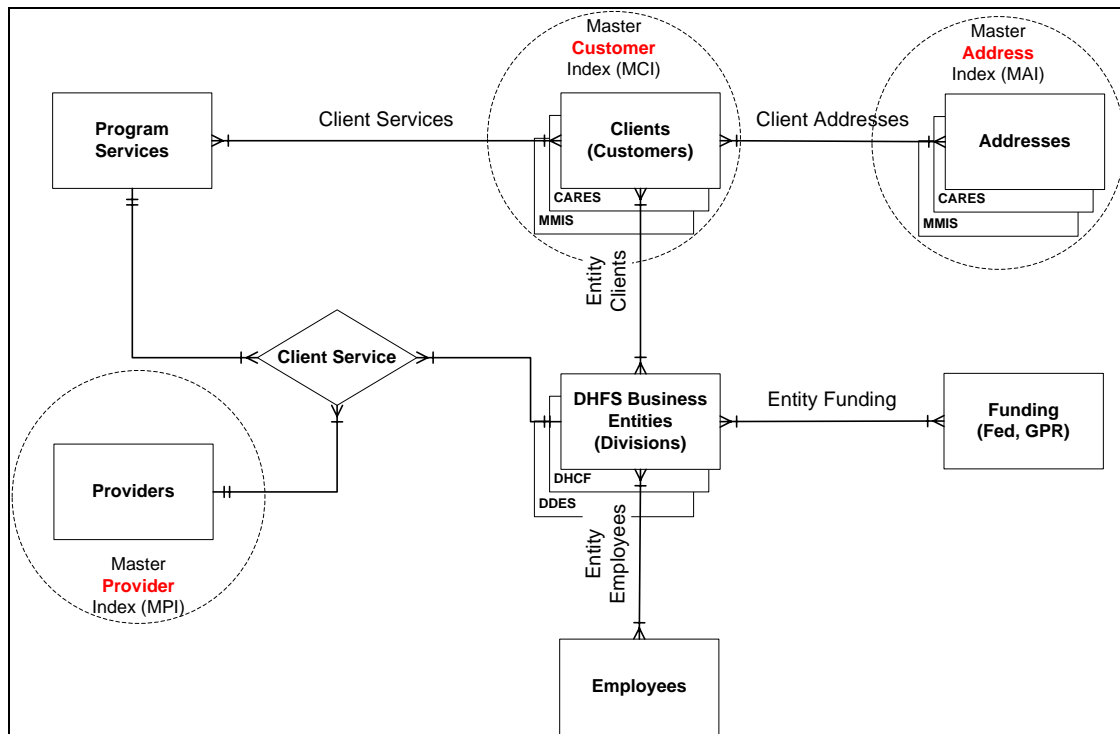


Figure 1: Conceptual Model of Major Data Objects and the Proposed M'X'I Initiative

### Data Warehousing

**Description of Challenge:** DHFS has growing needs for data warehousing solutions. Implementation of solutions is not centrally designed, managed or organized to capitalize on economies of scale. Hence, there are silo implementations of data warehouses by a number of program areas, namely:

- **MEDS** – Medicare/Medicaid Electronic Data System – managed by EDS, hosted at DHFS
- **BHIP** – Bureau of Health Information and Policy – created by program area, hosted at DHFS
- **CARES** – Client Assistance for Reemployment and Economic Support – managed by DWD and Deloitte, hosted at DWD
- **PHIN** – Public Health Information Network – managed and hosted by DoIT
- **eWiSACWIS** – Wisconsin Statewide Automated Child Welfare Information System – being developed at DHFS
- **LTC** – Long-Term Care – managed by EDS and Deloitte, hosted at DHFS as part of MEDS
- **GIS** – Geographic Information Systems – proposed development of spatial data from various data sources, hosted at DHFS

**IT Strategy:** DHFS is evaluating options and planning the implementation of data warehousing solutions that encompasses all of DHFS' needs. Under consideration is how to organize and link data from various programs with each other to support a range of decision-making criteria. Centrally establishing a data warehouse will allow DHFS to support multiple program and application needs and future initiatives such as eHealth, which requires data from a variety of data sources, such as PHIN.

## ***Technology Architecture***

### ***Definition of Technology Architecture***

The Department primarily leverages its own technology architecture to manage and deliver program services. Upon completion of technical consolidation, the Department will leverage the State's enterprise technology architecture provided by the Department of Administration (DOA) through the Shared Information Services data center. The technology architecture provides our hardware and software direction. It includes the desktop computers, portable computing devices, servers, routers, switches, gateways, wiring; and software products required to host and operate our applications, perform office automation functions, and communicate and conduct business electronically.

### ***IT Operations Improvements***

**Description of Challenge:** DHFS needs a series of key technologies to enhance operations efficiencies and to provide adequate levels of management oversight. Current activities are either not well defined or not followed consistently. Many processes are manual and require significant human intervention.

**IT Strategy:** The Bureau of Information and Technology Services (BITS) has developed an internal IT Strategic Plan to enhance operational efficiencies. Communication between units and sections has improved; continued improvement is needed for it to be seamless. A number of key processes will be evaluated and automation tools will be identified to assist in managing and integrating them, including:

- **Request Handling Process** and system to manage various types of customer and internal project requests.
- **Help Desk Process** including incident management of problems, changes, requests, etc.
- **Library Management** System to manage system and project repository of documentation, versioning, etc.
- **Configuration Management** System to assist in change management, testing, configuration of systems upon roll-out and implementation, etc.
- **System Management and Monitoring** to monitor and manage enterprise-wide devices (servers, printers, PCs, etc.).

### ***Geographic Information Systems (GIS) Infrastructure***

**Description of Challenge:** There is a growing need by DHFS programs and external entities for DHFS GIS data. We predict that the need for DHFS GIS data will increase over time, for example:

- Wisconsin Emergency Management – Disaster related events and how they affect our citizens
- Division of Enterprise Technology (DET) data and software consolidation – Bring together state agencies' GIS data and some technology for more efficient collaboration and sharing
- Internal customer requests for internal and external data – Bring together DHFS GIS data into a central repository for more efficient collaboration and sharing in the Department.

- Citizen access to DHFS program services – Provide GIS based mapping and data to citizens to better serve their needs
- Public health preparedness initiatives – Strategic National Stockpile and Pandemic Flu Surveillance and Response
- Human services support – Creating and mapping Volunteer Registries of citizens with special medical needs for proper preparedness and response in the event of an emergency

DHFS does not have an enterprise GIS infrastructure or a consistent set of products and services to support department program needs.

GIS investments have been made across various programs in the department without the benefit of a clearly established enterprise strategy. Listed below are entities that are currently financing the creation of various GIS infrastructures to support their program needs:

- Department of Administration (DOA), Division of Enterprise Technology (DET)
- Wisconsin Emergency Management (WEM)
- DHFS Division of Public Health (DPH), Public Health Information Network (PHIN) & Vital Records
- DHFS Division of Public Health (DPH), Wisconsin Immunization Registry (WIR)
- DHFS Division of Children and Family Services (DCFS), Wisconsin Statewide Automated Child Welfare Information System (WiSACWIS) & Children's Licensing Information Computer System (CLICS)
- DHFS Division of Disability and Elder Services (DDES) Health & Residential Care

**IT Strategy:** DHFS is currently evaluating and establishing a central GIS infrastructure that can meet the needs of all DHFS programs. DHFS is closely working with the State Geographic Information Officer (GIO) so that any solution developed can easily be migrated or connected to the enterprise (DET) infrastructure when it is finalized.

*For details about the Land Information Plan, please refer to Appendix C.*

### ***Business Objects Infrastructure***

**Description of Challenge:** There is a growing need for new tools which can query, analyze, relate, store and report on data from a wide range of information sources. The objective is to improve our “Business Intelligence” (BI) information gathering and business decision making.

**IT Strategy:** DHFS is currently building a Business Objects system for evaluation by the WiSACWIS and BITS development teams. If the tool is adopted, it can be established for production use by WiSACWIS and other program areas.

## ***Document Management – including scanning and indexing technologies***

**Description of Challenge:** There is a growing need for document management in the department across Office of Quality Assurance, Procurement, Human Resources, Vital Records and many other programs. To date, the Division of Health Care Financing has implemented the Electronic Case File (ECF) system at DET on the Content Management technology. The costs of Content Management and the coordination necessary to implement a system with DET, given other priorities, do not make Content Management a viable, cost-effective option at this time. The growing need to increase productivity, eliminate paper, establish repositories for on-line search, retrieval and records management compliance makes document management a greater necessity for DHFS.

**IT Strategy:** DHFS plans to work with DET to determine a viable document management solution option; this includes researching technologies that will be best suited for DHFS' needs. Hosting options will be evaluated and if cost-effective and efficient Service Level Thresholds can be assured, a hosting solution may be considered at DET or other State agencies, such as Department of Workforce Development (DWD).

## ***Wireless Handheld Devices***

**Description of Challenge:** How should DHFS support the growing demand for wireless handheld devices to be used for e-mail, calendaring, voice, text messaging & alerts, walkie-talkie, and small application use on the go?

**Growing Demand:** Particularly among the executive staff, there has been a growing demand for wireless handheld devices.

- Need to stay connected to the office (email, calendar, contacts, messaging, and documents).
- Need to stay informed of and respond to urgent issues in a discreet and immediate way (health alerts, response to urgent messages).
- Need to increase productivity while mobile (multi-tasking, email response, document availability).

**IT Strategy:** Implement available Blackberry service now for Executive Staff only, then explore Windows-based device service and other options as they become available. The Windows handheld operating system allows for greater interoperability with our existing Windows desktop environment and office productivity suite.

## ***Shared Multifunction Devices (MFDs)***

**Description of Challenge:** Printers, copiers, scanners and fax machines are purchased by and deployed to small business groups and not shared between units, sections, bureaus, or divisions. The use of personal printers for confidential or special purpose printing is common. The cost of maintaining all of these devices is high.

**IT Strategy:** Evaluate multifunction device technology and analyze DHFS business needs. Where appropriate, replace legacy devices with MFDs or repurpose existing equipment. Phase in multifunction devices purchased and managed by BITS.

### ***E-Mail Technology***

**Description of Challenge:** Enterprise expectation requires DHFS to host its e-mail at DOA, and all agencies should adopt a common @wisconsin.gov address identity. The current DOA "Enterprise" e-mail system does not appear to meet DHFS security, functionality, and availability requirements, and the estimated hosting rate is substantially greater than the cost of continuing to host our own e-mail system.

There are advantages to DHFS users being on a common state e-mail client, and there is a need to improve interoperability and communications between state agencies (such as inter-agency appointment scheduling). Switching e-mail clients presents educational and support challenges for our users.

**IT Strategy:** DHFS is planning the deployment of Microsoft Outlook to all desktops while continuing to use Novell GroupWise (upgraded to v7) as the backend e-mail system. Enhancements to the inter-agency message gateway will be made as part of this project to address interoperability issues with other state agencies. Microsoft Sharepoint technologies are being explored to improve e-mail, file, and collaboration capabilities. A more comprehensive e-mail hosting cost/benefit analysis will be completed in order to determine the next steps.

### ***Office Productivity Suite and Core Desktop Software Upgrades***

**Description of Challenge:** As new applications are developed and integrated with the desktop environment, core desktop software such as the operating system eventually must be upgraded. We are anticipating a demand for functionality upgrades to the office productivity suite (and other software such as Windows Media Player) as those features are utilized in other organizations and at employees' homes. Certain Microsoft web applications such as Great Plains are designed to work best with the latest Microsoft web browser (Internet Explorer).

**IT Strategy:** We are pursuing the upgrade of the Internet Explorer web browser, which will be a good indicator of application compatibility with other core software upgrades down the road such as Media Player v11 and the Windows Vista operating system. The business need for Office 2007 and possible deployment plans will be evaluated over the next year or longer, possibly linking the Office 2007 upgrade to a Windows Vista deployment. A new desktop operating system will not be adopted until a substantial amount of desktop hardware has reached end-of-lifecycle and requires replacement.

### ***Core Backend Application Technology Upgrades***

**Description of Challenge:** DHFS has several applications developed on legacy platforms and technologies as well as many Microsoft Access databases. In addition, several core application technologies need to be upgraded in order to support continued application development and maintenance. Extensive testing and coordination of

resources is required for each initiative. DHFS must maintain supported platforms for production systems.

- Oracle Database 9i to 10g Upgrade and Platform Change
- Microsoft SQL Server Database 2000 to 2005 Upgrade
- IBM WebSphere Web Application Server v5 to v(?) Upgrade
- Novell iChain Identity Management 2.1 to 2.3 Upgrade
- Novell File, Print, Directory Services
- Storage Area Network (SAN) Expansion
- Microsoft Active Directory Enhancements
- Citrix System Redesign and Upgrade

**IT Strategy:** DHFS plans to migrate to standard Oracle, Java and web-based platforms, where feasible, and reduce or eliminate legacy technologies, such as PowerBuilder, Visual Basic, FoxPro, etc. Also, we plan to migrate critical Microsoft Access applications to enterprise databases. Upgrades will be individually and collectively evaluated, resulting in the generation of issue/decision papers so that we can properly prioritize and consider all viable options and their risk and impact. Most of the projects can proceed in parallel without significant resource conflicts.

### ***Server Consolidation***

**Description of Challenge:** Enterprise expectation requires DHFS to work towards hosting servers at DOA. DOA timetables and priorities have changed, focusing consolidation efforts on a limited number of agencies and services.

**IT Strategy:** DHFS will take advantage of new DOA IT services and contracts when available that meet DHFS requirements at the best value to the state. BITS will continue to support new DHFS business initiatives and prioritize the use of its limited resources based on the value of each initiative to DHFS. DHFS will take a “service-by-service” and “application-by-application” approach to server consolidation as opposed to a “server-by-server” approach.

## **Organization Architecture**

### **Definition of Organization Architecture**

To fulfill the other IT architecture strategies, the Department will develop and support an organization structure that optimizes the use of its IT staff resources and administrative processes. It will maximize the talents and expertise of all employees toward efficient and effective technology use. The organization architecture is the human resource framework of IT. To successfully leverage technology in its business functions, the Department requires skills and expertise in the following core IT competencies: external service provider management, desktop and customer support, Internet/intranet use, applications development, data and database administration, testing, research, enterprise architecture, information resource management, job production, security, IT consultancy, policy development, project management, strategic planning, and budget development.

### **Proposed State-Wide and Agency Reorganizations**

**Description of Challenge:** Given the recent announcements that the state will create a new "Department of Children and Families" and the Department of Health and Family Services will become the "Department of Health", a number of IT challenges will need to be addressed. The physical movement of programs, staffing may require transitioning of systems either physically or virtually to the new department. In addition, various reorganizations planned within DHFS will require realignment of IT staffing to new functions and activities.

**IT Strategy:** BITS will work with program areas affected by the reorganizations, for instance the current DHFS Division of Children and Family Services and the WiSACWIS system, to develop a transition plan and identify both technology that will need to be physically moved to accommodate the needs of the new departments and staffing needs. The most feasible, cost-effective and manageable solution(s) will be identified to provide support to the new departments. In some instances, it may become evident that physical movement of, especially technology, may not be the best solution but rather providing connectivity to systems may result in the solution desired, in that case, hosting of the systems might remain as they are today.

### **Bureau of Information and Technology Services (BITS)**

**Description of Challenge:** Bureau of Information Services (BIS) was renamed in 2006 to BITS. BIS did not have the full support of all department programs in the scope of services that it provided. Some divisions used BIS services heavily while others had limited to purely an administrative contact with the bureau. In addition, the bureau staff had limited skills in current, emerging needs of the department, and BIS' staffing levels fell due to the state consolidation effort or to positions at other agencies.

**IT Strategy:** BITS has identified and initiated a **competency development program** to enhance its staff skills in areas that are currently needed by department programs, management and staff. The competency areas include:

- Project Management

- Project Delivery and Implementation (system roll-out, configuration, testing, documentation and training)
- Business Intelligence, defined as:
  - GIS – Geographic Information Systems
  - DW – Data Warehousing
  - Reporting e.g., Business Objects
- Systems Analysis & Design; Problem-Solving; Research & Development
- Strategic IT Planning
- Enterprise Solutions:
  - Technical Architecture
  - Information Architecture
  - Security
- Small-Scale, Web-based, Application Development
- Contract Administration
- Quality Assurance

In addition to competency development, BITS filled several vacancies and initiated an internal marketing effort to persuade the use of internal resources for projects. This effort has proven successful with increased acceptance and support from the department over time.

### ***Continuity of Operations Plan (COOP)***

**Description of Challenge:** DHFS has developed an IT COOP plan based on DOA guidelines and standards. Work continues on the plan to identify resumption priorities and conduct both table-top and functional exercises to evaluate the plan's effectiveness. A major challenge for resumption of IT services is that it will be very time-consuming to acquire/procure equipment, bring back base infrastructure and load data from tapes. With more than 26 Terabytes of data on DHFS servers, DHFS cannot meet business Recovery Time Objectives (RTOs). A server-based recovery will cost the department at least \$1.2 million dollars; the recovery time will heavily depend on equipment availability. Establishing a redundant or mirrored site of all of DHFS' SAN environment could have a one-time cost between \$650,000 to \$900,000 to plus on-going maintenance and operations costs.

**IT Strategy:** DHFS is evaluating cost-effective and feasible options to establish a mirrored data site at its alternate site – Mendota Mental Health Institute (MMHI), at a vendor hosting provider or at DET. In addition, DHFS has developed a minimum communication option to recover (a) basic email service, (b) Internet service, and (c) Intranet service at a cost of approximately \$55,000. The goal of this initiative is to be able to quickly provide basic communication services to the public, staff and management in the event of a disruption. Also, BITS has started working on an internal operations improvement project to implement a Library Management System to organize and maintain accurate and current major system documents to be available for any recovery teams in the event of a major disruption to IT operations.

### ***IT Investment Process (ITIP)***

**Description of Challenge:** DHFS' IT projects, systems and management do not follow a consistent department process in selection, control and evaluation. Information about projects is limited and pulled together in an ad-hoc manner when needed. Much of the information about new and on-going projects throughout the department is not known or becomes evident later in the procurement stage of projects. A number of key questions cannot be answered easily:

1. What is the total department investment in IT?
2. Is the department investment in IT made in an efficient manner?
3. Are there collaboration opportunities that can be leveraged from combining multiple projects and efforts?
4. Are the goals of the department aligned with project activities?

**IT Strategy:** DHFS is ready to implement two major IT policies for the department. First, an **IT Investment Process (ITIP)** – a department-wide process to **analyze, prioritize, select, manage and evaluate projects**, in a consistent manner, providing the greatest benefit to the department. The ITIP involves use of specific steps and tools (templates – feasibility study, cost-benefit & risk analysis) to manage all department IT projects using an **IT portfolio management approach**. Secondly, DHFS will implement an **IT Governance Policy** for managing major IT projects and investments, providing projects with adequate levels of oversight, participation and decision-making support. The governance policy defines key stakeholder roles and responsibilities, such as:

- Executive Steering Committee,
- Advisory Committee(s),
- Project/Executive Sponsor(s),
- Business Sponsor(s), and
- Project Manager(s).

### ***IT Project Portfolio (ITPP)***

**Description of Challenge:** IT Project Portfolio management involves (a) having information available about all projects in the department and (b) making decisions about projects as a group to capitalize on economies of scale and collaboration opportunities. DHFS' IT projects are not managed through a portfolio management approach. Project evaluation and selection is handled in silos or if discovered through word of mouth, they are linked to other similar opportunities. Multiple, similar solutions are not uncommon and capitalizing on economies of scale is rare.

**IT Strategy:** DHFS proposes establishing an IT Portfolio Management Process and implementing tools to support and automate the process of (a) reporting on projects, (b) grouping projects, (c) evaluating the portfolio, and (d) providing a dashboard for decision-making.

## **Security Architecture**

### **Definition of Security Architecture**

Efficient and effective security management is critical to protecting the availability, integrity, and confidentiality of our electronic information. We must closely monitor our security tools and processes to ensure compliance with federal and state laws and regulations, and consistency with sound security practices. Our employees must be knowledgeable about the Department's IT security policies and their security responsibilities. Information security officers must have skills in all aspects of security from using monitoring tools to reviewing security reports, to setting internal security procedures. DHFS will work closely with public and private business partners, especially DOA as it hosts increasingly more of our IT services.

## **Governance**

**Description of Challenge:** Information is the lifeblood of our organization. Managing security effectively is a critical element of protecting client and employee information assets. The involvement of multiple areas and multiple competencies is crucial if we are to succeed in meeting our challenges. Our present security structure did not sufficiently cross functional lines to address our challenges. These challenges include:

- Compliance with Federal and State law
- Audit compliance
- Awareness training and education
- Protection of Information Assets

**IT Strategy:** Our current security structure depended in large part on the knowledge of Security Officers within each area of the Department. These officers function as a primary point of contact for all security related questions within their areas. As such, they are expected to be familiar with security policies and procedures, along with current initiatives that can affect information assets.

The Security Officers represent only one of the groups that are working on our security challenges. An appropriate governance group was needed to cross functional lines and bring together the various areas needed for a comprehensive response not only to security challenges, but to audit, privacy and compliance as well. To address this need, the CAPS (Compliance, Audit, Privacy and Security) Team was formed in late 2006. The CAPS Team unites the areas of compliance, audit, privacy and security to develop and champion policies, procedures, education and techniques for the appropriate use of Information Assets. This unique partnership is positioned to serve as a central resource for issues or concerns related to the use of information assets. For 2007, areas of concentration will be:

- Conduct analysis of existing privacy and security policies and procedures, revise, update where necessary.
- Update privacy and security awareness campaigns.
- Implement signing of Confidentiality and Non-Disclosure Agreements at time of the annual PPD.

- Centralize, consolidate, and revise privacy and security intranet information into one location on the DHFS web portal.
- Coordinate Privacy and Security audits.
- Revise and expand privacy and security training.

## ***Technology***

**Description of Challenge:** An appropriately educated and informed employee group is the first line of defense to protect our information assets. Without the appropriate tools however, even the most well intentioned person can expose information inappropriately. Of particular concern:

- Data on laptops (other storage devices are being considered as well).
- Data within emails.

**IT Strategy:** Externally, we are partnering with DOA and other State Agencies to determine if an enterprise solution is feasible. Internally, we are testing a solution that would allow the remote destruction of data within laptops that are reported lost or stolen. For 2007, areas of concentration will be:

- Determine enterprise email encryption solution.
- Determine enterprise disk encryption solution.
- Determine enterprise data recovery/destruction solution. Failing that:
  - Implement spot data recovery/destruction solution for DHFS high risk areas.
- Security awareness and training for the previous.

## Appendix A IT Architecture Definitions

### Applications Architecture

Applications are the automated programs people use to do their work and accomplish the Department's mission. The application architecture provides the structure for developing the Department's electronic business applications. It includes an application development methodology responsive to our business needs and the appropriate technical environment for creating and deploying applications. The application architecture will:

- Deliver applications that are business driven, affordable, scalable, easy to maintain, adaptable to new business requirements, and portable across one or more hardware platforms and operating systems.
- Promote partnering between the user community and IT staff.
- Use modern technology tools.
- Leverage statewide technology initiatives.

### Strategies

- Apply effective project management and application development methodologies.
  - Use the IT Business Consultants as the primary client liaison to assist divisions and offices with defining and articulating their business requirements, deliverables, and scope throughout a project's life cycle. The consultants will ensure IT solutions are tailored to a business unit's unique needs.
  - Use a decision-making, project approval process for determining when to proceed with internal application development versus procuring either an off-the-shelf application package or design services from an outside contractor.
  - Reuse application components to the greatest extent possible when developing internal applications.
  - Design applications to meet business requirements within fiscal and time constraints.
  - Include operations and maintenance costs in application development funding requests.
  - Migrate to Web-based application development technologies.
  - Apply consistent application security design across platforms and integrate security in the application development methodology.
  - Develop and implement an evaluation system to assure our processes are effective and efficient.
- Develop a flexible, integrated health and human services applications architecture.
  - Support solution choices appropriate to meet business needs from small to large systems development.
  - Employ a multi-tier, modular application architecture by designing separate presentation, business logic, and database components to improve maintainability and enable reuse.
- Acquire and maintain appropriate application development tools.
  - Use commercial-off-the-shelf products that are industry leaders with a solid growth path.
  - Employ development tool workbenches on large development projects to integrate modeling, construction, and testing.
  - Establish and maintain development tool standards to achieve consistency across the enterprise.

- Develop and procure applications that use enterprise data management principles and common data standards.
- License and sell, when appropriate and permissible, the Department's applications to outside entities, such as health departments in other states.
- Leverage statewide and department-wide enterprise applications when appropriate.

### **Data Architecture**

The Department will accomplish its mission through the expert use of accurate, timely, and comprehensive information. The data architecture provides the framework for integrating, managing, and using department data. The data architecture will:

- Be responsive to our business needs and goals.
- Provide for data integration.
- Enhance program areas' ability to more easily meet state and federal reporting requirements and assess program outcomes.
- Improve cross-program reporting and analysis for enhanced enterprise decision making.
- Improve data access, sharing, integrity, and security.

### **Strategies**

- Provide and implement the tools, procedures, and practices required to manage information as a valuable resource.
  - Create and implement common data standards for defining, using, and sharing our data.
  - Inform and guide program areas on available technology options for data warehousing and data marts.
  - Use data modeling in our applications development methodology to support a more integrated data environment.
  - Minimize redundant data capture and storage.
- Implement electronic document and records management.
- Use address standardization and verification technologies to enhance the quality of address information.
- Strengthen security mechanisms to ensure data integrity and protection of confidential/private data.
- Implement "fair information practices" for protecting privacy of personal information, such as those promulgated in the Health Insurance Portability and Accountability Act (HIPAA) privacy rule.

### **Technology Architecture**

- Presently, the Department primarily leverages its own technology architecture to manage and deliver program services. Upon completion of technical consolidation, the Department will leverage the State's enterprise technology architecture provisioned by the Department of Administration (DOA) through the Shared Information Services data center. The technology architecture provides our hardware and software direction. It includes the desktop computers, portable computing devices, servers, routers, switches, gateways, wiring; and software products required to host and operate our applications, perform office automation functions, and communicate and conduct business electronically. The technical architecture will:
  - Be based on standards to support state and department-wide systems integration.

- Sustain adequate technology infrastructure capacity to meet our current and future business and program needs.
- Be cost effective to support and maintain business processes.
- Be reliable, robust, and adaptable to change.
- Enable the Department to leverage technology opportunities in fulfilling its business strategies.

### **Strategies**

- Fully engage in the consolidation of DHFS technical infrastructure and services with DOA's Division of Enterprise Technology (DET) to continue efficient and effective support for DHFS programs. Sustain existing DHFS technical infrastructure until completion of consolidation.
- Define and implement effective problem reporting and change management processes with our external technical service providers.
- Research and implement new assistive technologies, when appropriate.
- Employ portable and/or wireless solutions for business needs, such as laptop computers, tablets, personal digital assistants, and cellular devices, when appropriate.

### **Organization Architecture**

To fulfill the other IT architecture strategies, the Department will develop and support an organizational structure that optimizes the use of its IT staff resources and administrative processes. It will maximize the talents and expertise of all employees toward efficient and effective technology use. The organizational architecture is IT's human resource framework. To successfully leverage technology in its business functions, the Department requires skills and expertise in the following core IT competencies: external service provider management, desktop and customer support, Internet/intranet use, applications development, data and database administration, testing, research, enterprise architecture, information resource management, job production, security, IT consultancy, policy development, project management, strategic planning, and budget development. The organizational architecture will enable the Department to:

- Assign and train staff to support core IT competencies.
- Provide an appropriate level of IT-related training to all employees.
- Effectively use external service providers where cost effective.
- Use consultants and contractors when and where appropriate to extend resources and supplement skills and expertise.
- Manage projects effectively—on time and within budget.

### **Strategies**

- Define and communicate IT staff roles and responsibilities, policies, procedures, standards, and decision-making processes.
- Enhance the IT staff's customer relationship management skills and expertise.
- Establish processes for improving coordination and communication between IT staff, internal/external end users, and business partners.
- Invest in the appropriate level of IT training for all Department employees to maximize technology use and instill good personal computing habits.
- Acquire appropriate skills for Department IT service providers to apply new technologies through training, recruitment, and contract services.
- Employ a consistent, formal, project management methodology for developing and implementing IT projects.

- Further promote project management best practices by using a consistent and formal project management methodology, facilitating project portfolio management, certifying Project Managers, and developing/maintaining a DHFS Project Management Training track.
- Improve contract management and oversight capabilities.
- Coordinate technical activities with other agencies to identify opportunities for collaboration to achieve potential staff and/or technology efficiencies.
- Define and implement an optimum governance structure and decision-making process for IT strategies and operations.
- Fully participate in the strategic IT direction setting at the statewide level.

## **Security Architecture**

Efficient and effective security management is critical to protecting the availability, integrity, and confidentiality of our electronic information. We must closely monitor our security tools and processes to ensure compliance with federal and state laws and regulations, and consistency with sound security practices. Our employees must be knowledgeable about the Department's IT security policies and their security responsibilities. As well, information security officers must have skills in all aspects of security, from using monitoring tools, to reviewing security reports, to setting internal security procedures. DHFS will work closely with public and private business partners, especially DET as it hosts increasingly more of our IT services. The security architecture will:

- Mitigate security risks to the network, systems, applications, and data.
- Raise employee security awareness.

## **Strategies**

- Migrate from a provider to a user of IT security services: determine security performance requirements, establish service level agreements, and monitor service levels.
- Create security plans and reviews to meet federal, State, and Department requirements, including HIPAA and 45 CFR 95.621 requirements for federally funded systems.
  - Establish a process to classify the Department's information assets and apply the appropriate level of security controls.
- Develop, document, and employ an ongoing security risk management process for the network, administrative processes, and computer applications.
  - Implement a recurring risk assessment process.
  - Manage security risks by mitigating vulnerabilities identified in the risk assessment process.
- For IT resources managed by DHFS, use state-of-the-art security technologies and methodologies on the network, servers, and computers to make information accessible to those who need it and protect it from those who do not.
  - Connect each new application to the common security infrastructure and update existing applications as circumstances permit.
  - Identify and authenticate network and application users.
  - Protect network and application integrity through intrusion monitoring, detection, and mitigation.
  - Employ patch management and anti-virus measures on all computers and network servers.
  - Implement secure Internet e-mail.

- Maintain and enhance security infrastructure consistent with statewide direction to ensure technical compatibility.
- Train and educate users and security officers on the State and Department IT security policies, sound security practices/tools, and their responsibilities in protecting the Department's information assets.
  - Maintain an ongoing security awareness program with adequate funding for training and conducting security awareness activities, including publishing articles, pamphlets, posters, and other promotional material.

## Appendix B Mapping of IT Initiatives/Projects to DHFS Business Goals, IT Directions, and IT Architectures.

		Goals vs. Program Strategies							
		Badger Care Plus	Badger Care Plus Expansion to Children/Adults	Family Care Expansion	Medicaid Management Information System (MMIS) Implementation	eHealth	Public Health Information System (PHIS) / including Emergency Preparedness Response	Vital Records	
DHFS Goals	Promote the health & safety of all people in Wisconsin, emphasizing prevention.	•	•	•	•	•	•	•	○
	Foster access to quality, affordable health care & treatment for all people, and manage Medicaid cost effectively.	•	•	•	•	•	•	•	○
	Implement long-term care reform.			•	•				
	Increase opportunities for children to grow up safe, healthy & successful in strong families.	•	•	•	•	○	•	•	
	Provide public services that are effective, efficient & accountable while holding down taxpayer costs.	•	•	•	•	•	•	•	
IT Initiatives	Mobile Technologies					•	•		
	Document Management & Workflow	•	•		•	•	○	•	
	Enterprise Data & Information Management & Integration	•	•	•	•	•	•	•	
	eGovernment Solutions (ePayment, eTraining, etc.)	•	•	○	•	•	○	•	
	IT Governance and Investment Management	•	•	○	•	•	•	•	
	Portfolio Project Management	•	•	•	•	•	•	•	
	Business Intelligence Services (GIS)		○	○	○	•	•	•	
	Business Intelligence Services (Reporting and Decision-Support)	•	•	•	•	•	•	•	
	Business Intelligence Services (Data Warehousing)	•	•	•	•	•	•	•	
		IT Architectures vs. IT Initiatives							
		Mobile Technologies	Document Management	Enterprise Data & Information Management	eGovernment Solutions (ePayment, eTraining, etc.)	IT Governance and Investment Management	Portfolio Project Management	Business Intelligence Services (GIS)	Business Intelligence Services (Reporting and Decision-Support)
IT Architectures	Applications	•	•	•	•	•	•	•	•
	Data	•	•	•	•	•	•	•	•
	Organization	•	•	•	•	•	•	•	•
	Technology	•	•	•	•	•	•	•	•
	Security	•	•	•	•	•	○	•	•
Business Problems & Opportunities	Manual Processes	•	•	•	•		○	•	•
	Excessive Paper	•	•	•	•			○	
	Lack of Information	○	○	•	•		○	•	•
	Lack of Timely Information	•	○	•	•	•	•	•	•
	Lack of Staffing to Support Operational Needs	•	•	•	•	○	•	•	•
<b>Key:</b>									
Strong Association		•							
Medium Association		•							
Weak Association		○							
No Association									

## **Appendix C    Land Information Plan**



**WISCONSIN DEPARTMENT OF HEALTH AND FAMILY SERVICES**

**March 2007**

# **LAND INFORMATION MODERNIZATION AND INTEGRATION PLAN**

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## **I. Executive Summary**

### **A. Agency Identification and Plan Coordinator**

The Wisconsin Department of Health and Family Services (DHFS) is submitting this annual integration plan to the Department of Administration (DOA) as required by statute and in accordance with the most recent instructions (2006) for State Agency Plans to Integrate Land Information. Preparation of this plan was coordinated by:

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### **B. Planning Participants and Contact Persons**

The following individual participated in preparing this plan and is also designated as a contact person:

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### **C. Plan Summary**

DHFS is required by State Statute (Sec. 16.967(6)) to make land information (data with location characteristics, e.g., addresses) available to the public and sharable across state agencies. By integrating land information across agencies, the state intends to “reduce inter-agency duplication, reduce the cost of government and increase the services provided to Wisconsin taxpayers” and achieve “improved analysis, decision support, and administration.”

To help achieve compliance with the above statute and facilitate the management of quality land information and Geographic Information System (GIS)/Land Information Systems (LIS) applications, DHFS established a GIS program in the fall of 1998 to serve the Department. The GIS program promotes the organization’s education and

awareness of the GIS technology and the value of address validation. The program provides a wide range of services and support to the DHFS business areas, including spatial data creation, mapping, GIS consulting and training, support for stand-alone mapping activities in some business and program areas, and address validation.

At the same time, the GIS program continues to investigate and promote enterprise infrastructure to standardize, manage, distribute, and facilitate access to the agency's land-based (geographic) data holdings, pushing the infrastructure to evolve and mature. The goal is to put GIS capabilities directly into the hands of people who will most benefit from its application. Efforts focus on developing and maintaining high quality land information as well as providing easy, secure access to it.

DHFS does create statewide base layers of land information, and if appropriate, share these layers with other divisions and bureaus of the Department, as well as other State agencies.

Additionally, work continues in our Division of Public Health to investigate opportunities for GIS functionality in public health applications and on the Public Health Information Network, hosted by the University of Wisconsin's Division of Information Technology (UW DoIT).

## II. THE FIVE TECHNOLOGY ARCHITECTURES

The following sections provide detailed goals and objectives related to DHFS' overall vision and plan for the collection, maintenance, distribution, and integration of land information, including metadata.

### A. Applications Architecture

The *applications architecture* refers to the automated processes or systems that an organization uses to support its programs and to provide service to its customers.

#### 1. Applications incorporating land information or GIS/LIS:

- **Public Health Information Network (PHIN):** The Division of Public Health is developing the PHIN to address bio-terrorism, disease outbreaks, hazardous material incidents, and other health alerts/tracking necessities. The Division is collaborating with other business units in DHFS, with UW DoIT, the Department of Natural Resources (DNR), and other partners to achieve a responsive and unified approach. The development of a GIS infrastructure and functionality on PHIN is currently being implemented and piloted.

- **Public Health Preparedness:** The Bureau of Information Technology Services (BITS) in DHFS is supporting the Division of Public Health's Preparedness program and initiatives with GIS. Programs like the Strategic National Stockpile (SNS) and Interim Pharmaceutical Stockpile use GIS heavily to determine service areas, travel times, and routes from storage locations to distribution sites. The Preparedness program is far reaching and works closely with Federal agencies, such as the Centers for Disease Control and Prevention (CDC), as well as other state agencies such as Wisconsin Emergency Management.
  
- **Cancer Reporting System (CRS):**
  1. Investigations of geocode discrepancies (field reported data vs Centrus-determined.) Findings from collaborative efforts with North Carolina Center for Health Statistics presented at NAACCR annual meeting, Regina, Saskatchewan, June 2006.
  2. Development of approaches to understanding and presenting geocode discrepancies and uncertainties presented at ESRI International User Conference, San Diego, August, 2006
  3. Collaborative (with North Carolina) development of point-of-service address validation and standardization application with USPS Wisconsin data in .NET. First working prototype completed in January 2007. Presentation and demonstration at State GIS Conference, Winston-Salem, NC, March 2007. (Developed for easy deployment as Web Application.)
  4. Participation with Harvard School of Public Health Geocoding Project (Boston, MA, June 2006) with development of Wisconsin datasets for geographical analysis of cancer incidence and SES
  5. Working member of NAACCR GIS Committee preparing (2007) manual of informed geocoding practices for central disease registries in US and Canada.
  6. Morgridge-Foundation supported collaboration (Since April 2006) with UW Geography Department in developing regional Wisconsin demographic atlas of medical care
  7. Currently preparing two papers for publication by URISA and presentation at URISA GIS in Public Health Conference (New Orleans, May 2007)
    - a. "Right From The Start: Low-Cost Options For In-Field Address Validation"
    - b. "Mapping Health Care Resources By Urban Service Areas in Wisconsin: Why and How"
  
- **Wisconsin Statewide Automated Child Welfare Information System (WISACWIS):** The Department implemented a comprehensive child welfare case management information system in all Wisconsin counties. The automated system meets Federal reporting requirements defined by SACWIS regulations, assists the Department in complying with Wisconsin Act 303 which mandated the

State's assumption of child welfare responsibilities in Milwaukee County, and standardizes child welfare practice across all counties. This system uses FINALIST to validate zip codes. FINALIST is a service provided by the Department of Administration's (DOA) Division of Enterprise Technology (DET).

- ❑ **Wisconsin Asbestos and Lead Database Online (WALDO):** The Wisconsin Asbestos and Lead Database Online software development project was mandated by Wisconsin 1999 Assembly Bill 806 Act 113 Section 27 (254.179.1,d,e), Section 32.2,3,4,5, and Section 33.2 (Lead-Free/Lead-Safe Certificate Registry). The mandate required the development of a lead-free/lead-safe property registry database for the entire State. This system also uses the address standardization software, FINALIST, to validate addresses and determine the correct zip code.
- ❑ **Wisconsin Childhood Lead Poisoning Prevention Program (WCLPPP):** WCLPPP is responsible for protecting children from lead poisoning. By testing children, tracking their locations, and analyzing the data using GIS, WCLPPP has built a map series to represent blood lead levels in every Wisconsin county, as well as many of the larger cities in the State. The program's mapping efforts are effective and are widely used throughout the local health departments in the state. In October 2004, this map series was placed on the Lead-Safe Wisconsin website ([dhfs.wisconsin.gov/lead/Maps/index.htm](http://dhfs.wisconsin.gov/lead/Maps/index.htm)) to increase the availability of these maps to local health departments, community partners, health care providers, and the general public.
- ❑ **Health Maintenance Organization (HMO) Access:** The Contract Monitor Section in the Division of Health Care Financing is responsible for certifying Health Maintenance Organizations (HMOs) to provide Medicaid Services in certain regions of the state. By using GIS, the Section is able to better analyze the adequacy of each HMO's provider network to determine whether the HMO can provide sufficient access to health care in the area they propose to cover. Before contracting with the HMO, it is important to conduct an in-depth evaluation of the HMO's network adequacy. GIS is the most accurate and efficient way to accomplish this evaluation.
- ❑ **Locations of Child Entities and Address Geocoding:** The Division of Disability and Elder Services (DDES) uses GIS to map the locations of places frequented by children (e.g., day care facilities, parks, shelters, schools, etc.) in varying parts of the state. The Division uses these maps to determine suitable housing locations (not frequented by children) for sexual predators being placed on supervised release in the community.
- ❑ **Office of Quality Assurance:** The Office of Quality Assurance (OQA) has a need for highly accurate geocodes for facilities they regulate (e.g., nursing homes, hospitals, hospices, and assisted living facilities) to enable the production of various maps displaying the locations of these facilities. The Office handles this need by sending files containing facility data to the Bureau of Information Technology Services (BITS), which offers GIS services for geocoding.

An enterprise pilot application is underway to improve citizen access to OQA information (Health & Residential Care options and facility information) through the Internet. This initiative will result in a web query that provides individuals and families information about Wisconsin residential care options and directs them to a county human service agency for residential options counseling. This project integrates facility and county demographic information with the new enterprise GIS infrastructure to improve citizen access to information about local health and residential care for the elderly and people with disabilities.

- ❑ **National Child Abuse and Neglect Data System (NCANDS):** Once a year, Wisconsin is required to send to the federal government a file of NCANDS data. This data resides on WISACWIS. The file is run through a federal validation utility and uses a Victim Frequency Report as the basis for generating GIS maps showing the number of abused and neglected children per county. The maps are used for analysis, presentations, and other reports.
  - ❑ **Public Health Air Surveillance Evaluation (PHASE) Project:** The overall purpose of this project is to assess the strengths and limitations of various air quality interpolation methods derived by the Environmental Protection Agency (EPA) to predict asthma and cardiovascular disease-related admissions to hospitals in Wisconsin. GIS plays a vital role in the project. It enables the examination of the regional variability in ozone and particulate matter (PM) and the assignment of ozone and PM exposure estimates to patients, and shows the impact varying exposure assignment methods have on the relation between air quality measures and asthma/cardiovascular disease.
  - ❑ **Organ & Tissue Donor Program - Donor Intent Web Application:** This project creates a web application to import data from Department of Transportation (DOT) on the donor decisions of drivers and identification (ID) holders throughout the state and the creation of reports and maps. These reports will steer outreach and public education efforts aimed at increasing the number of people who say "yes" to donation, ultimately saving the lives of people waiting for transplants.
  - ❑ **Environmental Public Health Tracking – (EPHT):** Data from multiple environmental monitoring and health datasets are being linked to improve environmental health surveillance activities within the state. The ability to use GIS systems as tools to accurately link environmental monitoring and public health data is at the core of these activities. Projects to date include:
    - The linkage of childhood cancer information from the Wisconsin Cancer Registry with several site specific environmental source databases housed within the Department of Natural Resources (DNR).
    - The development of hazard scores for estimating the potential for exposure to agricultural pesticides in the state of Wisconsin. This involved the integration of data from the Department of Agriculture, Trade, and Consumer Protection (DATCP) and the DNR as well as resources developed within DHFS.
2. **High-level and agency-wide land information integration efforts:** Currently, DHFS does not have any integrated land information. However, the PHIN initiative discussed earlier, as well as some carefully planned out server architecture in BITS,

may provide opportunities in the near future to develop some integrated land information.

3. **Major GIS or Land Information System (LIS) application interfaces developed by DHFS:** Currently the only application interfaces developed by DHFS are with WISACWIS and WALDO. As noted above, both WISACWIS and WALDO interface with the DET Finalist Service.
4. **DHFS business needs that can benefit from WI Enterprise GIS (WEGIS) and leverage local government's investment in Parcel Mapping and Parcel Attributes:** DHFS currently has minimal need for Parcel Mapping and Parcel Attributes. Most of the programs in DHFS deal with confidential personal data that cannot be mapped to the parcel level because personally identifiable information would be revealed. This would not comply with the federal Health Insurance Portability and Accountability Act (HIPAA) standards. A few of the Department's program areas could benefit from parcel data, but their need is small and infrequent. Currently when parcel data is needed, the program area works directly with the unit of government responsible for the data needed.

**Three WEGIS capabilities that will benefit DHFS program areas include:**

□ **Address Standardization and Geocoding**

This is the most immediate need for DHFS. There are many program areas and applications collecting address data, following addressing standards, and validating their address data to a varying level of sophistication, but none do it consistently across similar program areas or follow the same standards.

With a standard addressing service available for everyone to use, the Department's program areas could follow the same standards, validate their data efficiently and precisely the same way, and be confident their data is address-level accurate. Having address-level accuracy would increase service delivery, lower program costs, and allow programs to better manage their programs and serve their customers.

□ **GIS Data repository**

DHFS has a need for a GIS data repository. Because DHFS consumes a large amount of base data (Counties, Minor Civil Divisions (MCD's), Transportation, Zip Codes, Hydrography, etc.) from other agencies, a repository would be an efficient way for DHFS to get the data that is needed and not duplicate it.

For the data DHFS does create (e.g., hospitals, nursing homes, local health departments, etc.), DHFS could easily upload and manage the data in the repository instead of having to regenerate it every time it is needed.

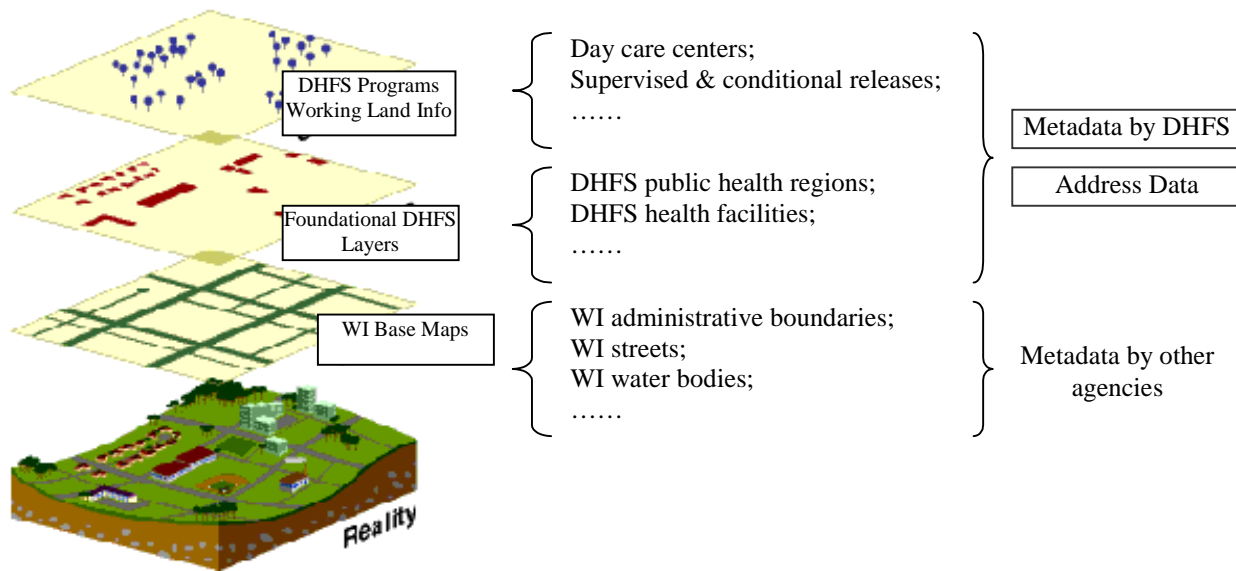
□ **Technical and Administrative Support**

DHFS would benefit from DOA being able to offer technical and administrative support in the form of data sharing agreements, enterprise GIS licensing agreements, assistance with architecture decisions and implementation (especially aligning with consolidation initiatives).

## B. Information Architecture

The *information architecture* refers to the organization or design of data. It provides a clear definition of how the data is structured, collected, shared, maintained, and stored from both the IT and business community perspectives.

The DHFS Land Information Modernization and Integration Plan's information architecture is depicted in the following figure. Details of each category are further described.



*WI Base Maps and shared State data:* This category includes the TIGER system, census, and base maps from the DOA, DNR, and DOT. Spatial data from TeleAtlas North America, Environmental Systems Research Institute (ESRI), and potential other sources are also included. DHFS is a consumer or user of this data and respective data layers. The DHFS GIS program acquires this data from the agencies listed above, as well as from the US Census Bureau and the UW Applied Population Lab. The GIS program manages and distributes this data internally.

*DHFS Foundational Land Information:* This category includes general data layers used across program areas in DHFS. These data contents are provided by DHFS business areas and authorized by them to be processed, spatially enabled, and shared across agencies and with the public. With authorization from the custodial business areas, the DHFS GIS program facilitates the acquisition of the source data; and the creation, maintenance, and sharing of land information within this category.

*DHFS Programs' Working Land Information:* This category includes DHFS programs' business-specific data. Some of this information may be sensitive, either because it may reveal personally identifiable information or protected health information, or because its usage is restricted by the business area. The GIS program's information projects are guided by DHFS's general data security rules and are conducted according to specific

agreements with the program areas. The GIS program also works with the DHFS business areas to facilitate the sharing of data with other organizations, agencies, and the public as appropriate.

*DHFS Address Data Quality:* Most of the DHFS land information is related to postal addresses. The ability to validate an address and thereby improve its quality is very important to DHFS. Valid addresses help DHFS ensure that notifications and delivery of benefits and services reach their locations in the most cost-effective and efficient manner. A valid address can also aid in detection of fraudulent activity. Furthermore, the enhanced data quality allows for more accurate geocoding, better spatial analysis, and better spatial representation in GIS and mapping applications.

*Metadata by DHFS:* The GIS program facilitates the creation and maintenance of metadata for DHFS Foundational Land Information and Programs' Working Land Information. This metadata is shared along with the corresponding data layers.

**1. Major land information datasets and metadata:** The following list is a small representation of the types of layers DHFS uses and is not a comprehensive collection of the Department's datasets. DHFS assumes custodianship of some of the layers, and retrieves some from other agencies. The best way to find out more about each layer is to contact the GIS analyst at DHFS (see contact information at the beginning of this document).

- DHFS Business Regions: Five business regions geographically represented on the State background.
- DHFS Regional Offices: Locations of the five regional offices.
- DHFS Facilities/Institutions: Locations of the DHFS institutions.
- Hospital Locations: Locations of hospitals regulated by DHFS.
- Nursing Homes: Locations of nursing homes regulated by DHFS.
- Day Care Centers: Locations of day care centers regulated by DHFS.
- Hospices: Locations of hospices regulated by DHFS.
- Home Health Agencies (HHA's): Locations of HHA's regulated by DHFS.
- Community-Based Residential Facilities (CBRF's): Locations of CBRF's regulated by DHFS.

**2. Mechanisms of access or distribution of land information and metadata:** In the event DHFS shares data internally or externally, DHFS primarily uses e-mail. If file sizes are too large, CD's are used.

**3. Major land information or metadata available or planned to be available through the DHFS Web site:** DHFS does not have any data available on the DHFS Web site, WISCLINC, or other Web sites at this time.

**4. Policies, content, or technical standards used for the collection and use of land information or metadata:** DHFS follows Federal Geographic Data Committee (FGDC) standards for metadata.

- 5. Major land information relating to or depending upon other state agency land information for technical integration:** DHFS depends on street and roads data, water bodies, Wisconsin administrative boundaries, and county boundaries from other agencies such as the DNR, DOA, DATCP, and DOT.
- 6. Land information from outside sources required to carry out day-to-day responsibilities, functions, and statutory requirements:** DHFS uses several base layers in our day-to-day operations, and gets those layers from DOA and uses the base layers in our maps. Those layers include but are not limited to county boundaries, roads, land use, hydrography, minor civil divisions, census polygons, orthophotos, digital raster graphics, and school districts. DHFS has not run into any obstacles in obtaining this data at the state level. However, when data is needed from county or municipal government, data collection is more difficult. This is primarily because it is harder to find the right contact person.
- 7. Software used to develop and provide access to geospatial metadata:** DHFS uses ArcCatalog for metadata purposes, and it generates metadata consistent with the FGDC content standards for digital geospatial metadata.
- 8. Access method to DHFS metadata for outside agency use:** Currently, DHFS does not publish data on a Web site; therefore, access methodology is for the outside agency to contact the Department's GIS Analyst. See the contact information at the beginning of this document.
- 9. Plans for future metadata collection and maintenance:** DHFS will continue to collect and maintain metadata on an as needed basis.

## **C. Technology Architecture**

The *technology architecture* refers to the hardware, software, systems, methods, and standards an organization uses to develop and operate computer systems and communication networks for the transmission of data, voice, and video.

This section addresses DHFS' approach to GIS technology implementation and includes a discussion of our vision of future technology architecture, software purchases, and upgrades.

The DHFS Land Information Modernization and Integration Plan's technology architecture focuses on delivering efficient and cost-effective desktop software to those who need it. This architecture consists of the items listed below. The components are also explained, and the current status and next-step plans for each component are described.

## 1. DESKTOP ITEMS

### Software

#### **ArcGIS Desktop products and extensions**

❑ **ArcView 9.1 and ArcView 9.2**

DHFS currently uses ESRI ArcView 9.x for desktop mapping projects and plans to continue using ESRI as the vendor for all of our GIS software needs. Approximately 20 other people throughout the Department use ArcView 9.x as well. These software tools are used to support the mapping and analytical needs of DHFS business programs. See Applications Architecture section for examples on how DHFS applies the desktop software.

❑ **ArcGIS Publisher 9 and ArcReader 9**

ArcGIS Publisher 9 is a tool that allows the map creator to generate PDF-like maps and disseminate them easily to a mass of people via email or the Internet. ArcReader is a free map-viewing tool (akin to Adobe Reader) used to view, query, print, and analyze maps but can not be used for the maintenance of the maps. Although DHFS has not yet formulated any plans to disseminate this tool to DHFS staff, there is a lot of value in the product, and staff will be investigating its further use in the Department.

❑ **Spatial Analyst**

This extension was purchased in the summer of 2005 for use in the Division of Public Health's Tracking program. The Tracking program has a tremendous need to model environmental layers and link health outcomes to those environmental models. Spatial Analyst is used to generate the models.

❑ **Network Analyst**

The Network Analyst extension is used primarily for creating service areas and routing networks. Used mainly for the SNS project and analysis from one facility type (usually a storage facility) to another (distribution site), network analyst has been invaluable in determining what distribution facilities are closest to storage facilities, as well as determining approximate travel times and routes.

#### **Group 1 Centrus Desktop**

Centrus Desktop is used for address standardization and geocoding. DHFS currently has two licenses. One license belongs to the GIS Analyst, and the other belongs to the GIS Resource Center laptop. These two licenses sufficiently serve the needs of the agency. Centrus provides DHFS with a quality solution at a reasonable price. DHFS has not found a better solution to geocoding needs. DHFS is satisfied with this implementation and will continue to maintain and update it.

### Shared Resources

#### **GIS Resource Center**

In the winter of 2005-2006, DHFS established a shared GIS workstation (hardware and software) as a resource for the entire agency. The workstation is a single computer available to anyone who needs to do GIS-related activities. It can be used

for training, education, research, project work, and geocoding. The GIS staff manages, monitors, and supports the Resource Center. GIS staff also assists agency staff in effectively using the center.

#### **Custom ArcView Development**

The GIS staff are working to provide custom ArcView development to the customers who rely heavily on the same information, do repetitive tasks, and do not need the full suite of tools and functionality in the standard out-of-the-box installation of ArcView. This customized development is targeted at those users who want to achieve efficiencies in daily routines.

### **2. SERVER ITEMS**

Given the State's direction to consolidate IT infrastructure and services, DHFS is carefully investing in GIS server infrastructure. The Department promotes a state enterprise solution for a networked GIS technology architecture and works with the State Geographic Information Officer at DOA to ensure investments are appropriate for DHFS. DHFS will focus on developing Intranet and Internet capabilities for land information sharing and business applications to provide the best cost/benefit solution for accessing shared land information and basic GIS functions. DHFS is promoting sharing resources whenever practical within DHFS and across agencies. At the same time, DHFS continues to research current and emerging technologies and will recommend cost-effective, best-fit solutions for the Department and its business areas.

### **3. For the following product categories, DHFS uses the listed product:**

- Web mapping software: ArcIMS/ArcGIS Server/ArcSDE/ArcInfo
- Group 1 address geocoding software: Centrus Desktop
- Image processing/remote sensing tools: None
- Document scanning tools: HP Scanner
- CAD (Computer-Aided Drafting): None
- GPS (global positioning systems) tools: Some program areas use GPS
- Raster scanning/vectorization tools: None
- Digitizing tools: None
- Large-format plotting/other output capabilities tools: HP 1050 plotter
- Metadata-collection tools: ArcCatalog

## **D. Organizational Architecture**

The *organizational architecture* refers to the human resources in Information Technology (IT) and land information, and how they are used in support of the organization's mission.

- 1. Formal or informal land information sharing or development agreements currently supported:** DHFS has no current memorandums of understanding (MOU's), agreements, or partners relating to land information. The Department is interested in becoming partners with and developing MOU's with other state agencies, specifically DOA, DOT, WEM, DMA, DATCP, and DNR. If DHFS entered into an agreement, partnership, or MOU with an agency, it would need to follow strict guidelines about information sharing as it relates to HIPAA laws. Refer to the Security Architecture section–Information aspect bullet for more information.
- 2. Other organizational benefits:** Some benefits may be:
  - Back-up technical support when the DHFS GIS Analyst isn't available.
  - Support with new technology implementations.
  - Training.
- 3. Internal agency GIS/LIS-related groups:** A DHFS GIS Technical Users Group was created in 2006 and meets as needed to discuss GIS topics and answer user questions.
- 4. Plans for GIS/LIS training:** No formal training classes are offered at DHFS for its GIS users. However, one-on-one training is available on an as needed basis. DHFS would like to see state-sponsored, ESRI-authorized training in GIS. Specifically, DHFS would like to see training in ArcGIS because it would encompass training in ArcView, ArcEditor, and ArcInfo.

Due to the growing need for GIS services in DHFS, BITS is formulating and developing a GIS competency that is comprised of existing BITS staff with varying skill sets. From DBAs to developers to analysts, the BITS GIS competency team has been created to broaden and deepen the resources available to the GIS service area. Lead by the GIS Analyst, the competency team is being trained on GIS technology and software and, to some extent, being used on projects.
- 5. Anticipated organizational needs:** At this point, the only needs DHFS anticipate are those related to training or technical support.

## **E. Security Architecture**

The following section describes policy or statutory provisions related to homeland security, privacy, cost recovery, liability, legal disclaimers, copyright, or licensing related to land information, mapping, data distribution, usage, and the Internet.

The DHFS Land Information Modernization and Integration Plan's security architecture underscores the close relationship to the other architectures. The Department's implementation of the technology, application, information, and organizational aspects of the security architecture will follow all applicable Department IT security policies.

*Technology aspect:* DHFS relies on and works with the Department's security officers and network team to ensure the proper protection of information systems.

*Application aspect:* DHFS relies on and works with the Department's security officers and network team to ensure proper protection of information applications and data. DHFS works with the business areas to identify the appropriate access levels for certain functions, and uses appropriate tools to manage the accesses by setting user accounts and passwords.

*Information aspect:* DHFS works with the business areas to assess and classify land information in their custody. For example, the Department classifies data as public, for official use only, or confidential/sensitive. DHFS then applies the appropriate level of protection/security controls. DHFS works closely with the business areas to identify security and privacy issues with data sharing and to establish the proper procedures for sharing the data. The Department is required to comply with the HIPAA security and privacy rules dictating the protection of protected health information and personally identifiable information. DHFS adheres to all federal and state laws and directives concerning these types of information.

*Organizational aspect:* DHFS works with the Department's security officers and management, abiding by applicable policies, procedures, directives, etc., to assure a secure environment.

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