
Vermont Department of Health



WIC MIS/EBT WIC MIS Feasibility Study and Cost-Benefit Analysis

Version 1.12

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	<ul style="list-style-type: none"> • Prescribe Food Package • Process participant Changes and Transfers
Nutrition Education, Health Surveillance, And Referrals	<ul style="list-style-type: none"> • Maintain Nutrition Education Data • Perform participant Referrals • Provide Voter Registration Information • Determine Immunization Status
Food Management	<ul style="list-style-type: none"> • Maintain Food Categories/Subcategories • Maintain Foods and Food Package Information • Maintain Food Instrument Data • Maintain UPC/PLU Database and Food Item Not-to-Exceed Amounts
Food Benefit Issuance	<ul style="list-style-type: none"> • Issue Paper Food Instruments • Issue Benefits via EBT
Food Benefit Redemption, Settlement, And Reconciliation	<ul style="list-style-type: none"> • Pay Vendor for Food Instruments Redeemed • Reconcile Food Instruments • Pay Vendor for Food Benefits Redeemed via EBT • Reconcile EBT Benefits
Financial Management	<ul style="list-style-type: none"> • Manage Grants and Budgets • Monitor Program Expenditures • Process Manufacturer Rebates
Caseload Management	<ul style="list-style-type: none"> • Capture and Maintain Caseload Data • Allocate Caseload • Monitor Caseload
Operations Management	<ul style="list-style-type: none"> • Monitor Administrative Operations • Manage participant Outreach • Monitor Customer Service • Provide Survey Capability • Maintain Inventory
Vendor Management	<ul style="list-style-type: none"> • Manage Vendor Peer Groups • Create and Locate Data Records • Maintain Vendor Authorizations • Monitor Vendor Training • Support Vendor Communications

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	<ul style="list-style-type: none"> • Perform Confidential High-Risk Vendor Analysis • Track Compliance Investigations • Track Routine Monitoring • Monitor Sanctions and Appeals • Coordinate with SNAP (Supplemental Nutrition Assistance Program)
Scheduling	<ul style="list-style-type: none"> • Maintain Master Calendar • Manage Appointments • Generate Appointment Notices
System Administration	<ul style="list-style-type: none"> • Maintain System Data Tables • Administer System Security • Manage System • Archive System Data
Reporting	<ul style="list-style-type: none"> • Generate Standard Reports • Conduct Ad Hoc Queries and Generate Reports • Maintain Data Warehouse

3. Vermont WIC Overview

3.1 Current Vermont WIC/Environment

3.1.1 System History

The Vermont WIC program provides direct services to participants, using Vermont Department of Health (VDH) WIC program management staff at the central office and a variety of staff disciplines at the local agency level within VDH district offices. The resulting acquired data is used by VDH staff at the local agency level to provide services, WIC staff at the state agency level to manage the program, VDH health surveillance staff and CDC Nutrition Surveillance staff to monitor the health status of participants, and USDA WIC staff at the regional and national level.

The current Vermont WIC management information system was developed in 1977. It operates on a current model IBM mainframe and utilizes CICS for transaction processing, VSAM for database management, and COBOL and Gener/OL as the programming languages. The mainframe has the ability to host SQL and Web servers and the CICS interface was updated to be web-enabled during 2010. Although the WIC system has been successfully modified to meet federally mandated requirements, only 11 of the 24 current core WIC functions are automated.

Vermont WIC currently has about 23,000 active records, with close to a million in the history file. The legacy system has approximately 120 fields (99 on the data entry form, but there are additional system-generated fields in the data set). Any individual record is updated at least monthly, with some having more frequent activity. When a record is updated, the old information is not retained within the legacy system, but a weekly extract of updated records is transmitted to VDH for retention in a WIC transaction history file.

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Sensitive information in the form of name, birth date, physical measurements, and health risk data is collected and retained, and disclosure of this information could adversely affect individuals and families in the event of identity theft. Occasionally an individual enrolled in WIC is also enrolled in the Secretary of State's *Safe At Home* program. Disclosure of the person's address could put her in physical danger (people enroll in this program if they have been victims of stalking or physical abuse by an intimate partner). Any unauthorized exposure would adversely affect the reputation of the program, which could have an impact on participation. Improper modification, loss or unavailability of information could cause families to lose food benefits.

3.1.2 Current Integration with Programs

Creating a paperless system is a major goal of the WIC program, and a WIC MIS solution will require the close cooperation of the Vermont WIC program, the USDA FNS, DII, AHS, and VDH IT. AHS IT is preparing to implement a new Agency of Human Services Information Systems architecture and a new WIC MIS must be compliant with the Agency's new Core Components. The new MIS system should be integrated with, or able to exchange data with, other programs who share common data interests. WIC has an interest statistically and programmatically with the Immunization program and registry, Children with Special Health Needs and the Childhood Lead Poisoning Prevention program.

There are also national partners who use WIC data. A WIC MIS must be able to capture and transmit CDC-required data sets. The Pediatric Nutrition Surveillance System (PedNSS) and the Pregnancy Surveillance System (PNSS) are program-based surveillance systems that monitor the nutritional status of low-income infants, children, and women in federally funded maternal and child health programs. PedNSS data represent nearly 9 million children from birth to age five, and the majority of PedNSS records (85.8%) are from state WIC Programs. PNSS data also represent approximately 1.3 million pregnant and postpartum women. Both CDC and PNSS surveillance systems provide data that describe prevalence and trends of nutrition, health, and behavioral indicators for mothers and children. CDC requires a transaction file from the contributor that is a flat ASCII data file containing either PedNSS or PNSS transaction records. The transaction file is received electronically using the Secure Data Network (SDN) or on mailed CD-Rom on a monthly or quarterly schedule. While CDC recently announced that the nutrition surveillance systems will be retired after 2011, Vermont WIC may wish to continue to collect these data elements for in-house analysis and reporting.

A wide range of users will need access to the WIC MIS to input data, receive data, or to create reports. Each user has unique needs and requirements. A summary of each user's responsibilities and major system usage is listed below.

Name	Represents	Role
VDH direct service, supervisory and management staff at local level	User	Internal
WIC state level staff	User, Managers	Internal
Health surveillance staff	Data user	Internal
DII System analysts	Current system development, maintenance, management and data migration	Internal
VDH IT development staff	System feasibility, appropriateness,	Internal

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	integration and enhancement	
State /AHS IT Operations staff	System management, oversight and compliance	Internal
USDA WIC staff (regional program and IT, national IT)	Grant Funding entity, program oversight, standards documentation	External
Other VDH and AHS program managers	System integration, data exchange	External and Internal
WIC participants (16,000 individuals)	Recipient of services and benefits	External
CDC Nutrition Surveillance staff	Data recipient	External
Vermont Physicians	Data recipient, Data Originator	External
Vermont Information Technology Leaders (VITL)	Providers of Vermont's Health Information Exchange (VHIE) capacity	External

3.1.3 Problem statement

The problem of	<ul style="list-style-type: none"> • Double data-entry: staff enters participant and household information into the VDH CMIS system in order to obtain individual and household ID numbers. The same information then needs to be entered into the WIC system on the DII mainframe. • The main legacy system is written in COBOL and GENER/OL. It was originally developed in 1976-77, and the last major update was in 1986. Because the system is so old and has had many modifications over the years with varying levels of documentation, each change Vermont WIC makes has unintended consequences that takes weeks to track down and repair. • Because the legacy system is relatively inflexible, many work-arounds are built into it. For example, all date fields were changed from a date format to a number format to address Y2K issues. Vermont WIC is unable to use the national WIC risk codes because the legacy system is limited to two digits and the national codes are three digits. Vermont WIC has a complex system of coding race and ethnicity, because Vermont WIC has a one-character field, implementing the required reporting in the most straightforward way would require 5-7 yes/no fields. There are many other examples. • Vermont WIC staff are using a relatively large number of supplemental systems to meet program needs - an Access data base for food benefit delivery reconciliation, a complex group of linked Excel spreadsheets for preparing data needed for financial reports, another Access data base for authorizing breast pump rentals, the mainframe based FOCUS system for ad hoc reporting from the current legacy system. • The legacy system does not maintain a history file. Historical data is maintained by VDH, but is split among several files reducing the usefulness of the data.
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	<p>Reporting can be accomplished using a 1032 system, but the file linkages needed to produce meaningful reports are complex. Therefore, ad hoc reporting is limited to what one or two knowledgeable people can fit into their available time.</p> <ul style="list-style-type: none"> • Vermont WIC is using a stand-alone scheduling system that does not really meet program needs and is not integrated with other systems. • The legacy system has real-time data entry, however Vermont WIC Clinicians are collecting all information on paper, and data is entered into the system later by clerks due to lack of clinician time and hardware to data enter into the complex legacy system . Edits in the current legacy system limit data entry to a single transaction for each participant interaction. The modifications to the legacy system required to make data entry in clinic possible are costly and likely to cause unanticipated problems in other parts of the legacy system. • The legacy system is set up to work with a paper-based food instrument and home delivery system, rather than EBT;
Affects	<ul style="list-style-type: none"> • VDH direct service, supervisory and management staff at local level • WIC state level staff • Health surveillance staff • DII IT development staff • VDH IT development staff • DII /AHS IT Operations staff • Home delivery vendors (17) (private businesses) • USDA WIC staff (regional program and IT, national IT) • Other VDH and AHS program managers • WIC participants (16,000 individuals) • CDC Nutrition Surveillance staff
The impact of which is	<ul style="list-style-type: none"> • Errors due to manual data manipulation • Redundant systems within the Department of Health • Inefficient use of staff time to maintain reporting • Creation of separate databases to monitor food delivery instruments and vendors, and to create food cost reports
A successful solution would	<ul style="list-style-type: none"> • Consolidate current systems • Reduce staff time spent maintaining reporting • Reduce data entry • Be compliant with USDA and other reporting requirements • Improve the health status of WIC participants • Allow conversion from home delivery to EBT for food benefits

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3.2 Project Coordination and Management

After a thorough analysis of the necessary skills needed for coordination and management of this specific project, the Vermont WIC program as determined that the project coordination and management tasks can be adequately performed through existing state staff and contracts, rather than through a major procurement and contract for project management. In particular, because we intend to transfer an existing operational system and make minor revisions, the effort should be significantly less complicated than developing a system from the “ground up” or one that requires making significant changes. In addition, our current WIC MIS/EBT planning team members are experienced in project management activities and oversight associated with developing, operating and maintaining information systems.

State WIC staff personnel, supported by state staff in collaborating agencies, have various technical skills, which will be invaluable throughout the life cycle of the project. Several staff were involved in previous development projects either in system development, testing or in the training of local agency staff, and implementation of the current WIC EBT card using the SNAP platform. Other staff personnel have held a major role in defining and testing any system changes required because of new state and federal policies. In addition, WIC state staff have written system requirements and monitored the work products of outside contractors for a number of years.

3.2.1 Project Oversight

The primary responsibility for Project Coordination will be the Vermont WIC program Central Office, with Donna Bister, Vermont WIC Director, being assigned with primary oversight responsibility. Oversight activities include:

- Serve as the project's primary Subject Matter Expert (SME), stakeholder and project champion.
- Oversee and approve project plans
- Monitor project progress
- Collaborate and communicate with the other State WIC Management Team members
- Serve as primary liaison between the Vermont WIC program, and contractors
- Approve (or deny) strategic project decisions such as whether the WIC program is ready for user acceptance testing (UAT) and Production Pilot, or whether to impose penalties on contractors should they be out of compliance with their contract
- Serve as final authority regarding all project-related decisions and contractor deliverables in collaboration with VDH IT, AHS IT and DII.

3.2.2 Project Management and Technical Leadership Team Responsibilities

Project Management tasks will continue to be provided through a contracted position, either by continuation of the existing contract or a similar procurement. The current Project Manager is Jeanne Keller of Keller & Fuller, Inc.

Technical Leadership for the project will continue to be provided by VDH IT System Developer III Nancy Rowell.

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3.4 Project Roles and Responsibilities of VDH and Other State Agencies

Several state agencies will participate in or support the project:

Table 3 VT State Agencies and their Roles in Project	
Agency	Role / Responsibility
VDH Information Technology Advisory Team (ITAT)	<ul style="list-style-type: none"> • VDH departmental project approval • VDH IT Resource allocation
Department of Information and Innovation (DII)	<ul style="list-style-type: none"> • Operation of current system • Cleaning of legacy data • Conversion of legacy data • Production migration from legacy to new WIC MIS • Serve as primary stakeholder for state wide interfacing systems, i.e. VISION system • Serve as RFP & contracting SME • Supply system architecture & support
AHS IT	<ul style="list-style-type: none"> • Serve as primary stakeholder for the AHS Core Components interface • Serve as primary stakeholder for Agency Program systems interfacing with WIC • Serve as Network SME
VDH IT	<ul style="list-style-type: none"> • Oversight of ITAT approved projects • Serve as project analysts

The roles and responsibilities of these key stakeholders in the current system, and their roles in development of functional requirements for the new MIS and EBT systems are documented in *Vermont WIC MIS/EBT Project: Vermont WIC Functional Requirements v.3, Sections 3.1 and 3.2* (attached as [Appendix F.](#))

4. Vermont Management Summary

4.1 Vermont WIC Organization

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides specific nutritious foods, nutrition and breastfeeding education, and referrals to pregnant, breastfeeding and postpartum women, infants and children up to five years of age who are determined to be at nutritional risk and meet income guidelines. Vermont serves approximately 16,000 participants, in 10,000 households, monthly. The annual unduplicated count of WIC participants in Vermont is approximately 24,000. The WIC Program is funded by the United States Department of Agriculture (USDA), governed by Federal Regulations contained in the Federal Register 7 CFR Part 246.

Vermont WIC services for participants are provided throughout the state by 12 local agencies, located in VDH district offices. District offices are managed by the Office of Local Health within

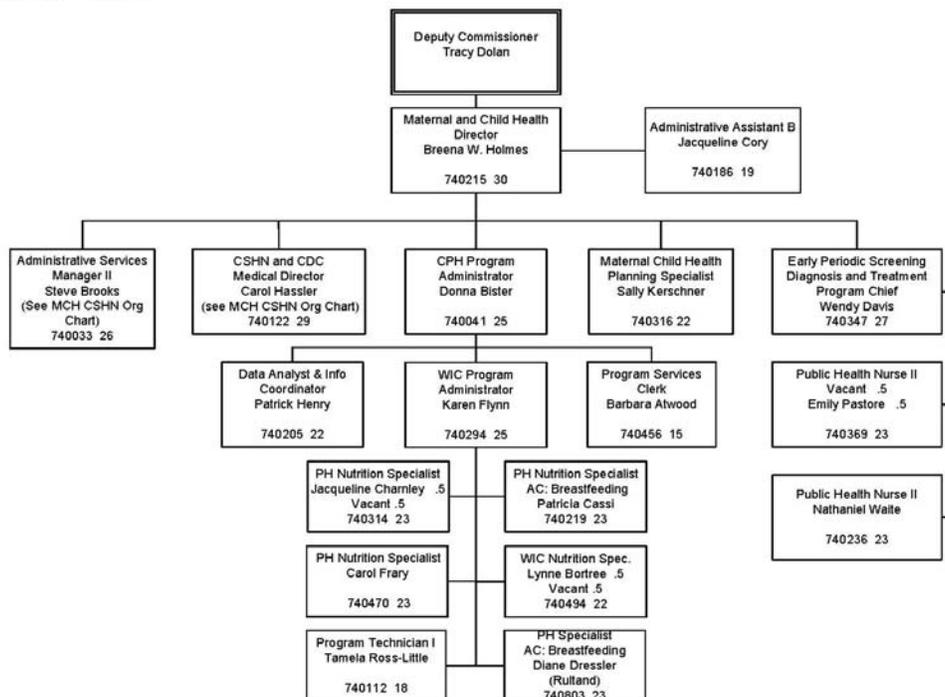
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the VDH. WIC participants are served at 50 clinic sites. Except for the 12 clinics held in district offices, clinics are held at temporary sites in churches and other community locations, generally open 1 day per month or one day every other month, with no permanent clinic infrastructure.

The Vermont WIC state agency is located in the Agency of Human Services (AHS) Department of Health (VDH), Division of Maternal and Child Health (MCH). The following organizational chart displays the placement of the WIC state agency within the structure of the division.



Division of Maternal and Child Health March 1, 2011



The CPH Programs Administrator/WIC Program Director is responsible for program planning, development, implementation and evaluation for the Vermont WIC Program, and for oversight of program implementation in the 12 Vermont Department of Health District Offices that serve as WIC Local Agencies.

The roles of other staff in the WIC unit are:

- WIC Program Administrator oversees daily operations and is responsible for contracts, grants and special projects.
- Public Health Specialists are responsible for nutrition, breastfeeding and physical activity services, staff training, participant educational materials, and coordination with partner programs.

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- The Program Technician I, is the home delivery vendor manager and is responsible for vendor monitoring, payments and reconciliation.
- The Data Analyst & Information Coordinator is the retail vendor manager for the cash value EBT benefit, fiscal reporting, data analysis and Geographic Information Systems support.
- The Program Services Clerk handles administrative tasks for the WIC unit and other MCH programs.

Most WIC foods are delivered by contracted home delivery vendors to the homes of certified WIC participants according to a schedule that allows specific food benefits to be “redeemed” by the participants within a specific timeframe. The program delivers WIC foods worth about \$9 million annually. The WIC Program also contracts with 128 retailer grocers across the state to provide fruits and vegetables to WIC participants using the SNAP EBT platform and a WIC-specific magnetic stripe EBT card. The WIC fruit and vegetable benefit is a cash value benefit, unlike the remainder of the WIC food package, which is specific foods in specific quantities. Vermont WIC recipients are expected to redeem over \$490,000 a year in WIC fruit and vegetable cash value Electronic Benefit Transfer (EBT) benefits in 2011.

The current number of WIC MIS users is relatively small (about 40), spread among the 12 district offices, WIC central office and DII in Montpelier (for the legacy DII system). There are a few additional users in Health Surveillance (history file only). Once a new system is in place, Vermont WIC would expect the number of users to rise to about 160, and Vermont WIC will need to provide some type of system access in another 50 temporary locations around the state to support the WIC clinics.

The Vermont WIC MIS users and their user environments are varied, ranging from public health nutritionists at remote clinic locations to the super administrative users within VDH who must report to federal agencies.

- The VDH public health nutritionist work environment is variable but does include access to the district office environment. Currently, paper forms created at the clinic are submitted to the district office administrative unit for data entry. With the installation of a new MIS, additional access points would be necessary, as data creation will take place in the clinic environment. Each clinic examination room at the district level would need hardware to access the MIS. For off site clinics, portable hardware would be necessary.
- The typical VDH central staff user currently has a reliable network to utilize and access to a variety of MS tools.
- The participant’s environment is naturally a varied home environment that may or may not have internet access. Kiosks will be needed in each district office for participants to fill out applications and check on their benefit status. Currently there are kiosks in each district office within the Department of Economic Services offices.

4.2 Objectives

4.2.1 Compliance with WIC Regulations and Standards

The USDA Food and Nutrition Services vision of the states’ “state of the art” WIC MIS systems is delineated in the FNS WIC MIS Functional Requirements Document (FReD). WIC MIS would have an Open System Architecture and be easily transferred and implemented by other states. The motto: “Build once, replicate many times.” The proposed WIC Program “State Agency

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- System Wide Requirements
- System Administration
- Nutrition Education, Health Surveillance & Referrals
- Food Benefit Issuance

The FNS has identified stewardship of federal funds as an important Agency goal, and WIC MIS is a key area of focus. The FNS identifies close federal oversight of WIC state agency systems as a priority due to the large federal investment in these systems. FNS oversight of system acquisitions is typically accomplished through the Advanced Planning Document (APD) review and approval process.

Three broad automation goals have been identified by FNS for WIC MIS:

1. Improve customer service
2. Improve efficiency and effectiveness, and
3. Ensure accountability and integrity in program operations.

To meet these broad goals, the following objectives have been established for WIC MIS:

Goal: Improve Customer Service:

Objective A: Facilitate Coordination of Services With Other Programs. Automated systems should be used to refer individuals to other programs, as appropriate. To save time and avoid duplication, basic participant information should be collected once and shared among programs.

Objective B: Improve Nutrition Services. Key to the success of the WIC Program is the nutrition services it provides to participants. Recognizing the benefits automation brings to this valuable aspect of the program, an important objective is to improve the collection and analysis of participant health, nutrition trends, demographics and service patterns.

Core Functions To Be Addressed Through This Goal:

- Track nutrition education contacts and topics covered.
- Track referrals to other programs.
- [Automated dietary assessment](#)
- [Automated growth chart plotting.](#)

Goal: Improve Efficiency and Effectiveness

Objective C: Streamline participant processing. Automation should be used to free local agency staff from routine tasks, such as identifying participants whose certification period is due to expire, and complex tasks, such as calculating an applicant's income eligibility. Systems should be designed to group family members within the system to facilitate transfers within the state, as well as appointment scheduling for the family. State agencies should make optimal use of workstations at the local level in order to: (1) reduce paperwork so less staff time is spent handling paper and filing forms, and (2) allow participants to spend more quality time interacting with staff and less time overall at the clinic.

Objective D: Improve benefit issuance process. State agencies can reduce the work associated with benefit issuance by reducing the number of food instruments that must be managed. When food instruments are produced in advance, they must be voided if the participant fails to show up for pickup. Each voided food instrument must be identified as either voided due to error or voided due to non-pickup. Unclaimed food instruments that have not been voided pose a security problem that must be addressed. Thus, the objective is to produce food instruments on-demand

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when the participant arrives at the clinic for food instrument pickup. Reducing the number of food instruments not only saves time, but also reduces associated food instrument costs.

Ultimately, the objective is to eliminate the need for paper food instruments altogether through Electronic Benefit Transfer (EBT). Included in this objective is the need to design an automated process that enables quick assignment and issuance of food packages that are nutritionally appropriate for each participant.

Core Functions To Be Addressed Through This Goal:

- Calculate certification expiration date
- Assign nutritional risk and priority status
- Calculate income eligibility
- Associate family members within system
- Enable statewide transfer of certification
- Create food prescription
- Issue benefits on-demand
- Transmit certification data electronically
- [Document source of income](#)
- [Enable point of certification data entry](#)

Goal: 3. Ensure accountability and integrity in program operations

Objective E: Improve Accuracy in Funds Management. This objective places emphasis on the importance of automated systems in ensuring accuracy and accountability in the area of funds management. Systems must be able to reconcile each food instrument redeemed to a valid issuance record and a valid participant record. The system must flag food instruments that exceed their maximum state-allowed value. Systems should also track food and NSA expenditures to ensure that funds expended are within authorized levels. Due to the volume of food instruments processed daily, the lack of automation in this area makes timely financial and management decisions much more difficult.

Objective F: Improve Data Collection and Analysis for Program Management Purposes. This objective ensures reporting needs are met. The following standard reports are instrumental to integrity efforts, accountability, and funds control: dual participation reporting, vendor management reports, rebate billing reports, participation reports, and participant characteristics datasets. In addition, ad hoc reporting is needed at the state and local level for ease in retrieving information.

Objective G: Provide Adequate Vendor Information to Ensure Program Integrity. An intrinsic part of retail vendor management is the ability to associate each food instrument redeemed with the redeeming retail vendor and to stratify redemption data in order to identify patterns of abuse among grocers. Due to the large volume of food instrument and redemption data processed daily, automation of this function is critical and needed to ensure program integrity.

Core Functions to Be Addressed Through This Goal:

- Perform reconciliation of food instruments.
- Provide dual participation report.
- Provide The Integrity Profile (TIP) report.

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- Provide rebate-billing report.
- Provide participation report.
- Provide participant characteristics datasets.
- Identify redeeming vendor. ("USDA FNS WIC")
- Enable high-risk vendor detection.
- Provide price editing for excessive charges.
- [Enable ad hoc reporting.](#)

4.2.2 Enhanced WIC IT Infrastructure

This project will bring WIC management information systems up to date and allow reallocation of staff time from managing paper based systems and data entry to nutrition services - the key to helping families make the behavior changes needed to improve health outcomes. Improving health status is the primary aim of WIC. The current system limits staff ability to affect the health outcomes of the WIC participants, as Vermont WIC staff has to spend time on inefficient, duplicative systems that could be better spent on helping individuals and families achieve better health.

4.2.3 WIC Business Process Automation

Implementation of national risk codes and racial ethnic coding will allow Vermont WIC to easily compare outcomes to national data. Eliminating multiple databases will increase the ability to tie WIC benefits to health outcomes. For example, Vermont WIC cannot currently tie breast pump issuance to breastfeeding duration without manually matching three different datasets.

Improved reporting capabilities will improve the ability to provide information to partners on a timely basis. Ideally Vermont WIC will eliminate paper records altogether, which will improve both efficiency by reducing duplication of data collection and elimination of paper handling and improve effectiveness by shifting staff time from administrative duties to education and counseling. Even if total paper elimination is not possible, using a single unified management information system to replace multiple stand-alone systems will improve efficiency.

Any new system will include direct staff access to standard reports; currently central office staff has to run reports and distribute them to districts. Some simple ad hoc report templates will be available to district staff. At the central office level, having health status, benefits received, and demographic information (both current and historical) in a single system will greatly reduce the amount of time it takes to report and analyze information.

4.2.4 Establish WIC EBT readiness

WIC EBT is 7th on the list of 18 items slated for Tier One of the Vermont Agency of Human Services' IT Modernization/Health Information Exchange (HIE) Integration Opportunities as reported in the *Vermont Health Information Technology Plan*, dated July 23, 2010. ([Replacement of the WIC MIS legacy system is not on the AHS list because the legacy application is hosted at DII and has not been part of AHS IT planning. However, replacement of the WIC legacy MIS has been a high priority for both the Health Department and the WIC program as other program move off the DII mainframe.](#))

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It is necessary to replace the MIS system to establish EBT readiness. Because the current WIC MIS was designed to support a home delivery system, extensive modifications to the system would be needed to support WIC EBT functional requirements.

The development of a WIC MIS inherently must be WIC EBT ready per USDA MIS specifications. To support states in modifying their current WIC MIS or upgrading to a new WIC MIS, FNS developed the *Functional Requirements Document for a Model WIC Information System (FReD)*, which identifies EBT readiness functions for incorporation into the WIC MIS. Vermont created its own FReD based upon its own functional requirements and including all FNS functionality. In addition to the functional modifications, an interface between the MIS and the selected EBT system will enable the MIS system to interface with the EBT system to authorize WIC benefits in an electronic environment.

The interface for a Vermont WIC EBT should be developed under the Vermont WIC MIS/EBT project. Additional EBT components may include:

- EBT Host System
- Retail Point of Sale (POS) data exchange Interface
- Payment Processing Systems Interface
- Financial Institutions Interface

4.3 Requirements

4.3.1 Integrate within Vermont State Computing Environment

The Vermont Agency of Human Services (AHS) envisions the creation of a “Healthcare Enterprise” comprised of modern, responsive, interoperable systems that are integral parts of the AHS enterprise architecture. These systems support the vision for information technology with shared services and common technologies that can efficiently and effectively support provision of health care services to Vermonters. The Healthcare Enterprise is part of a larger IT framework and is designed to leverage the health information exchange being created by the Vermont Information Technology Leaders (VITL) initiative, which conforms to the Vermont Health Care Technology Strategic Plan, the Blueprint for Health, the Vermont Health Care Reform 5-Year Plan and the Agency’s IT Strategic Plan.

In addition to the specific Medicaid-system projects, the AHS and its various departments are undertaking a number of technology and business projects, which will result in significant changes to its information technology infrastructure and architecture. The AHS has been scoping and defining Enterprise Architecture in the Agency to ensure future growth and efficiency needs are met. To this end, AHS is currently procuring foundational components consisting of an Enterprise Service Bus (ESB), Workflow Component, Rules Engine, enterprise Master Person Index (MPI) and Identity Management. By leveraging these components, AHS intends to realize an environment that supports service orchestrations and data sharing across the Enterprise. These components will need to be built upon and extended within the Vermont Medicaid Enterprise System (VMES) procurement.

The system will support integration and data exchanges with other health and social service programs, including geographic information systems, immunization registries, Medicaid eligibility systems and exports to CSME (the AHS data warehouse). The system will have the ability to export and import data in a compatible format. The following lists programs and systems with which Vermont WIC must exchange data. Note that certain Agency level legacy systems may be replaced prior to the production of this application. Where it is appropriate and opportune, the

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WIC MIS should utilize Web Services Architecture. Possible interfaces include but are not limited to:

USDA Data requirements

The WIC MIS must produce the USDA's minimum data for electronic export set, a biennial requirement. The system must provide USDA with the required and optional data elements in the required format, as required at the time of system design or procurement.

TIP

For electronic export the WIC system must produce data following USDA's requirements for annual reporting of vendor management results, a.k.a. The Integrity Profile (TIP).

Business Office

At the central office level, the WIC system must interface with the financial institution that has responsibility for making payments to authorized vendors. The requirement includes the functional ability for issuing payment records to a bank and receipt of payment records from the bank in electronic form compatible with UCC and ISO standards.

Vision System

The WIC MIS must include the capability of sharing data with the Vermont state Vision financial system for food cost reporting. The system will capture data from the Vermont state financial system, for population of WIC administrative fields. The purpose of this function is to have the data necessary for reconciliation of the WIC Budget and WIC accounts available in the new WIC system. Currently this data is requested of the Vision system and reports are compiled and delivered to WIC.

Dual participants

The system must provide an output file for sharing with partnered programs to detect potential dual participants.

Vermont Medicaid Enterprise System (VMES)

HP Enterprise Services (HP) is Vermont's provider services agent and is responsible for Vermont's Medicaid Management Information System (MMIS). HP processes all claims other than pharmacy and handles provider payments of all types. The system must provide a method of providing and checking Medicaid information.

Vermont Integrated Eligibility Workflow System (VIEWS)

VIEWS is an ongoing initiative to replace the antiquated health care eligibility and enrollment system implemented in 1983. VIEWS goals include providing easier access and online services to beneficiaries, supporting improved operations and administration, and allowing faster program implementations. VIEWS is part of the redesign of the systems that support the Medicaid enterprise. The vision for VIEWS is described as a real time, web-based system for use by state employees and other customers that is easy to navigate and can automate the Medicaid and other healthcare program eligibility determination process to the full extent possible. If the VIEWS system is in production at the time of WIC MIS development, the WIC MIS must provide a method of checking eligibility information.

Vermont Health Information Network (VHIEN)

The "Vermont Health Information Exchange Network" ("VHIEN") is the health information exchange network operated by Vermont Information Technology Leaders (VITL). WIC's use of the VHIEN is for export of participant Hemoglobin levels, weight and heights records to the participant's electronic health record for physician use in the care of the participant.

Identity Administration and Management – (IAM) (Under development)

AHS Identity management is an administrative area that deals with identifying individuals in a system and controlling their access to resources within that system by associating user rights and restrictions with the established identity. This AHS system may be used for WIC prescreening of applications for identity management.

Transformation Hub or Rules Engine – (TH) – (RE) (Under development.)

The AHS Rules Engine is a tool to be used by business or financial related professionals for converting plain-language policy into machine readable business rules associated specifically with benefits/entitlements and other rules related operations. AHS is seeking a tool that can be configured to extract data from other systems, manipulate that data based on customized rules and will ultimately have the ability to send output data to other systems.

Enterprise Service BUS – (ESB) (Under development.)

The AHS Enterprise Service Bus (ESB) is a centralized infrastructure component that makes a set of reusable set of services widely available and able to communicate with each other. These core functions are:

- **Connectivity and Protocol support – Connects and talks to a wide range of services or data sources**

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- Data transformation – Can translate data from one format to another on the fly (e.g. XML to HL7v3)
- Combined services (Orchestration) – Allows the combination of existing services to create a new service
- Security – Can use existing security infrastructure to govern use of services

Workflow Component – (WC) (Under development)

The AHS Workflow Component is self-contained, reusable software modules that allow a one-to-one mapping between business tasks and the exact IT components needed to execute the task. Services can be shared, and can be combined, to form complete business solutions.

- Dispatch work and send notifications based on the pre-defined process.
- Manage the program/business process based on the organizational model –support for approval authority, delegation, and substitution.
- Manage deadlines and priorities.
- Support the reporting on workflow status.

Children's Integrated Services – (CIS) and Adult Integrated Services – (AIS)

Children's Integrated Services (CIS) is seeking a new Integrated Clinical and Fiscal Management System. The system will also serve Adult Integrated Services. Vermont seeks to have a unified data management system that improves CIS participant management for clinical and support service delivery billing and payment, and reporting capabilities. A method for referrals to and from the CIS must be provided.

Enterprise Master Person Index – (eMPI) (Under development)

The AHS enterprise master person/patient index (eMPI) is a software application that identifies persons in an integrated delivery network (IDN) across disparate registration, scheduling, financial, and clinical systems. Due to the shift to a more customer-centric focus in healthcare operations, consolidation of healthcare organizations, implementation of electronic health records and a need to define the population being served, an eMPI is essential to managing identity within AHS program records. If feasible, WIC participants will utilize the availability of eMPI Identification numbers.

Healthy Housing and Lead Poisoning Surveillance System HHLPSS

The Healthy Housing Lead Poisoning Surveillance System (HHLPSS) builds upon previous efforts by the National Blood Lead Surveillance System (NBLSS) to characterize the home environment in terms of not only lead poisoning risk factors, but also other home-based risk factors. While the earlier NBLSS was focused on homes of children less than 6 years old, the new HHLPSS will enable flexibility to evaluate all homes, regardless of the presence of children < age 6 years. When HHLPSS is in production, an export of Lead results to WIC is desired. 1032 Lead – Lead Testing Results are currently housed in the aged 1032 system. The Healthy Housing and Lead Poisoning Surveillance System (HHLPSS) is a VDH IT project to replace the legacy Lead system.

AHS Web Gateway (Portal)

"Web portal" is a term, often used interchangeably with gateway, for a World Wide Web site whose purpose is to be a major starting point for users. The AHS web portal presents information from diverse sources in a unified way.

Phase1 will enable the creation of the AHS Web Portal with limited online functionality to begin familiarizing Vermonters with the participant-centered approach for AHS Benefits and Services by bringing them to a single point of entry. Later phases will enhance interaction through the Web Portal when the eMPI, Rules Engine, Work Flow, Enterprise Bus, and Call Center add enhancements to enable Vermonters to perform additional self-driven functionalities. This will benefit AHS Program staff as Vermonters will perform additional tasks prior to AHS Staff involvement and our Community Partners will be able to assist Vermonters navigating the Portal to obtain official information. Functionalities envisioned as available through the AHS Portal include:

- Enhanced Self-Driven Screening for Benefits and Services Eligibility
- Create and Manage Personal Accounts
- Create Personal "My Benefits Page"(All Benefits/Services Programs an individual is enrolled in will be accessible by their My Benefits Page)

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- Enhanced Benefits and Service Enrollment Features
- More Applications Online
- Completion of One Common Application where possible
- Ability to Check on Enrollment Status
- Electronic Notification to AHS Benefits and Services Programs of Personal Life Changes
- Receive notifications about Benefits/Services Changes based on Personal Life Changes
- Ability for System to notify all Benefits/Services Programs of Consumer Personal Change Information and after approved by program staff, databases are updated. This will eliminate an individual from having to report changes to multiple Programs.
- Ability to perform many of the self-driven functionalities at any time of day
- Web Chat with Call Center (Web Chat will be available only to our Community Partners. It could be opened to the public when the Call Center is sufficiently staffed.

Vermont WIC will participate in the presentation of data via the AHS Gateway, which will require the e-presentation of WIC applications, possible presentation of WIC – EBT data, etc.

BFIS – Building Bright Futures Information System

This system is integral to childcare processes. WIC may need to share limited information with the BFIS system.

CSME – Data Warehouse (AHS Central Source for Measurement and Evaluation)

DCF IT and AHS IT are currently designing the handshake between BFIS and CSME, and are gathering the data requirements. The current goal is to pull BFIS data into CSME using existing extracts. WIC Specific: there is a need to design a data extract for CSME.

The AHS Integration Server

This is the current central hub of BFIS. Interfaces with FSD (DCF/Household Services Division-Child Welfare-SSMIS), ESD (DCF-Economic Services Division-TANF, SNAP-3Squares, Medicaid, etc-ACCESS).

SPHINX IMR

VDH Immunization Registry system receives batch immunization data and host-to-host data entry from providers, and is now participating in a pilot to exchange HL7 messaged immunization data from providers' Electronic Health Records via the Vermont Health Information Network.

Children with Special Health Needs (CSHN)

The CSHN program is currently in the last year of a three-year grant to redesign its business process. The intent is to migrate to a new clinic flow and possibly use the new DCF CIS system for their information system. Their requirement for WIC is to be able to exchange referrals; data repopulation of referral forms or electronic forms, available in the clinic setting are both acceptable methods of referral exchanges.

WIC EBT Interface

The WIC MIS must provide for all necessary interfaces with the WIC EBT processor for data sharing as required, inclusive of reporting capabilities.

Communications interface

The system must provide communications interface with word processing software for individual form letters printing and group mail merge process.

Other requirements in the Vermont computing environment include:

- The DII environment can host Oracle in addition to being able to host SQL and web servers on the mainframe.
- The database must be constructed utilizing relational database architecture and normalized to at least the Third Normal Form (3NF).
- The Database must employ physical table constraints to enforce rational integrity.

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- The system must send e-mail with SMTP and must be capable of utilizing the state's Exchange server.
- A WIC MIS solution will follow all established policies, procedures, and guidelines, whether they have been invoked by the USDA FNS, VDH IT, VDH, AHS, DII or state of Vermont policy.

4.3.2 WIC MIS Functionality

The Vermont Functional Requirements Document with EBT functionality (FReD) presents a high-level description of the Vermont desired WIC MIS functional requirements. Vermont FReD is a non-technical description of the required functionality of the envisioned systems. Included in the Vermont FReD are non-functional requirements in section 4.0 of the analysis spreadsheet, which aided the technical lead in determination of compatibility with state IT infrastructure and identification of usability issues.

4.4 Assumptions and Constraints

4.4.1 Operational Life

It is [assumed](#) that a transferred/modified WIC MIS will have at least a 5-year operational life, with a SAM system having a longer usable life span due to the systems' support structure. [While many systems have a longer lifespan, we assumed used a 5-year life span to match the cost analysis time frame for the EBT system.](#)

4.4.2 Availability of Information and Resources

Vermont WIC has relied on information available from two SAM systems projects, SPIRIT and MPSC, and Michigan for the MI-WIC, to determine which of these systems will meet our needs for an MIS. Vermont WIC has relied on information available from Michigan and from New Mexico/Wyoming for information about their online and offline EBT systems, respectively, and on the EBT system outsourced hosting vendors, also to determine which of these systems will meet our needs for transitioning from home to retail delivery via EBT.

Recognizing that the SPIRIT and MPSC systems are newly implemented, Vermont WIC recognizes that it is possible that some changes in current assumptions will ultimately be required. However, it is anticipated that any such changes would be minor and have no significant effect on Vermont WIC plans for transfer of a system.

4.4.3 Financial

Vermont WIC has relied upon the FNS models for evaluating the cost-benefit of alternative solutions, and upon internal financial records, time studies and other available information to project costs and benefits. Vermont WIC assumes that implementation and IT infrastructure grant monies will continue to be available for MIS and EBT, and require no state matching funds.

4.4.4 Legislative and Policy

There are no anticipated legislative constraints to the project. State procurement and IT development policies impose requirements on the project, but do not at this time constrain the project.

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4.4.5 Technical

Life Cycle of Current WIC MIS - The current Vermont WIC management information system was developed in 1977. It operates on a current model IBM mainframe and utilizes CICS for transaction processing; VSAM for database management; and COBOL and Gener/OL as the programming languages. Although the WIC system has been successfully modified to meet federally mandated requirements, only 11 of the 24 current core functions are automated. Furthermore, the lifecycle of the current MIS is only as long as the career of the last remaining programmer currently managing it.

State Government Technical Requirements - The Vermont WIC program desires a paperless system, from data creation to data storage, with the capability to exchange data with other AHS programs, Vermont State systems, the CDC and FNS. The desired system must operate in both the District Office environment and in remote locations without network connections. The WIC system must be compliant with the AHS Service Oriented Architecture and therefore utilize the AHS Rules Engine, the data management system, AHS security services, the AHS Enterprise Master Person Index (eMPI), the AHS Workflow and Identity Management system. The system will have the ability to receive and store unique ID's from the AHS EMPI.

Life Cycle of the Current WIC Food Delivery System - Vermont needs to phase out the current home delivery system for food distribution and move to an EBT model, in alignment with the FNS strategic plan and Congressional mandate for EBT. Even prior to the deadline for EBT, several home delivery vendors are expected to retire, and cannot be replaced.

4.4.6 Operational

Operational constraints would include those imposed by an outside agency if the proposed system will be integrated with another public assistance program.

No operational constraints, other than those imposed by USDA-FNS, are anticipated.

5. Cost Assessment

5.1 Cost Benefit Analysis

The Cost Benefit Analysis for the WIC MIS alternatives was conducted according to the process described in FNS Handbook 901 for the Feasibility Study. Costs of enhancing the current VT MIS system were not calculated, as the age and limitations of the system are such that a complete system rebuild would be required. Since there are a variety of systems available for transfer, this option was eliminated before the cost assessment was done. However, DII has repeatedly notified the program that on-going maintenance and operations costs for the current WIC system will increase significantly in the future as other departments move systems off the DII mainframe, leaving WIC with a larger share of the on-going costs.

Capital costs were estimated using VDH estimates for PCs and laptops (which include base software licenses for office automation, network connectivity and similar items), and published prices for other hardware and software necessary to implement each alternative.

Non-recurring implementation costs were based on estimates of the effort required to transfer, enhance, test and deploy each system and to develop and deliver end-user training.

Recurring costs were based on current DII charges for system maintenance and operation.

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Quantifiable benefits were based on staff time studies for clinic operations, and on staff estimates of time spent on activities that take place outside the clinical setting. Staff costs were based on the average salary and fringe rates for the employee classes that perform the activity.

5.2 Implementation Costs

Capital costs were estimated using VDH estimates for PCs and laptops (which include base software licenses for office automation, network connectivity and similar items), and published prices for other hardware and software necessary to implement each alternative.

Non-recurring implementation costs were based on estimates of the effort required to transfer, enhance, test and deploy each system and to develop and deliver end-user training. Implementation contractor costs were based on estimates from other states, using low-end estimates to reflect Vermont's decision to request the smallest possible number of enhancements or changes.

5.3 Operations Costs

Recurring costs were based on current DII charges for system maintenance and operation, as any new system Vermont implements will be hosted by DII.

5.4 Summary Costs

The estimated costs of implementing any of the three alternatives assessed are roughly equivalent. While transferring any new system will increase costs over the operating costs of the current WIC system, the age and limitations of the system necessitate its replacement. A detailed cost analysis spreadsheet is included as [Appendix H](#).

6. Alternatives Analysis

6.1 Methodology

Initial systems evaluations focused on the current Vermont WIC system to provide a clear understanding of the Vermont WIC business process and the data requirements that the new system must support. Evaluation began with a Gap Analysis of the current Vermont WIC system and USDA FNS functionality as laid out in the FRd, version 2008. The Vermont WIC GAP Analysis was employed as a tool to benchmark current system functionality and identify specific changes to the current WIC system required to make it more fully automated and EBT ready. The changes required encompassed both business process reengineering and systems automation. The Vermont WIC GAP Analysis Summary can be located in [Appendix D](#) and the full Gap Analysis in [Appendix E](#) of this document.

Many of the required business functions of the current Vermont WIC business process are not automated and are maintained via a paper process, external databases and spreadsheets. The baseline view of the current WIC MIS proved modifications to automated functions and automation of other business processes are required to support WIC EBT functional requirements. In addition to the functional modifications, an interface between the Vermont WIC MIS and the selected EBT system will be required to enable the Vermont MIS to interface with the EBT system to authorize WIC benefits in an electronic environment.

To aid the Vermont team in acquiring knowledge about the national WIC MIS environment, site visits and attendance at national conferences occurred throughout the planning process and

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vendors solicited to supply information about their WIC systems in production and systems in development. Contacts were developed with other states to gain their insight and experience.

Conferences attended:

USDA/FNS EBT User Group December 2004
 NWA Annual Meeting Technology Track April 2007
 NWA Technology Conference November 2007
 USDA/FNS APD Training, including requirements for the MIS/EBT planning process July 2008
 WIC EBT User Group Meeting 2010
 ATMIA Conference / EBT Next Generation 2010
 Maine EBT Vendor Showcase May 2011
 National WIC Association 2011 Technology Conference Sept. 2011
 ATMIA Conference / EBT Next Generation 2011

Teleconferences:

Michigan MIS Demonstration May 2011
 WIC Direct Demonstration June 2011

Site Visits:

SPIRIT EBT Showcase & SPIRIT MIS demonstration 2011

Vendors Contacted

ACS - Affiliated Computer Services Inc.
 CDP, Inc – WIC Direct System
 CIBER
 CSC - Computer Sciences Corporation
 Quality WIC Information Corp – QWIC
 JP Morgan

Vermont Vendor Presentations

CSC & JP Morgan - SPIRIT MIS & EBT
 3 SIGMA – Michigan's MI WIC
 CIBER – MPSC MIS

WIC programs contacted

Cherokee Nation
 Chickasaw Nation
 Connecticut
 Delaware
 Hawaii
 Maine
 Maryland
 Massachusetts
 Michigan
 New Hampshire
 New Mexico
 New York
 Rhode Island
 Virginia
 Washington, D.C.
 Wyoming

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6.1.1 Alternatives Costs Methodology

The Cost Benefit Analysis for the WIC MIS alternatives was conducted according to the process described in FNS Handbook 901 for the Feasibility Study.²

Costs for added infrastructure capacity are reflected in the DII allocation for AHS and would not be broken out for individual systems. If there are software application procurement costs these would be borne by VDH and would need to be detailed.

6.1.2 Baseline - Current Functionality

The methodology for creating a baseline view of the current WIC MIS functionality of the Vermont WIC MIS involved assessing the business functionality and system capabilities of the Vermont WIC program compared to the Vermont WIC desired functionality and system capabilities. A Vermont Gap analysis was prepared by comparing the current Vermont WIC business process and automated functions against those required of an automated WIC Management Information System with WIC EBT functionality as specified by the USDA FNS Functional Requirements Document (FReD). The technical and organizational capacity of the State of Vermont IT support systems was considered, along with State of Vermont policy standards.

Activities conducted to create the GAP analysis were:

- Interviews of WIC Administrative staff
- Interviews of WIC Local Agency staff
- Observation of WIC Clinics
- Interviews of VDH, AHS and DII IT Administration and staff
- Analysis of WIC paper forms, their fields and data elements.
- Analysis of DII (Department of Information and Innovation) mainframe functionality

Data resulting from the above tasks were combined to form a baseline of Vermont WIC's current functionality. This baseline view was used to compare Vermont WIC Functionality with that of the FNS FReD to create a GAP Analysis.

6.1.3 Vermont Desired Functionality

The VDH IT Unit's Requirements Elicitation Methodology was utilized to create a vision of Vermont WIC's desired MIS Functionality. This process included creation of a Vision document based upon stakeholder interviews. Subsequent to Departmental approval of the WIC MIS Vision document, the Vermont Functional Requirements Document (Vt. FReD) was created. This document outlines, by input, process and output, the functions desired by Vermont WIC for the new MIS system and their priority as stated by the Vermont WIC program.

Activities conducted to gather data for the functional comparisons were:

- Evaluation of documented system specifications for functionality, networking and system architecture of the current WIC environment
- Site visits

² Viewed at http://www.fns.usda.gov/apd/Handbook_901/V_1-3/Chapter2-APD%20Process.pdf. Section 2.3.2.4 starting on page 34.

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6.2.1.3 Functionality

- Does the functionality meet or exceed the VDH WIC program requirements?
- Does the system meet FNS required functionality?
- Does the system have all stakeholder-desired features?
- Does the system meet WIC/VDH/AHS/DII security features?
- Does the system abide by HIPAA?
- Does the system abide by WIC Federal Constraints?

6.2.1.4 Usability (Ease of use)

- Does the interface abide by usability principles?

6.2.2 Software Implementation Attributes

6.2.2.1 Ease of customization

- Does the system need customization to meet requirements?
- Can changes be made easily?
- Does the system have the compatible system requirements to other AHS systems?
- What is the system's development language?
- What is the system framework?

6.2.2.2 Ease of implementation

- Rate the ease of Application Implementation
- Is the system compatible with AHS Core components?
- Is the system of modular design?
- Is the system Scalable?
- Does the system contain 100% of EBT necessary functionality?

6.2.2.3 Support

- Type of support included

6.3 MIS Alternatives Analysis

The Vermont WIC MIS system, combined with Vermont WIC's paper business process, conforms to most WIC Program needs, but does not meet USDA FNS EBT readiness criteria. The current system has gaps in every USDA FNS specified functional area for the MIS and EBT. The current system lacks in data capture of certain necessary fields, lacks in automated processes and lacks

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the outputs of an automated system. Due to these limitations, WIC staff is prevented from using an updated business process to improve the health outcomes of the participants

6.3.1 Alternative 1: In-House - Advantages and Disadvantage

It is apparent that given the age, lack of functionality, changing State Vermont State IT infrastructure and IT architecture and the lack of system automation , that the current WIC MIS system is unsustainable. Extensive requirements gathering, design and coding would need to occur for the current system to meet even minimal WIC automation needs for implementation of EBT, as mandated by The Healthy, Hunger-Free Kids Act (S. 3307) which was signed into law in December 2010.

Modifications to the current system are not financially justifiable given the availability of modern systems for transfer.

6.3.2 Alternative 2: Non-SAM Transfer - Advantages and Disadvantage

The advantages of considering a non-SAM system for transfer include immediate availability and the ability to make modifications without consideration for the needs and desires of other states in a consortium. The disadvantages include federal limits on special grant funding to no more than 75 percent of the cost of the project, a federal mandate to transfer a SAM unless specific conditions are met, and the lack of infrastructure outside Vermont for enhancements to the system.

6.3.3 Alternative 3: SAM Transfer - Advantages and Disadvantage

The advantages of a SAM transfer include the potential for full funding through special grants, the availability of a group of states to share the costs and tasks of enhancements and upgrades, and the ability to satisfy the federal mandate to transfer a SAM unless specific conditions are met. The disadvantage at present is that there is no SAM immediately available for transfer. In addition, the need to work through a consortium for future enhancements may mean that some future enhancements desired by Vermont may not be implemented as quickly as they could be in a standalone system.

6.3.4 Systems Investigated

In an effort to conduct a comprehensive investigation of WIC MIS solutions, Vermont WIC conducted an initial review of several web-enabled and web-based WIC systems that are currently developed or implemented.

The non-SAM systems investigated are:

- The Indiana WISE system Web Enabled by PDA (now Covansys)
- The Web Enabled Kansas KWIC system developed by Starling
- The Web Enabled Arizona AIM system developed by CMA
- The Web Based Pennsylvania Quick WIC by CIBER
- The Web Based Iowa/ North Dakota system developed by CIBER
- The Louisiana WIC Web Based system named PHAME (Public Health Automated Management Enabler) developed by CIBER

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- Wisconsin's Web Based system called ROSIE developed by CIBER
- The Michigan Web Based MI-WIC – developed by Three Sigma
- The Maryland Web Based WIC system named WOW (WIC On the Web) developed by Three Sigma

The SAM systems investigated are:

- SPIRIT - Successful Partners In Reaching Innovative Technology
- MPSC - Mountain Plains States Consortium – which includes Wyoming, Colorado (lead state), and Utah

SAM projects status:

- SPIRIT – 1st SAM, implemented in 2007. SPIRIT has been transferred to Arkansas, Missouri, Montana, and Minnesota. Three other states are preparing to transfer SPIRIT (Alaska, Mississippi, and Maine). SPIRIT is not currently allowed for transfer.
- MPSC — 2nd SAM. Two states Colorado and Utah are in production and in the warranty phase. Wyoming initiated interface changes to accommodate their off-line EBT. Complete rollout in 2012 for Wyoming. The MPSC system is expected to be ready for transfer in late 2012.
- Crossroads – North Carolina, Alabama, Virginia, and West Virginia – still in design phase. Crossroads is not allowed for consideration.

The three SAM initiatives are briefly described below.

SPIRIT

Chickasaw Nation is the lead State agency for this consortium. Members include 13 Native American Tribal Organizations (ITO) from Oklahoma and New Mexico.

The SPIRIT project uses a Smart Client application that leverages the application independent connectivity of the World Wide Web with the processing power and localized benefits of a traditional thick client desktop application. This combination resolves the concerns of insufficiently thin client processing power and excessive telecommunication “round trips,” as well as the client/server data access latency issues traditionally associated with a thick client application. .NET Web Services are used to provide a Service Oriented Architecture that communicates with a Central Data Repository while .NET Remoting is used to share information that is exchanged between the various applications running on a client machine (e.g. user privileges). Component-Based Development is used to create a set of re-usable software artifacts organized into an n-tiered architecture. Communication between the various client applications within a session is achieved using .NET Remoting where appropriate.

Communication between the data sources is achieved using a Service Oriented Architecture (SOA). Using an SOA allows the data service to dynamically route the request to the appropriate data source. Service requests routed to remotely located Web Services are expressed as XML and communicated using HTTPS (Secured Hyper Text Transport Protocol). Service requests being routed to local data stores are left in their native business object constructs.

Security with regard to communications is achieved by using Secure Sockets Layer (SSL) to encrypt the XML service payloads being exchanged. Application security is controlled by a specialized application authentication and authorization model that leverages a database driven user profile and role-based privilege model to control access to various application features.

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Customized credentials are used to exchange tokenized authentication during service invocations. The relational database software for the central operations site is MS SQL Server.

After Minnesota's HuBert implementation, SPIRIT system transfers are on hold until the completion of a SPIRIT code review.

MPSC

The MPSC project was in the pilot phase in Colorado as of September 2011 and will complete statewide roll out as in October of 2011. The anticipated system is a transfer and modification of the developer's Smart Client WIC System developed for Iowa and North Dakota. The Smart Client system is a multi-tiered architecture utilizing web-based, web-distributed .NET architecture. The system will use Smart Client for the Presentation Layer, .NET Assemblies for the business components, Web Services for database access and communication, and Microsoft SQL Server for a database. The application consists of .NET Windows Forms compiled into an executable assembly, which is downloaded through the Internet. The MPSC transfer system, like the original IA/ND system, will be capable of functioning in both online (connected) and offline (disconnected) modes. These two modes provide clinics with the ability to perform normal clinic activities.

The MPSC system may be considered as a viable alternative in a State Agency's alternatives analysis when Colorado concludes their pilot and may not be transferred until all three consortia States have fully implemented in fiscal year 2012. History has shown that implementation dates may slip.

Crossroads

North Carolina is the lead State agency for this consortium of Southeastern states. Other member state agencies are Alabama, Virginia and West Virginia. The Crossroads SAM system will support all aspects of the WIC Program including local agency participant services, caseload management and appointment scheduling as well as State agency retailer, operations and financial management. The Crossroads SAM system will support food benefit issuance and will be required by USDA to be Electronic Benefits Transfer (EBT) ready. As an EBT ready system, Crossroads includes all functionality required to interface with an EBT system that would support electronic food benefit issuance.

Crossroads is currently in the testing phase of the MIS project and does not expect to release to pilot phase until 2012 or later. An RFP for an Implementation contractor for an EBT system has been released. At this time, Crossroads is not eligible for transfer.

The USDA has advised states that funding may be available to assist State agencies with the costs of a SAM system transfer contingent upon priority for those State agencies most in need of a new IS based on a number of criteria, including, but not limited to, the following:

- The level of critical functions performed by the current Vermont WIC system, as defined in the Functional Requirements Document for a Model WIC Information System (FRd)
- The age of the current automated portion of the system
- The level of modernization of the current system as compared with the stated objectives of a SAM system, i.e., web-based; fully functional; EBT-ready; modern and state-of-the-art technology; and ease of software upgrades and mandated enhancements
- The State agency's flexibility and willingness to adapt to new business rules (to fit a SAM system)
- The ability of the current system to facilitate operational efficiency and Program effectiveness

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- The availability of funds after current MIS state agency projects are supported

Vermont would likely warrant a high priority if funds were available, particularly due to the legacy system's age and lack of automation.

6.4 MIS Solutions Analysis

6.4.1 Methodology

After consultation with USDA FNS representatives and a through investigation of possible WIC MIS solutions, Vermont WIC chose three systems to evaluate, based upon apparent transfer feasibility, systems reputed functionality, systems reliability and preliminary cost considerations. [As of December 2011, the SPIRIT system is approved, but under a transfer moratorium. We included it in the analysis nevertheless. A second SAM system, MPSC, is available for consideration, and will be available for transfer when all 3 states in the consortium complete implementation in 2012, which is before Vermont will begin procurement. The Michigan system was chosen for its compatibility with current Vermont state information architecture specifications and proven ability to support online WIC EBT.](#)

Chosen for review by Vermont WIC were:

- SPIRIT WIC SAM System (SAM MIS)
- Michigan MI-WIC (Three Sigma) (Vendor MIS)
- MPSC WIC SAM System (SAM MIS)

[Each system under consideration was studied and information gathered using documentation reviews, testing the SPIRIT Playground and MI-WIC online demonstration systems and questions posed to WIC programs and Vendors.](#) The Vermont WIC MIS System Solutions Evaluation Guide version 1.1 was created to capture all information required to prepare a judgment on the most appropriate software solution for WIC MIS in Vermont. Two categories of analysis were defined: Software Package Attributes and Software Implementation Attributes. Within each category, subcategories were further defined to allow analysis of the alternative MIS against specific requirements and priorities. Line items within subcategories are specific to each product considered, and scaled for importance (weight) and rated for compliance. [Results of the analysis for each MIS were then compiled into a table format. \(See Appendix G for the detailed spreadsheet analysis\).](#) The compiled results in table format are presented below in Section 6.4.3, Evaluation.

Use of the Evaluation Guide allowed comparison of functional and non-functional requirements with input, output and process recorded by line. Each line was assigned a priority as A, B, C, or D with "A" representing a "Must-Have" requirement, "B" representing an "Important" requirement, "C" representing a "Nice to have" requirements and D representing a "Could do without" requirement. Each line was rated as Y=Supported or N=Not Supported to indicate if it fulfilled the requirement. N/A represented a function that either was fulfilled by the companion EBT system, or due to architecture of the system, was not needed. Each "A" priority, which a system did not have, [reflects a "gap" in that MIS in relation to Vermont requirements, and therefore](#) represents an enhancement, (E = Enhancement) The total of the "A" enhancements equals a minimum number of developed enhancements necessary to [satisfy Vermont's functional and non-functional requirements.](#)

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6.4.2 Comparison

Each system was analyzed in detail for WIC business process functionality and for non-functional requirements while adhering to the following criteria:

- Alternatives must allow for the implementation of a modern WIC clinic system, state wide, within a reasonable time frame
- Alternatives must include the capability of operation in all administrative, clinic and local agency environments
- Alternatives must be rated, at a minimum, on the specified Vermont Functional Requirements
- Alternatives must provide user-friendly WIC clinic and State level operations and management support functionality
- Alternatives must allow Vermont IT development, implementation, and operations principles and standards to be met
- Alternatives must maintain the quality and capacity of the Vermont WIC Program
- Alternatives' development and operational cost must be in alignment with the administrative funds anticipated to be available to the program
- Alternatives should allow relative ease of system maintenance as well as enhancement development and delivery
- Alternatives' technology must have been demonstrated to be capable of adequate performance in the variety of WIC service delivery environments that exist in Vermont's clinics.

A scoring matrix was used to define acceptable thresholds of functionality.

Table 4 Thresholds of Acceptable Functionality	
Definition	Decision
91-100 % Satisfactory	Preferred
81-90% Satisfactory	Acceptable
71-80% Satisfactory	Acceptable
01-70% Satisfactory	Unacceptable

6.4.3 Evaluation

6.4.3.1 Operational Functional Requirements

The Vermont Functional Requirements define system tasks, their inputs, processes and outputs, required to fulfill WIC program requirements. At the Vermont local service delivery level, certain features are considered critical in a current generation WIC system. A current generation system

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is characterized by the use of relational databases and .Net, a graphical user interface (GUI), such as Windows, and expanded functionality. The other features of these systems include:

- Establishment, maintenance, and access to participant records at each service delivery site
- Data capture and editing participant data locally
- Decision support and error correction tools
- On-demand production of WIC EBT cards at Local Agencies and clinic sites with the capacity to issue up to three months worth of food benefits to a participant at one visit
- Electronic transmission of local site data to a central database
- Access to current information about the number of participants applying, enrolled, certified, and issued EBT benefits
- Support for case management functions, including: appointment scheduling; monitoring participant health, behavioral and dietary status; detecting potential dual participation; transferring participant records between Local Agencies; and generating correspondence and reminders to participants. Improved Ad hoc reporting with local report generation capability

At the State level, additional features are considered critical for Program administration. These include:

- Improved central control over the system
- Provision of timely and accurate statewide data on participation, food obligations, and food expenditures
- Routine and Ad hoc inquiry into the various central databases
- Improved caseload management tools
- Improved vendor management tools
- Improved financial management tools
- Improved nutrition and health surveillance information and management tools
- EBT Functionality

The functional requirement systems comparison showed a great similarity between all three systems, with dissimilar system designs accounting for divergence from Vermont stated processes in several instances, without a corresponding loss of functionality. The following chart illustrates the supported Vermont functionality per system. Note that the variations in total counts indicate differences in system design.

Table 5: Scoring of Systems on VT Functional Requirements		
SPIRIT MIS/EBT	MPSC MIS	Michigan MIS
Y = Supported	Y = Supported	Y = Supported
N = Not Supported	N = Not Supported	N = Not Supported
F = Future Release	F = Future Release	F = Future Release
E = Enhancement	E = Enhancement	E = Enhancement

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N/A = Not Applicable

Tally	Count	%
Y	872	75.4%
N	154	13.3%
F	2	0.2%
E	129	11.1%
Total	1157	100.0%

N/A = Not Applicable

Tally	Count	%
Y	1070	92.3%
N	43	3.7%
F	0	0.0%
E	46	4.0%
Total	1159	100.0%

N/A = Not Applicable

Tally	Count	%
Y	972	85.2%
N	84	7.4%
F	0	0.0%
E	85	7.4%
Total	1141	100.0%

- SPIRIT meets the threshold of acceptability at 75.4% and had the lowest support for Vermont's overall functional requirements at only 872 of 1157 requirements met. SPIRIT'S 129 enhancements would require development work.
- MPSC, at 92.3% was the highest scoring system on functional requirements and lowest number of enhancements needed, however its information was gathered prior to production is therefore subject to amendment. MPSC's 46 enhancements would require development work
- MI-WIC, at 85.2% also fell in the acceptable range. The MI-WIC Michigan system met 972 of 1141 requirements and MI-WIC's 85 enhancements needed for Vermont are largely due to Michigan's not including the 3SIGMA Maryland Financial Module, which is already developed.

Overall MPSC and MI-WIC contained more Vermont specified requirements than SPIRIT did. Factors other than functional requirements, including non-functional requirements play important roles in the final systems analysis decision.

6.4.3.2 Technical Non-Functional Requirements

Non-Functional Requirements describe attributes, qualities and conditions, which the proposed system must have, comply with or are within operating parameters, due to the Vermont computing environment. The system requirements for this project will ultimately be determined reciprocally by the solution chosen and the capabilities of current VDH, AHS and DII systems.

The Vermont WIC program desires a paperless system, from data creation to data storage, with the capability to exchange data with other AHS programs, Vermont State systems, the CDC and FNS. DII may host the system for WIC, which would comply with the State plan for IT, and would allow the installation of an Oracle based system or a Microsoft based system.

The WIC system must be compliant with the AHS Service Oriented Architecture and therefore utilize the AHS Rules Engine, the data management system, AHS security services, the AHS Enterprise Master Person Index (eMPI), the AHS Workflow and Identity Management system. The system will have the ability to receive and store unique ID's from the AHS EMPI.

The system will support integration and data exchanges with other health and social service programs, including geographic information systems, immunization registries, Medicaid eligibility systems and exports to CSME. The system will have the ability to export and import data in a compatible format.

Considered and documented in the comparison spreadsheet were the following non-functional topics: Security, Usability, Configurability, Scalability, Systems Interfaces, Compatibility, Legal and Regulatory Compliance and Communications. The Vermont Agency of Human Services

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project to create an agency wide Service Oriented Architecture required the addition of multiple non-traditional interface requirements.

Table 6: Scoring of Systems on VT Non-Functional Requirements								
SPIRIT MIS/EBT			MPSC MIS			Michigan MI-WIC MIS		
Y = Supported			Y = Supported			Y = Supported		
N = Not Supported			N = Not Supported			N = Not Supported		
F = Future Release			F = Future Release			F = Future Release		
E = Enhancement			E = Enhancement			E = Enhancement		
N/A = Not Applicable			N/A = Not Applicable			N/A = Not Applicable		
Tally	Count	%	Tally	Count	%	Tally	Count	%
Y	62	64.6%	Y	73	76.0%	Y	78	81.3%
N	29	30.2%	N	19	19.8%	N	15	15.6%
F	0	0.0%	F	2	2.1%	F	0	0.0%
E	5	5.2%	E	2	2.1%	E	3	3.1%
Total	96	100.0%	Total	96	100.0%	Total	96	100.0%

Combined totaled scores and percentages favored Michigan’s MI-WIC application with 78 requirements met and only 15 requirements unmet. MPSC scored a close second with 73 met and 19 unmet. SPIRIT’s score was considerably lower with only 62 met and 29 unmet.

- SPIRIT did not meet the acceptable threshold at only 64.6% of non-functional requirements met. SPIRIT lacked “A” priority level functionality in Report Formats, Protection of Record Level Participant data, Protection of Health Information, Identification of Dual Participation and had a usability issue with the interface design.
- MPSC met the acceptable threshold at 76.0% of non-functional requirements met. MPSC lacked “A” priority level functionality in Protection of Record Level Participant data only.
- Michigan’s MI-WIC met the acceptable threshold at 81.3% of non-functional requirements MI-WIC lacked “A” priority level functionality in Vermont’s desired offline capacity, being that it is a 100% web-based. Vendor facilitated solution to connectivity for Michigan was to augment the portable clinic laptops with wireless access cards.

6.4.3.3 Systems Decision

Table 7: Combined Requirements Scoring								
SPIRIT MIS/EBT			MPSC MIS			Michigan MIS		
Y = Supported			Y = Supported			Y = Supported		
N = Not Supported			N = Not Supported			N = Not Supported		
F = Future Release			F = Future Release			F = Future Release		
E = Enhancement			E = Enhancement			E = Enhancement		

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N/A = Not Applicable			N/A = Not Applicable			N/A = Not Applicable		
Tally	Count	%	Tally	Count	%	Tally	Count	%
Y	934	74.5%	Y	1143	91.1%	Y	1050	84.9%
N	183	14.6%	N	62	4.9%	N	99	8.0%
F	2	0.2%	F	2	0.2%	F	0	0.0%
E	134	10.7%	E	48	3.8%	E	88	7.1%
Total	1253	100.0%	Total	1255	100.0%	Total	1237	100.0%

Observing the total percentages for functional and non-functional requirements in the table above indicated a preference for the MPSC system. In addition to scoring systems on Functional and Non-Functional Requirements, systems were reviewed on Financial, Time Constraints, and Systems Integration aspects. The results of this comprehensive set of comparisons are displayed in the following table. Systems were comparatively scored from 1 (lowest/worst) to 3 (highest/best). The resulting scores indicated that both MPSC and MI-WIC are acceptable systems for Vermont, while SPIRIT fell below a level of acceptance. Since a SAM system is preferred by Vermont, MPSC will be pursued as the new Vermont WIC MIS. If circumstances change and MPSC becomes unavailable for transfer, MI-WIC is acceptable as a solution.

It is difficult to accurately assess the cost and time required to make specific enhancements to a system prior to receiving formal bid responses based on a specific system. We used the following proxy criteria in assessing the difficulty of completing the required enhancements:

- Does the code for the enhancement already exist in another compatible system? For example, many of the enhancements needed for the MI-WIC system are financial elements that 3Sigma developed for Maryland. These are not included in the current MI-WIC system, but up to date code exists that could be incorporated into the MI-WIC system with minimal effort.
- Is the required enhancement already on the list of scheduled updates for a SAM system? This applies primarily to SPIRIT, where the consortium has a prioritized list of enhancements that will be in future releases.
- Does the enhancement require a change in the underlying database structure? Structural changes can affect many parts of a system in addition to the particular screens or functions specific to an enhancement. SPIRIT scored low in this area, because it currently lacks the ability to perform functions such as scheduling at the household level and linking information between mother and infant in breastfeeding dyads.
- Does the enhancement require more than cosmetic changes in the system/user interface? Again, SPIRIT had a lower score due to issues with the ability of staff to work with family units and to verify that information has been saved to the database.

	SPIRIT	MPSC	Michigan
Technical			
Non- Functional Requirements	1	3	3
Operational			
Functional Requirements	1	3	2
Financial			
Budget	3	3	2

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- development (ER)	2	3	1
- Implementation costs	2	2	3
- on-going costs	2	2	1
Maintenance & Operations	2	2	2
- license costs			
Time			
Until Release for Transfer	1	2	3
Efficiency of CC process	1	2	3
Development of ER	1	2	3
On going State Staff Time	1	2	3
Installation State Staff Time (Testing & Installation at each installation)	1	1	3
Systems Integration	2	2	3
Enhancements Required	1	3	2
Difficulty of Enhancements	1	2	2
Totals	22	37	36

6.4.4 Summary

Vermont WIC's analysis of the MIS project's possible solution methods determined that Alternative 1: In-House development was not feasible, given the project timeline and state resources. Alternative 2, the Non-SAM Transfer, presented a system, the MI-WIC MIS, which scored well in our analysis and is a viable alternative, but does not match the preferred funding structure of Alternative 3, the SAM Transfer. Our analysis of the MPSC MIS showed a clear similarity between Vermont's desired functionality and MPSC designed functionality. The MPSC system meets Vermont WIC's functional and non-functional requirements, while providing the opportunity to collaborate with other states using the same system. Our analysis, led to the choice of the MPSC MIS system as Vermont's system of choice.

7. Proposed System

The proposed solution is the replacement of the Vermont's mainframe and manual WIC business process system with an operational SAM system, MPSC, which will be transferred from another State. It is assumed that contracted support will be used for the acquisition and implementation, but that the State of Vermont will operate and maintain the system in-house after statewide rollout and any additional warranty periods contracted.

7.1 Impacts

7.1.1 Hardware

Because the State has their District Office equipment on a lifecycle replacement program, the new WIC system will not require the direct purchase of PCs, laptop computers, printers for clinics or signature devices. The WIC program will submit their hardware requirements to the State to assure WIC requirements are taken into consideration. To make use of all the required functionality in the new system and support the State's desire to operate paperless clinics, the State will be required to purchase scanners and digital signature pads. The existing server

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environment in Vermont can support the new system. The state will assure adequate performance during the transition (in which both the legacy system and the transfer system will operate) and beyond.

The project manager will spearhead the purchase of scanners and signature pads according to specifications required by the new system and in accordance with State hardware equipment procurement policy.

Local Agency Level

Vermont WIC operates clinics from within the Office of Local Health at twelve State of Vermont District Offices. The current terminals within WIC clinics are in the process of being replaced by either desktops or laptops. The installation of either will work with the MPSC and MI-WIC systems. Signature pads will be required as they would for all analyzed systems. Each district office will need a portable printer/scanner for remote clinics. District office clinics will need at least one printer/scanner.

State Agency Level

Vermont WIC administrative staff personnel currently have desktop Dell PC computers, which are robust enough to support the MPSC MIS without additional costs.

Host Level

The Vermont Department of Information and Innovation is responsible for defining a system architecture that fits Vermont's particular needs. The servers will be virtualized, as is common practice at DII. Network cabling is already in place between DII and the District Offices and the Vermont Department of Health.

7.1.2 Software

It is not anticipated that any additions or modifications are needed for existing applications and support software.

The centralized browser-based design of the transfer system requires no specialized software to be installed on the hardware in clinics or at the State Agency. The operating systems currently in use are compatible with the new system, which lessens the chance of software conflicts, and all clinics use the same version of web browser, currently Internet Explorer 8.

This project does not include developing any office automation functions, although some state office components of the system may link to office automation software, such as Microsoft Word, for the generation of letters or reports. The equipment at Vermont clinics and the WIC Program Office already has and use such software. It is not anticipated that purchase of any other office automation software will be required for the new system.

7.1.3 Organization

The new system will be transferred, modified and implemented by an outside contractor. VDH WIC project staff required specifically for the project will be hired on a contract basis. Accordingly, VDH WIC does not anticipate any change in existing organizational, personnel, and skill requirements as a result of this project.

7.1.4 Resource

Resources for the MIS and EBT projects will be shared between projects with the same state staff performing similar roles for each project. Based on an assessment of WIC system transfer and

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design projects in other states, and current Program resources, Vermont WIC has estimated the needs for project personnel to implement a new system as follows:

- State IT Project Manager, to be assigned by DII
- Technical Lead and Coordinator - Current VDH IT staff
- WIC Program Project Manger - Current Project Manager
- DII development staff - Current WIC DII staff
- Project Champion and SME - Current WIC/MCH director
- Contractor Staffing - sufficient to meet the RFP requirements

Database administration and Network support are already provided by AHS IT and DII and will be scheduled into their workflow. These IT units have been advised of the project and are assisting in project planning. Additional Resources required will determined reciprocally by the AHS IT and DII workflows and the selected contractors

7.1.5 Program

There are no anticipated conflicts or need to request a waiver from program requirements.

7.1.6 Operations

The MPSC MIS is a robust system that provides the functionality required by the Vermont WIC, but is not an exact match to the existing Vermont WIC environment and business processes. This means that user procedures and policies will need to be updated. The Vermont WIC procedure manual will need to be updated to reflect MPSC terminology and process flows and describe new requirements for providing services. The users will also need to understand that processes that used to be performed as overnight activities, such as reporting of transfers, can now be conducted at the point of service.³

The legacy system is maintained in house and governed by State of Vermont and WIC policy. No changes to data retention are anticipated. Legacy MIS operations will continue until the last clinic site is converted. Current DII staff will convert the participant database in the legacy system for the local agency pilot site to the correct format and load it on the DII server for the new system. This conversion of the pilot clinic's participant database will occur immediately prior to implementation of the pilot site, as the agency will not be allowed to make any other changes to legacy system records once the conversion has been accomplished.

For rollout, concurrent with the training event the Implementation contractor and DII staff shall convert each local agency's participant database from the legacy system and install it on the new system.

[Legacy benefit delivery will continue in each area of the state until EBT rollout is completed in that area.](#)

³ Costs for developing new procedure manual will be incurred regardless of which MIS system is implemented, and so do not have an impact in comparison of the systems investigated. Those costs will be included in the IAPD budget for implementation.

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7.1.7 Site/Facility

The implementation of the system will require some attention concerning facility planning but no large impacts are foreseen. Facility impacts are primarily related to data entry at the point of service, which may require minor reorganization of work stations. The Vermont Department of Health has standards for permanent WIC clinic facilities, which include wiring for network access and the installation of a terminal at each workstation in the clinic site. All current permanent sites meet these standards. It is possible that the State will move or remodel one or two permanent sites before this project is implemented. New or remodeled sites will be planned to meet the site standards. No transfer system will require modifications to existing buildings.

The State of Vermont Agency of Human Services currently operates a system of 12 district offices, which house WIC clinics that include network connectivity to the State of Vermont network, which will support the MPSC requirement of a strong Internet connection.

7.1.8 Fiscal Impacts

The USDA is generally the single source of funding for WIC system modernization projects. When federal WIC dollars are used, the appropriate federal laws and regulations apply. At the current stage of planning, the operating assumption is that the entire cost of the system transfer project will be requested from USDA-FNS.

Although the specific procurement and operational approach is not known, similar SAM transfer projects include contracting for the following services to support ongoing operations:

- Provide training / knowledge transfer for Vermont technical and operations staff
- Provide second level application help desk support (implementation and ongoing basis)
- Provide system maintenance (technical support, issue analysis, determination and resolution) on an ongoing basis
- Provide system enhancement support (via change control process) as requested

7.2 Selection Justification

The selected MPSC transfer system will meet the programmatic and functional requirements of the State of Vermont WIC program. The system's user interface is remarkably familiar to WIC staff, which will shorten and ease the training period. The MPSC interview process is very similar to Vermont's and will aid in supporting our interview training. It is also believed that the MPSC system will have a long life span due to its structure as a SAM system.

The selected transfer option will be built on a smart client, .NET, SQL server architecture, which is favored by VDH IT and AHS IT to other architectures due current development procedures and in house knowledge. The transfer system will provide increased processing capacity at the clinic level due to its centralized database structure, will support the State's desire for improved data integrity, thus allowing staff resources for focus more attention on addressing the nutritional needs of clients. The final transfer system selection of a SAM system, will allow Vermont to have opportunities to benefit from the SAM consortium model in terms of priority funding and resource sharing.

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8. Proposed Schedule

8.1 Project Phases, Milestones and Schedule

Phase	Milestone	Target Date
Planning	Submission of IAPD to USDA	3/31/2012
	Submission to USDA of RFP for MIS T&I Contractor, QA Contractor RFP and EBT Implementation RFP	9/30/2012
	USDA Approval of IAPD	9/2012
	USDA Approval of RFPs	3/2013
	Release of RFPs	3/2013
	Selection of Contractors	5/2013
	Completion of DII External Review	6/2013
	Completion of Contracting	9/2013
	Project Kick-Off Meeting	9/2013
	Final Work Plan	1/2014
Design	System JAD/requirements Sessions	1/2014
	Completion and Acceptance of Detailed Design Documents	5/2014
	Final Business Process Adjustments	5/2014
Development	Completion of Development & UAT	5/2015
Pilot	Pilot Initiation	5/2015
	Pilot Completion	9/2015
Statewide Rollout	Roll-out Initiation	9/2015
	Roll-Out Completion	3/2016
	Completion of Data Conversion	
	Post Warranty Project Closure and Transfer to State Operations	3/2017

8.2 Project Deliverables

As part of the MIS implementation, a set of work product documents are required. Identified work products that are typical of a MIS transfer project will be considered by the Vermont WIC project. Certain documents have been previously been drafted by the Vermont WIC planning team, while others are yet to be created. Depending on the contracting options selected, the State or the contractor may develop the work products. Documentation requirements have been identified for the distinct phases of the project.

Planning Phase

- Functional Requirements Document:** This document defines the functional requirements expected by Vermont WIC to be incorporated into the system. It is a more detailed version of the USDA FNS FReD, which incorporates Vermont's specific needs. Although the Vermont FReD is in complete form, it will not be considered final until all requirements have been vetted with the contractor.
- Implementation Advance Planning Document (IAPD):** This document, developed for submission to FNS, addresses systems analysis, design, requirements definition, development, integration, testing and deployment of the system. It includes an anticipated budget and expected federal financial participation. This document and its respective budget must be approved by FNS before the project can proceed. The

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content required to be submitted in the IAPD is dependent on the type of system (transfer, SAM, build) proposed.

- **Request for Proposals (RFP):** Vermont WIC project team will develop the procurement documentation used to hire a qualified contractor or contractors for transfer/ implementation and quality assurance services under the guidance of Vermont's RFP SME within the DII. Development of the RFP(s) will not be contracted.
- **Evaluation Methodology:** As part of the procurement process, a process for evaluating bidders will be defined and documented along with the creation of the evaluation tools used for scoring contractor proposals.
- **Project Management Plan:** This document will identify all of the information associated with the project management processes, the tools used, and how the project is executed, monitored/controlled, and closed. The Project Management Plan also contains plans for managing the following areas of the project:
 - Project integration management
 - Scope management
 - Time management
 - Cost management
 - Quality management
 - Human resource management
 - Communication management
 - Risk management
 - Procurement management
 - Change management
- **Project Work Plan:** The work plan is ultimately part of the Project Management Plan, but is important enough to stand as a separate document. The work plan lays out the project schedule and identifies dependencies, milestones, and resources. It should be updated throughout the project as the project progresses.

Design Phase

The following list of documentation is expected of Vermont for a SAM transfer project. The list may be adjusted based on Vermont's final requirements.

- **Functional Design Document:** provides general descriptions of the system design components required to address the functional requirements of the system.
- **Detailed Design Document:** provides detailed descriptions of the total system configuration including, hardware, functionality, data elements, file layouts, process flows, interfaces, reporting, transaction processing, settlement and reconciliation, customer service, and security.
- **Test Plan and Test Scripts:** addresses all major system components described in the Detailed Design Document and is used for User Acceptance Testing.

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10. Appendix A: Acronyms

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TERM	DEFINITION
ACH	Automated Clearing House
ACS	Affiliated Computer Systems
AHS	Agency of Human Services
ANSI	American National Standards Institute
AP	A woman having one or more embryos or fetuses in utero
APD	Advance Planning Document
APL	Approved Product List; a list of the state Agency's WIC authorized products
AVR	Automated Voice Response
BF	A woman who is breastfeeding or providing breast milk to her infant on average at least one time per day, up to the infant's first birthday.
BIN	Bank Identification Number
BPR	Business Process Re-engineering
C	Child - a person over one year of age who has not reached his/her fifth birthday.
CAD	Card acceptance device
CDP	Custom Data Processing
CIS	Children's Integrated Services
CPCM	Cost per Case per Month
CPH	Child Public Health
CVV or CVB	Cash Value Voucher or Cash Value Benefit; a dollar amount benefit for the purchase of fruits and vegetables part of the new food package rule

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DFO	Director of Field Operations
DII	Department of Information and Innovation
DOB	Date of Birth
EAN	European Article Numbering
EAR	Emergency Acquisition Request
EBA	Electronic Benefit Account
EBT	Electronic Benefits Transfer. The electronic transfer of government benefits to individuals through the use of card technology and point-of-sale terminals.
EBT ID	Electronic Benefit Transfer Identification Number. The 4-character identifier assigned to each retail store to identify it to the electronic settlement server. The EBT ID is used in the composition of the electronic file name submitted to the state and in the FTP directory structure.
ECR	Electronic Cash Register
FI	Food Instrument
FIs	Fidelity National Information Services, Inc.
FNS	Food Nutrition Service of the USDA
FRED	Functional Requirements Document
FRED-E	Functional Requirements Document with EBT
FTP	File Transfer Protocol. This protocol allows for the transfer of electronic files between a client and a remote server or between any two-computer systems using standard communication lines such as telephone.
GSO	Global Standards Organization
GTI	Global Trade Item Number
HCL	Hot Card List
Hct	The hematocrit is the proportion of blood volume that is occupied by red blood cells. It is normally about 48% for men and 38% for women. It is considered an integral part of a person's complete blood count results, along with hemoglobin concentration, white

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	blood cell count, and platelet count.
Hgb	Hemoglobin is the iron-containing oxygen-transport metalloprotein in the red blood cells of vertebrates.
HNQ	Health and Nutrition Questionnaire Forms
HOH	Head of Household
I	Infant - a person under one year of age.
IAPD	Implementation Advance Planning Document
IAPDU	Implementation Advance Planning Document Update
ICD	Interface Control Document
IFPS	International Federation of Produce Standards
INCP	Individual Nutrition Care Plan
IP	Internet Protocol. This is a standardized protocol used to transfer data from one node to another on a network.
IRFP	Implementation Request for Proposal
IS	Information Systems
IVR	Interactive Voice Response is an interactive technology that allows a computer to detect voice and keypad inputs
JPM	JP Morgan Chase
MICR	Magnetic Ink Character Recognition
MIS	Management Information System
MPCOS	Multi-application Payment Chip Operating System
NTE	Not to Exceed Amount

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NUPC	National UPC (Database),A system that maintains UPC(s) at a national level
OLH	Office of Local Health
Over 50%	Signifies whether or not the volume of WIC sales is over 50% of the total sales for the retailer.
PAN	Primary Account Number
PAPD	Planning Advance Planning Document
PC	Personal Computer
PIN	Personal Identification Number
PLU	Price Look Up Code
PLU	Price Look-Up
POS	Point-of-Sale (POS) refers to both a checkout counter in a retail location, the location where a transaction occurs and the in-lane device that processes the transaction
PP	A Postpartum Woman non-breastfeeding woman, up to six months from the termination of her pregnancy. The end of a pregnancy is the date the pregnancy terminates (date of delivery, abortion, fetal death or miscarriage).
RFO	Request For Offer
RFP	Request For Proposal
RFU	Reserved for Future use
S.M.A.R.T.	Specific Measurable Attainable Realistic Time-Based The S.M.A.R.T. acronym defines five characteristics needed to develop a well-designed action plan.
SAM	state Agency Model
SFY	state Fiscal Year
SME	Subject Matter Expert

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SNAP	Special Nutrition Assistance Program
SOR	System of Record
SOW	statement of Work
SSO	Single Sign On
TANF	Temporary Assistance for Needy Families
TPP	Third Party Processors
TRSM	Tamper Resistant Security Module
UOM	Unit of Measure
UI	User Interface
UPC	Universal Product Code
USDA	United states Department of Agriculture
VDH	Vermont Department of Health
VHIEN	Vermont Health Information Exchange Network
VHITP	Vermont Health Information Technology Plan
VMN	Variable Measure Number
WESS	WIC EBT Settlement Service
WIC	Women, Infants and Children
X9.93	WIC EBT Transaction Processing Standard

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11. Appendix B: Glossary



Glossary

12. Appendix C: Vermont MIS Vision Document



MIS Vision

13. Appendix D: Vermont Gap Analysis Summary



Gap Analysis
Summary

14. Appendix E: Vermont GAP Analysis



Gap Analysis

15. Appendix F: Vermont MIS/EBT Functional Requirements



VT MIS/EBT Funct
Reqs

16. Appendix G: Systems Comparison Spreadsheet



System Comparison
Spreadsheet

17. Appendix H: Detailed Cost Analysis



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