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Project Number Last Updated Date Original Submission Date

I. Program Identification

Program Title: DEEP Enterprise Data Management

Agency Submission Date:

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II. Program Description

A. Program Dates

Proposed Start Date (Month/Year)	Expected Completion Date (Month/Year)	Project Duration (in months)
2/1/2009	12/2015	71

B. Short Description This information will be used for listings and report to the Governor and General Assembly on capital funded projects.

The DEEP data management program will integrate critical data systems and develop a data warehouse to provide one common source for all DEEP data. Consolidated data provides one system to query all data allowing for ad hoc reporting and real time decision making. Systems can now be developed to provide visibility to all customers and DEEP personnel from one source. This will provide for better tactical and strategic decision-making because these decisions can be made based on a consolidated view of data. The agency would also like to provide both external customers and internal staff dashboards that can aid into the decision making process. This data will be available to be leveraged by remote users utilizing multiple methods to access data.

- C. **Program Overview.** Describe the high level summary of this project in plain English without technical jargon. Describe the purpose of the program, why it is important, expected outcomes, how you will achieve the outcomes, and how the success of the program will be evaluated.

Program Overview – Summary Description

This Data Management Program will focus and address projects within the following areas:

- Increases integrity, efficiency, analysis, and reporting of agency wide information
- Provides central data warehouse that can be used in data analysis and reporting
- Consolidated view of all data in a warehouse
- Establish official system of record/common data model for all data despite the origin

Agency-wide, there are 48 applications using Access Database, 22 applications using rBase Database, and 6 applications using Progress Database. Those applications manipulate the data and store updated records in those databases. An acceptable use of Access/Progress/rBase is for data manipulation and not as a data warehouse. Security, data integrity, availability, scalability, transactional logging are some of the issues with Access/rBase. Access, Progress, rBase could be used for data manipulation by the application, but when it comes to storing the data as a system of record, it should be stored into the SQL Server database.

This data management program will (1) migrate complex unsecure databases into a secure platform leveraging existing technology and business protocols; (2) provide instant intuitive access for citizens, business, and local, state and federal government to essential data; and (3) provide a modern, nimble and efficient flow of agency information to clients and agency staff saving time and money.

Purpose

Data-Driven Decisions: A robust, searchable and easily accessible data warehouse improves decision-making capability. Business Analytics drives data-driven decisions and is used to gain insights that inform decisions and can be used to automate and optimize processes. Data-driven agencies treat their data as an asset and leverage it for the benefit of their constituents. Successful business analytics depends on data quality, skilled analysts who understand the technologies and the business and an organizational commitment to data-driven decision making.

Security and integrity. A secure database platform will ensure that critical health, infrastructure, business and real estate data is not compromised, while maintaining data integrity, confidentiality, and availability to appropriate users.

Transparency and User-friendly intuitive access. For citizens, business and federal/local/state government, a robust central database will make it easy to search and find data on services, environmental impacts, and project status across the state. Better visibility to our organization’s data will translate into improved customer service.

Modern business practices for DEEP. By maximizing the agency’s use of current database technology the agency will provide greater access to resources for Connecticut residents and stakeholders. Having a common platform will integrate complex regulatory programs and related data into a single gateway for end users.

Speed the feedback of results, trends and environmental impacts. A robust database increases program efficiency and strategic program development within DEEP, and across local, state and federal government that interact with DEEP.

Flexibility: A new database platform with simplified architecture will increase agility and access from anywhere, and allow outside regulated and licensed customers to interface with agency data on their terms.

Connectivity: Updated database systems will allow employees remote access to business systems.

Responsiveness: A database system that enhances self-service capabilities and electronic parallel processing will improve customer service and decrease processing time.

LEAN: The database system will allow advanced analysis and development of metrics to improve our business process.

Importance

DEEP services and programs impact a significant percentage of citizens, business and local and state government – involving energy, commercial, industrial, residential, recreational, medical, critical infrastructure and health/safety activities while promoting opportunities for sustainable growth. Businesses, citizens, and local, state and federal government routinely seek and use DEEP’s data, content and information.

The conversion of complete, accurate and timely data into functional information along with the appropriate tools to develop and analyze metrics over time and disseminate this business intelligence to both internal and external users for informed decisions.

Outcomes

An enterprise approach to data management increases transparency of agency actions, status and trends for the public and policy makers, allowing faster program analysis of costs, effectiveness and service outcomes within and across state agencies. Data management also ensures the data managed by the agency is stored in a standardized format allowing for accurate and timely retrieval of information. In addition, it will provide tools for the client/customer to stay informed further promoting a business/customer friendly environment in Connecticut government.

Data management ensures that appropriate confidentiality, integrity, and availability of the State’s valuable electronic or digital data information. Online access of data will give citizens, businesses, government agencies and municipalities a user-friendly and faster way to benefit from DEEP services, conduct business with DEEP, and obtain vital information. This will increase Connecticut’s standing as a good place to conduct business while enhancing sustainability.

Approach and Success Evaluation

DEEP’s Data Management IT proposal has been developed through an intensive analytical process. Over the past four years, DEEP has engaged in an agency-wide review of its business components using the “LEAN” analytical process to eliminate waste, increase process efficiency and increase quality of results. DEEP has assembled 40 plus “LEAN Teams”, covering every business area of the agency, to perform critical review of programs, process and opportunities. This effort has identified significant IT opportunities that – if expanded – would allow giant leaps in process and quality improvement benefitting the public and the government. Public input has been included in this LEAN analysis and helped shape these recommendations.

The implementation of data management will allow business lines to be housed in the agency’s enterprise system leveraging existing technology and critical business analysis while creating a user-friendly public face for greater efficiency and transparency.

An agency’s IT management structure has been established to prioritize IT needs, ensure sharing of services, applications and hardware is maximized and evaluate implementation. Metrics will be designed into the IT projects. Real-time feedback will be designed into the projects. User-friendliness will be evaluated by meeting with advisory group/work groups, company stakeholders, soliciting feedback via on-line survey, and tracking frequency of use.

- D. **Business Goals.** List up to 5 key business goals you have for this program, when (FY) the goal is expected to be achieved, and how you will measure achievement, Must have at least one. Please use action phrases beginning with a verb to state each goal. Example: "Reduce the Permitting process by 25%". In the metrics column, please explain what data you will use to demonstrate the goal is being achieved and am current metrics.

Business Goal (Action Phase)	Target FY for Goal	Current Value	Expected Value
Integrate and secure dissimilar databases into standardized data warehouse for stability and usability by internal and external users	2014/2015	76 databases not integrated to agency's enterprise system	All agency databases fully integrated
Through analysis and measurement, reduce data defects and improve program level business efficiency by 20%	2014/2015	The Data Management project will allow DEEP to establish a baseline metric for disparate business lines	Resolution of existing data inefficiencies will yield a reduction in defects by 20%
Increase the speed for citizens, business and agency staff to retrieve key information from hours/days to instantaneous.	2015/2016	1 – 10 days depending on request type	5 – 30 minutes per search
Increase the speed by 85%, and increase coverage by 10% of issuing routine/standardized correspondence to affected citizens and businesses	2015/2016	3 weeks, and 90% coverage	72 hrs, and 100% coverage

E. **Technology Goals.** List up to 3 key technology goals you have for this program and when (FY) the goal is expected to be achieved. Please use action phrases beginning with a verb to state each goal. Example: "Improve transaction response time by 10%".

Technology Goal	Target FY for Goal
Provide online interactive access to real time data for business, citizens, all state agencies, municipalities and internal customers.	14/15
Create and implement approaches for migration of data for the 76 identified critical desktop databases to an enterprise datastore. This will achieve our improve security, data integrity, availability, scalability, transactional logging are some of the issues with Access/rBase. Access, Progress, rBase could be used for data manipulation by the application, but when it comes to storing the data as a system of record, it should be stored into the SQL Server database.	14/16
Improving public response time through self service.	14/15
Business Analytics delivers data-driven decisions and is used to gain insights that inform decisions and can be used to automate and optimize processes.	14/16
Host web application at BEST. Enterprise databases that this web application will be utilizing are hosted at DEEP. Cross-Network communication requirements were previously defined by DOIT.	13/14
Develop extensible architecture at BEST allowing other state agencies to leverage.	14/15

F. **Priority Alignment.** The criteria in this table, in concert with other factors, will be used to determine project priorities in the capital funding approval process. Briefly describe how the proposed projects will align with each criterion.

Priority Criterion	Y/N	Explanation
Aligned with Governor's Key Priorities	yes	Government more user-friendly for transacting business; information/services easy to find on-line; implement modern business practices; transparency for public and government decision makers on effectiveness and outcomes; increase integrity and security of electronic/digital data
Aligned with business and IT goals of agency	yes	Use of enterprise software solutions currently installed at BEST and utilized by DEEP as wells as other state agencies.
Reduces or prevents future increases to its operating budget	yes	Reduces IT software, and hardware support costs, eliminates waste, increases staff efficiency, resulting in lower need for increased staff
Results in a shared capability used by multiple agencies	yes	DEEP's financial and technical support for the statewide enterprise purchase of FileNet P8 was critical in the state's ability to leverage and develop a state wide standard. New technologies in the area of Business Intelligence will have the same impact on shared capabilities throughout the State.
Co-developed through participation of multiple agencies	yes	This framework will be hosted at BEST. BEST built and hosted the statewide enterprise solution for contact management and for IBM Case Management. Once this implementation is complete, other agencies will be able to leverage this technology. CT Siting Council and Consumer Counsel will realize a direct benefit from utilizing DEEP's site data for application review creating additional efficiencies in State government.
Agency demonstrates readiness to manage project of this size and scope	yes	As stated in the Approach and Success Evaluation Section the development and implementation of the Agency's enterprise system began 5 years ago and was a result of legislative and industry/constituent feedback. Management at that time made a commitment to transform our IT infrastructure into one common platform maintaining quality information that facilitates and insures informed management decisions. In doing so DEEP flushed out business requirements for the majority of agency programs preparing us for the next step which will include expanding these tools to the public. Staff has been committed at levels within the Agency lead by senior management, agency program staff, the Agency's IT and business resources, federal partners and stakeholders.
Agency is ready to deliver the business value proposed.	yes	DEEP has already brought together a workgroup of citizens and businesses to develop vision and practical tools.

G. **Organizational Preparedness.** Is your agency prepared to undertake this program? Is senior management committed, willing to participate, and willing to allocate the necessary time, energy and staffing resources? How will the project be managed and/or governed and who will make the key project decisions?

DEEP has established and implemented a governance structure. A DEEP IT Executive Steering Committee is chaired by the Commissioner and senior management. DEEP also set up an IT Advisory Committee consisting of leads from each of the business/operational divisions, chaired by OIM management. Senior management at DEEP will assign dedicated staff from OIM and the operational Divisions.

- I. **Program Ramp Up.** If capital funds are awarded for this project, how long will it take to ramp up? What are the key ramp-up requirements and have any of these already been started? For example, is a project manager been identified? Has an RFI been issued? Is a major procurement required such as an RFP?

The agency has made investments in the network infrastructure, servers, data storage and back-up hardware to secure the data and ensure the agency's architecture can support the integrated system. The Department engaged IBM to conduct a comprehensive review of the Agency's IT infrastructure in April 2012. Based on the recommendations and information gathered through LEAN initiatives on several lines of business being affected by this program. Efforts to define business issues and requirements are underway. DEEP's IT Project Managers have been assigned to existing projects which will be further developed if funding is made available to the Agency. LEAN initiatives have been conducted on several lines of business being affected by this program. This program will require a project manager assigned from OIM and from business programs.

- J. **Organizational Skills.** Do you have the experienced staff with the proper training to sustain this initiative once it's a production system? Do you anticipate having to hire additional staff to sustain this? What training efforts are expected to be needed to maintain this system?

The Office of Information Management will have existing staff resources and knowledge to maintain and make modifications to the new data management systems. Some training will be required for end users to maximize the potential of the Business Intelligence tools.

- K. **Financial Estimates.** Include summary from 1B Spreadsheet?

Estimated Total Development Cost	Estimated total Capital Funding Request	Estimated Annual Operating Cost	One Time Financial Benefit	Recurring Annual Financial Benefit
\$ 3,225,000	\$2,500,000	\$ 50,000		\$ 355,000
Explanation of Estimates				
Designing and construction of the data warehouse, implementation of business intelligence tools, online reporting, and metrics modules for the project. Also includes modifying existing data structures for the enterprise data warehouse integration. Estimated total cost will be for the use of a vendor to facilitate the construction of this application, purchase of software toolset and appropriate hardware to host these applications. It is assumed that the solution will utilize hosting services from BEST.				

III. Expanded Business Case

- A. **Program Impact.** Beyond the top business goals identified in Section II, 1) What impacts will this program have, if any, in the targeted areas below 2) What would be the impact of not doing this program 3) How will the program demonstrate benefits are achieved.

(1) Impact Area (Vision)	Description of Program Impact
Provide efficient and easily accessible data for all constituents	Project accomplishes this by creating access online to the agency information allowing greater search ability of data and public communication. Electronic sharing of data will allow faster review turnaround times utilizing a modern business process that will facilitate a cost-effective operation.
Promote open and transparent government with the citizens of the state.	Project accomplishes this by giving user-friendly access in the form of dashboards and other visual representations to critical agency data keeping the public constantly informed.

Establish efficient and modern business processes	Project accomplishes this by allowing the agency access to uniform and accurate electronic data and provides the Business Intelligence tools to convert this data into actionable information.
Use of accurate and timely data for policy making service delivery and results evaluation	Project accomplishes this by allowing staff to track project/site workflows for completeness and compliance.

2) Impact of NOT doing this program:
 Delaying this project hampers the ability for the public and staff to gather real-time information and puts critical data at risk for loss. Without efficiencies that can be delivered from data management we cannot deliver processing improvements to the regulated community. The Department will also lack transparency, have poor customer service, inefficiency, lost revenue and slow decision making which will hinder economic development. Compliance levels are reduced without internal sharing of knowledge concerning the details of the regulated community.

(3) How will you demonstrate achievement of benefits:
 The benefit of data management is to provide information in a user-friendly and efficient format for our customers and to make information more available and easy to find on-line. The benefit of data management to staff will be consolidated data and analytical tools to drive decision making. Data turned into business intelligence can report key performance indicators (KPI's) and other critical metrics for management, supervisors, staff, legislators and stakeholders. The increase in public communication and sharing of data will increase public knowledge of agency services, project/application status and business metrics.

B. Statutory/Regulatory Mandates. 1) Cite and describe federal and state mandates that this program is intended to address. 2) What would be the impact of non-compliance?

(1) Statutory / Regulatory Mandates:
 The program goals are intended to benefit all lines of business conducted by the agency and all governing statutes and regulations. Although there are no new requirements mandating this project, it will be developed with the flexibility to adapt to future statutory and regulatory changes.

(2) Impact of non-compliance:

Insufficient public availability of information. Inefficient use of staff resources. Slow availability of information to the public and to DEEP for decision making. Potential for environmental harm. Lack of information analysis results in missed opportunities to provide environmental benefits.

Without strong data management agency information can be compromised and/or misrepresented. Data is an organizations most important asset it is critical that data is not mismanaged. Resources must be devoted to data security, data integrity, confidentiality, availability and transparency to appropriate users.

C. Primary Beneficiaries. Who will benefit from this program (citizens businesses, municipalities, other state agencies, staff in your agency, other stakeholders) and in what way?

The primary beneficiaries of this information are citizens, businesses, local, state and federal government agencies when transacting business or in need of information from the state. Also, staff will have access and tools to make decisions quicker and more efficiently.