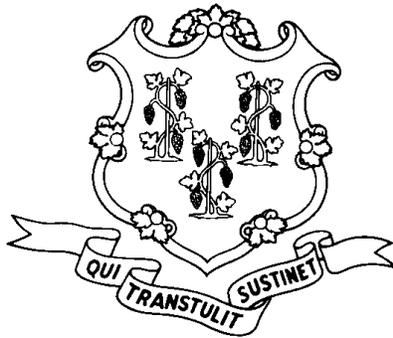


DDS
Integrated Application Suite
For HCBS Waiver
Coordinated Consumer Services

Planning APD
(Advance Planning Document)

CMS



March 25, 2011

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Executive Summary

Departmental Overview

Connecticut Department of Developmental Services (DDS) serves 15,418 individuals with intellectual disabilities and another 5,107 infants and toddlers in our Birth to Three Program, based on September 2010 data. As of July 1, 2008, DDS new Autism Division is serving 70 adults with autism who do not have intellectual disabilities.

Since 1987, most services and supports provided by DDS have been delivered through Home and Community Based Services (HCBS) Waivers that are approved by and eligible for federal reimbursement from the Centers for Medicaid and Medicare Services (CMS) under Title XIX. Currently DDS operates two HCBS waivers; a third is anticipated for approval soon.

DDS has a statewide system, which provides support and services to persons with intellectual disabilities who reside in family homes, independently, in state-operated facilities, in licensed "community training homes", and in over 830 licensed/certified "community living arrangements" operated by qualified providers.

To deliver consumer services, DDS partners with over 187 qualified private provider agencies, together providing services in all areas of service and support, spanning residential, day, or employment supports which vary in intensity and level of supervision depending on the needs of the consumers.

The agency's budget for State Fiscal Year 2011 (7/1/10-6/30/11) is \$1 Billion, and its state revenue contribution for the same fiscal year from eligibility-based Federal reimbursements is projected to be \$980 Million.

Department Organization and Staffing

The Department is headed by the Commissioner of Developmental Services and the Deputy Commissioner for Family and Community Services. There is a Central Office in Hartford and three Regional Directors who are responsible for each of the department's three service regions: North, South, and West.

DDS employs 4,588 individuals in 207 job titles, the second largest number of state employees, including 108 managers. DDS provides services using DDS direct support staff and via direct funding to families and consumers who "self direct" their supports by directly hiring support staff. The majority of DDS services are delivered by private providers. DDS staff in public programs manages 72 community living arrangements, several regional campuses and a training school

servicing a total of 1078 consumers, day services servicing approximately 500 consumers as well as providing individualized home supports to 280 consumers in their own homes. DDS also operates 11 respite centers throughout the state. Respite services are a valuable resource for families needing a rest from day-to-day care giving.

DDS partners with over 280 Private Provider agencies to provide a combination of residential, day and other supports to DDS consumers. These providers operate 817 community living arrangements serving 3,378 consumers, provide home supports to 1,245 consumers in their own homes, and 487 consumers residing with their families. In addition 417 consumers receive residential supports in family settings called Community Training Homes. Self directed home supports are provided to 179 consumers living in their own homes and 815 consumers residing with their families.

Private Providers also serve 8,800 consumers in funded day service and employment programs. In addition to this 243 consumers receive self directed day supports in similar program models.

Department History

In 1913, the state took over operations of the Lakeville School for Imbeciles in Lakeville (Norfolk) Connecticut. Four years later in 1917 the Lakeville School moved to Mansfield Connecticut and merged with the Connecticut Colony for Epileptics to form the Connecticut Training School for the Feeble-minded. This facility became the Mansfield Training School, which ceased operations in 1993. Starting in 1941 the state established a second training school, the Southbury Training School. Regional Centers were built in the 1960's when the Office of Mental Retardation was established under the Department of Health.

In 1975, DDS became an independent agency named the Department of Mental Retardation. In 2007, the agency name changed to the Department of Developmental Services (DDS) which reflects the mission and commitment of the department to serve individuals with intellectual disabilities with the utmost respect and dignity.

A. STATEMENT OF NEED

Based on DDS Coordinated Services Program Objectives

Measure and Meet 100% Federal HCBS Waiver Assurances

In operation of its HCBS waivers, DDS is required to develop and implement a Quality Improvement Strategy to ensure compliance with Federal HCBS Waiver Assurances. The department's approved QI strategy outlines performance measures linked to each of the Assurances, and uses these measures to track its compliance. The state must achieve 100% compliance with its performance measures and for instances where it does not, the state is required to demonstrate that individual and systemic level remediation has taken place.

The DDS QI strategy outlines 30 performance measures. Data for approximately one third of those performance measures is drawn from a stand-alone stovepipe application, Quality Service Review or QSR. While QSR data is entered into and managed in this application, few reports are easily extracted from this application. QSR data must be downloaded into Access to create needed reports. Approximately another third of the performance measures draw data from the DDS legacy mainframe system (eCAMRIS) or other stove pipe applications (Web/Res Day or IP-6). Those data must also be further manipulated in Access or Excel to create reports that address the QI (Quality Improvement) strategy performance measures. Reports for the remaining third of the measures are created from manual systems with no database or automated reporting.

For the most part, the HCBS Waiver Assurances measure timely task completion and follow-up across numerous review and approval points in the consumer services coordination workflow. These are measures at which IT excels in impartial, systemic reinforcement, compared to human workers who are more readily engaged in the more collaborative aspects of service coordination,

Without effectively integrated systems, the organization's efforts to achieve 100% compliance will not mature systemically, relative to the generally accepted reference of the CMM (capability maturity model). Conversely, 100% compliance on waiver assurances, enabled by information technology, would indicate that the organization has progressed systemically and achieved the next plateau of process maturity.

The primary respects in which the current business application suite is unable to support this program objective are:

- 1) Data needed by one application supporting Waiver Assurances, such as QSR, are often not available electronically from the predecessor functional application in the workflow. This requires significant duplicate data entry, tracking down people or paper, and manual data reconciliation at the front-end of the application, inhibiting the productivity of those involved, a significant opportunity cost, and delaying completion of task deliverables.
- 2) There is no Web- accessible, consolidated HCBS Waiver data store for collecting, updating, and organizing the data needed throughout the process workflow. While the legacy Unisys mainframe CAMRIS was ported to a more technologically current and lower-cost platform, eCAMRIS does not support database updates from any of the production applications in the suite, and for most of them is essentially read-only.
- 3) As a result of the prior two systemic deficiencies across the HCBS Waiver Application Suite, there is no comprehensive business process data reporting capability. Current reporting can only be measure-specific provided by pre-defined report development. There are no system-supported analytical data capabilities.
- 4) There is no feature for automated notifications to business users regarding timely completion of tasks or creation of follow-up remediation strategies and verification that remediation at the individual and systemic levels have been completed.

Measure and Improve DDS Consumer Outcomes

Whether an optimized service delivery process delivers the right program results requires a complementary agency focus on consumer outcomes, supported agency-wide.

For example, the Case Notes application rolled out January 2011 supports case managers in documenting their activities to achieve outcomes based on the consumer's individual plan and results in billing justifications for Targeted Case Management. One of its predecessor applications is the Level of Need application: developed by consultants, initially deployed as an MS Access application for internal DDS users in July 2006, and then rolled out as a web-based application in June 2008. The application is still accessible only to DDS users; it is not available as an Extranet Web application to qualified providers. Included in the 114-question needs assessment tool are questions about the consumer's level of support and supervision needs and risk areas to be

addressed in individual planning. These support needs are ultimately translated to an individual resource allocation based on the consumer's need for supports.

Another key application to assess consumer outcomes and satisfaction, as well as provider performance in meeting consumer outcomes, and other service-quality related outcome assessments is the QSR (Quality Service Review) application. Since the mid 1990's, DDS has led a paradigm shift in its relationships with consumers, emphasizing self-determination. Measurable outcomes of coordinated services are an integral part of a new way of doing business that implemented systems do not entirely support adequately, if at all.

The primary respects in which the current application suite is unable to support this program objective are:

- 5) As is the case with meeting the above program goal of 100% Waiver Assurances compliance, data needed by one application supporting Consumer Outcomes, such as Level of Need, are often not available electronically from the functional predecessor in the workflow. This requires significant duplicate data entry, tracking down people or paper, and manual data reconciliation at the front-end of the application, a significant productivity inhibitor for those involved that also delays completion of task deliverables.
- 6) There is no single consolidated HCBS Waiver data store for collecting, updating, and organizing the data needed throughout the process workflow *based on a newer, consumer-centric business model*. The legacy CAMRIS implements a data model that is provider-centric. Accordingly, data needed from a consumer services perspective are not there and/or are not retrievable in a meaningful way.
- 7) As a result of the prior two systemic deficiencies across the HCBS Waiver Application Suite, there is no comprehensive consumer-centric outcomes reporting capability. Current reporting can only be outcome-specific provided by pre-defined report development. There are no system-supported analytical data capabilities.
- 8) Applications used to report outcomes lack automated notifications to business users regarding timely completion of tasks or creation of follow-up remediation strategies and verification that remediation at the individual and systemic levels has been completed.

Illustration of Current DDS Information Systems (“As Is”)

(see attached pdf file)

DDS Project Technology Objectives

To meet the Federal and DDS performance objectives referenced above, DDS, in consultation with DSS and DOIT must accomplish the following technical objectives to address the gaps summarized above. All can qualify for enhanced FFP:

1. Develop an integrated information architecture (IA), beginning with a data model as requirements basis for sourcing and implementing a consolidated data store. The logical scope and physical implementation of the data model must be adequate to populating the set of application services required to support timely, effective, and complete service coordination for the department's consumers.

How this differs from a standard Build project is the focus on business data analysis, rather than business workflow. The business requirements phase, for example, focuses on defining business data definitions and inter-relationships. From these data requirements, physical data stores are designed and implemented to support business reporting and analytical services for performance management, operations research, and other self-directing organizational uses for aggregate (non-PHI) data.

The resulting comprehensive data model can be included in an RFP specification, serving as a useful non-technical reference for evaluating what bidder solutions offer by way of Reporting and Business Intelligence "As Is" compared to the target scope of the IA.

DDS begins to have options to consider with regard to implementing the IA with the systems design phase. At that point, an RFP may have netted vendor solutions that are complete or partial. A complete IA solution may include replacing eCAMRIS with a new database and provide the decision-support structures needed to implement end-user Ad Hoc (as well as canned) Reporting. A partial IA solution may do one or the other, either of which leaves DDS with a different set of design, construction, and integration options for completing the IA.

Practically, DDS has already made a substantial investment in IA requirements. These are the table layouts posted in the metadata office cube, for all the current business workflow-supporting data stores. An efficient way to proceed with the comprehensive data model is filling in the missing data linkages that correspond to gap application data needs.

2. Ensure any enhancements to the Title XIX billing interface to DSS, as the single state Medicaid agency (SSMA), conform to applicable Medicaid data exchange standards, as they may evolve.

DDS file data exchange conformance to DSS Title XIX standards, currently HIPAA 5010 X12N Web EDI (electronic data interchange) from May 2012. The national Web-EDI standard current version needs to be a mandatory requirement in an RFP along with any state technical standards or preferences for how this is implemented for new and legacy applications.

3. Integrate existing and new suite applications based on the planned information architecture for the agency's services coordination, and on a consistent technical architecture for universal technical services, including:

- a. Expansion of the scope of existing universal technical services, such as DDS Single Sign On, to current and replacement multi-user HCBS Waiver applications on current technical standards
- b. Port functionally adequate HCBS Waiver applications that are on obsolete technical standards to current platforms
 - PRAT currently on Access with a SQL Server backend
 - QSR currently C# programmed on SQL Server backend
- c. Replace existing HCBS Waiver production applications that are functionally inadequate
 - HCBS Waiver Management
 - Emergency Management
 - Incident Management, including
 - Abuse/Neglect recommendation and follow-up
 - Critical Incident follow-up and periodic review
 - Mortality reporting
 - Medication Administration certifications
 - Quality Improvement certifications
 - Provider Certification and Licensing
 - Community Living Arrangements (CLAs)/Community Training Home (CTH)
 - Vacancy/Referral Tracking
 - Contract Tracking
 - Contract Service Authorizations
 - Private Provider Billing
 - Fiscal Intermediary Provider Billing

d. Source new production applications for core-mission business services currently lacking applications

- Data Analytics and Reporting
- Case Management Individual Plan
- Clinical Support Services
- Program Review Committee/Human Right Committee
- Provider Services Documents
- Document Management (Electronic Case Files)

4. Procure, develop, or redevelop core-mission business service applications across those business services essential to the agency's core mission. Where functions mirror similar functions in other state agencies, such as medication management, ensure the solutions other agencies have implemented are included in the options review for that business service.

5. Procure, pilot, and implement, incrementally, a standards-based DDS data analysis and reporting service common across the applications in the suite, including DDS read-only access to DSS data warehouse for more timely query results.

Alternatives Analysis

Organizational Context

State-wide Health and Human Services Enterprise Architecture

A common enterprise architecture for Health and Human Services, based on the Federal model, may enhance, in effect magnify, the system efficiencies achievable within individual state agencies across common client-benefitting Federal and state program functions. As a result, it may also net a greater aggregate FFP (Federal financial participation) rate and dollars of reimbursement.

However, a feasibility assessment of this approach for Connecticut requires formal cross-functional sponsorship, common business requirements, an architectural review of systems currently in place, a gap analysis, an impact assessment from perspective of integrating functions and systems, and a cross-agency implementation strategy.

That effort is not within the scope of this DDS Planning APD. However, a DDS Implementation APD for the HCBS Waiver Integrated Application Suite may need to explore this option more fully subject to the program objectives of the DDS Commissioner.

Aside from a future enterprise architecture, once an applicant has been determined eligible based on intellectual disability for DDS services and assigned a DDS case manager, the remaining DDS workflow for the current and projected DDS HCBS Waiver Integrated Application Suite operates within the DSS Title XIX eligibility determination and billing workflow, in effect, comprising a closed, iterative loop.

Systems Sourcing Options

1. Enhance Current Applications

In view of the systemic gaps that need to be addressed, this approach is discarded as a strategy for developing a suite of process-streamlined applications based on a common data foundation. While the timeframe for delivery of new applications may require that current applications are enhanced to support critical operations, these enhancements would not qualify for FFP. Redevelopment of a new system is recommended, as is an incremental approach.

At a summary level, the sourcing options for redeveloping the system are:

2. Obtain a new system

a. Transfer from another state with comparable mission, implementation strategy, and functionality

| Business Criteria | Pros | Cons | Rating |
|-------------------------|--|---|--------|
| Feasibility | MA implemented and customized PA HCSIS as major component of its solution There is an experienced commercial implementation partner | Likely to require further customization Requires an Implementation Partner | High |
| Stable Requirements Fit | Unknown until Gap Analysis | | NA |
| Relative Cost Advantage | No product or licensing costs | Requires an Implementation Partner | Medium |

| | | | |
|-----------------------------------|--|---|--------|
| Relative Time-to-Market Advantage | May offer a “jump start” of a year or more relative to Building from scratch | Likely to require further customization | Medium |
| Ease of Enhancement | Unknown | May not be designed for customization. | Low |
| Supportability | Unknown | Requires DDS to staff/obtain developers as well as Oracle DBA for knowledge transfer to state and ongoing maintenance | Medium |

b. Buy an application suite

i. And do not customize the package

1. Change current processes if necessary

| Business Criteria | Pros | Cons | Rating |
|-----------------------------------|--|--|---------------|
| Feasibility | Unknown until RFI/RFP | | NA |
| Stable Requirements Fit | Unknown until Gap analysis | | NA |
| Relative Cost Advantage | | Vendor Product, implementation, and maintenance costs. | Medium |
| Relative Time-to-Market Advantage | May offer a “jump start” of a year or more relative to Building from scratch | | High |
| Ease of Enhancement | Unknown | May not be designed for customization | Low |
| Supportability | Unknown | <u>If install,</u> Requires DDS to staff/obtain developers for knowledge transfer to state and ongoing maintenance | Medium |
| | | <u>If subscription</u> | High |

c. Buy an application suite
i. And customize the package
1. By Building new functionality

| Business Criteria | Pros | Cons | Rating |
|-----------------------------------|--|---|---------------|
| Feasibility | Unknown until RFP and Gap Analysis | | NA |
| Stable Requirements Fit | Agency can implement systems vision | Requires product-informed gap Analysis and Impact assessment | High |
| Relative Cost Advantage | | Vendor Product, implementation, customization, and maintenance costs. | Low |
| Relative Time-to-Market Advantage | May offer a “jump start” of a year or more relative to Building from scratch | May lose the time-to-market advantage of Buy vs. Build | Low |
| Ease of Enhancement | Unknown | May not be designed for customization | Low |
| Supportability | Unknown | Requires DDS to staff/obtain developers for knowledge transfer to state and ongoing maintenance complicated by modifications on top of base product | Low |

- d. Buy an application suite
 - i. And customize the package
 - 1. By configuring the package using built-in product customization tools
 - a. Select components
 - b. Modify Workflow
 - i. Edit business rules

| Business Criteria | Pros | Cons | Rating |
|-----------------------------------|---|---|--------|
| Feasibility | A number of states have implemented case management frameworks | | NA |
| Stable Requirements Fit | State can implement enterprise vision and agency can implement systems vision | Requires product-informed gap Analysis and Impact assessment | High |
| Relative Cost Advantage | | Vendor Product, implementation, and maintenance costs. | Low |
| Relative Time-to-Market Advantage | May offer a "jump start" of a year or more relative to Building from scratch | | Medium |
| | May offer a "jump start" of another year or more relative to Buy/Build | | High |
| Supportability | Unknown | Requires DDS to staff/obtain business analyst and/or developers for ongoing maintenance | Medium |

3. Build a new system

- a. **With current IT resources** – this staffing option for the Build approach is eliminated as current IT resources are 90% FTE on maintenance, supporting current production applications.
- b. **With additional, durational IT resources** – this staffing option is recommended for the Build approach

| Business Criteria | Pros | Cons | Rating |
|-----------------------------------|--|--|---------------|
| Feasibility | Internal team has successfully developed individual applications in the suite within a consistent architecture | Lack of adequate project management, business analyst and other resources (listed in approach costing) | NA |
| Stable Requirements Fit | agency can implement systems vision | Ability to obtain clear, stable requirements "from scratch" across all business functions is uneven | Low |
| Relative Cost Advantage | Lowest cost solution for delivering comparable functionality | Less access to base of intellectual capital already invested in commercially available products | Medium |
| Relative Time-to-Market Advantage | Competitive if build approach is based on architected reuse | Tendency to slowest time to market for comparable scope, quality, and design | Low |
| Ease of Enhancement | Competitive if build approach is based on architected reuse | Same as original build | Medium |
| Supportability | Unknown | Requires DDS to staff/obtain business analyst and/or developers for ongoing maintenance | Medium |

This summary of options suggests a range of viable sourcing strategies for DDS HCBS Waiver Integrated Application Suite in the context of the DSS Title XIX workflow.

For ease of comparison, below is a summary illustration of the sourcing spectrum for project risks, costs, and time-to-market, assuming comparable scope and quality:

Illustrative Sourcing Approach Risks, Project Costs and Time-to-Market Comparison

| | | | | |
|---|--|--|---|---|
| State Transfer Application w/ Modifications and Implementation by Trained, Receiving State IT Staff | Internal Build Reusable (on strategic framework) with additional, trained project state IT staff | Commercial off the Shelf (COTS) implemented As Is (no code modifications) by specialist implementers (possibly a subscription service) | COTS implemented with code modifications by specialist implementers | COTS implemented As Is with product customization tools to modify detailed application design |
| Medium Risk | High Risk | Low Risk | Medium Risk | High Risk |
| \$10.3-\$8MM | \$13.8 - \$11MM | RFI/RFP dependent | \$32.6 - \$26.1MM | \$15 - \$50MM |
| 3 yrs* | 4 yrs* | 2 yrs** | 4 yrs* | 3 yrs* |
| High Reuse Potential Across States & Low Reuse Potential within State | High State Reuse Potential | Unknown State Reuse Potential | Low State Reuse Potential | High State Reuse Potential |

*Assumes an additional first year of development for Federal and State planning, Staffing/Statements of Work, RFP development, Product Fit-Gap Analysis as well as ongoing Change Management

**If there is a viable solution of this type, turnkey can be within 1 year, but another year is assumed for clean data conversion.

The ranges for estimated total project costs are based on a sampling of peer state studies (Minnesota), conversations (Massachusetts, Louisiana), and/or internal reference applications (Connecticut).

More systematic and representative peer state reviews may be needed for an Implementation APD, with regard to viable public sector sourcing options, to ensure as much reliable project information as possible in advance of an RFP and associated funding.

Strategic Sourcing Options

Among the application sourcing options for DDS, including specific product and service solutions an RFP may identify, are three that can be considered strategic, potentially advancing long-term systems sustainability goals, chiefly, overall reductions in total cost of ownership achieved by leveraging common, flexible, affordable solutions.

Three strategic sourcing options are:

- Buy “Configurable” Approach – bid and buy a case management framework for the entire application suite that is also configurable, ultimately by state staff. That is, functionality changes can be made with built-in product customization tools at the business requirements level; for example, by means of end-user maintenance tables for business process rules.
- Build “Reusable” Approach - the application suite is build internally with additional, durational resources based on an integrated application architecture making extensive reuse of “plug-in” parts and services, a kind of architected pre-fab.
- Mix and Match “Common” Solutions (Transfer, Buy, Build) - Consider each building block for the application suite separately with regard to strategic sourcing options: building some, transferring or buying others, and integrating them.

Buy-Configurable Approach

The marketplace may offer case management application frameworks as commercial off the shelf software (COTS). While these are complex, large-scale implementations, especially high-risk in the disruptive dynamics of social service organizations, they may come with product customization tools usable by a business analyst. If so, case management frameworks can offer the best of both worlds: 1) customized business applications that do not require programming (another pass through the Build methodology) and 2) relatively improved systems development time-to-market.

Procuring such a framework, however, can be a lengthy and costly proposition for which only the largest agencies may be able to obtain required state funding in view of the scale of potential benefits. Moreover, an agency or an agency partnership must have adequate depth of available expertise across each key business function to be enabled within the framework. Without that, needed

modifications from one agency to the next would not be implementable. For these reasons, complex, large-scale implementations are typically advised to reduce their risk of implementation failure by piloting a feasible solution.

The up-front investment costs of a case management framework may be reducible if the framework can be leased with the supporting infrastructure, with an option to buy. Time-to-market can be significantly improved with an experienced implementation partner. Practically, these are alternatives an RFP for the DDS Integrated Application Suite for HCBS Waiver Consumer Services Coordination should not preclude. To that end, total project costing should include as a reference, or an option, the allocated cost of such a framework to this project, considering such consortia contracts as those available through GSA Advantage, Massachusetts ITS-19, and so forth.

Build-Reusable Approach

Building a case management framework, at this scale, is an option only within a centrally managed, shared development service, staffed with expert developers, whether employees or consultants, pursuing common industry best practices. That is unlikely without a persuasive business case for the potential long-term savings of a shared services development group in modernizing large chunks of state legacy applications, compared with procuring a replacement for each legacy application. Even more foundational, however, is streamlining of agency processes for which applications need to be phased out, connected, replaced or developed.

Typically, building an application takes longer to deliver the same product quality than buying one “off the shelf.” More thought and experience has typically been invested in commercial COTS than is available for an in-house developed application. But this generalization assumes the same functional scope in both cases, that the COTS are production-ready, and that the COTS are not heavily code-customized to meet requirements, eroding any time-to-market advantage.

Over time, a stable group of developers may be able to compete with the time-to-market advantage of a vendor COTS, provided a best practice of code reuse (nowadays, Web parts) in the context of a consistent, layered application architecture. Practically, the state model of distributed application development leaves only larger agencies with a critical mass of developers to build a core competency. Unfortunately, that productivity gain cannot organizationally be leveraged across other agencies. In short, a fully distributed model of application development does not foster an enterprise-wide architecture.

Mix and Match “Common” Approach (Transfer, Buy, Build) Within a Consistent DDS Information Technology Architecture

With this approach, each of the project’s technical objectives can be approached differently, offering potentially the most flexibility but also the most integration complexity. The strategic aspects of this option are the potential to leverage common solutions across states, within the state, and within the agency for their composite scale economies and overall technology advancement.

Sourcing options need to be assessed separately with reference to their impact on the whole, the latter requiring a clear architectural reference against which each choice is assessed. Lacking such a reference, a solution mix and match tends to leave gaps, produce overlaps, require difficult integration, and/or increase total-cost-of-ownership.

Enterprise architecture, such as the Medicaid ITA recognizes three major building blocks: business, information, and technical. Framing systems development this way, as if triangulating across the components of the envisioned system, can mitigate the disadvantages in the mix and match approach. What the business architecture captures, such as the need for Extranet access to applications may suggest needed technical services, such as Single Sign On. What the information architecture captures can suggest reporting gaps, and so on.

B. PROJECT MANAGEMENT PLAN FOR PLANNING

Managing Program and Project Risks

An adequate plan for this project's scope will ensure that:

1. Measurable program objectives provide the benefit targets for technical objectives
2. Risks of multi-year projects in changing political, economic, social, and technology environments are addressed as part of development strategy
3. Systems development projects grouped or phased to meet overall program business objectives are managed with reference to holistic program objectives as well as discrete project objectives
4. Systems development projects are managed based on the state's Executive Branch systems development methodology (SDM) to quality-assure systems product delivery based on Executive Sponsor(s) and Project Steering Committee acceptance of Project Team-developed business requirements, systems design, solution construction, end-user acceptance testing, and other key deliverables at project phase milestones
5. Technical objectives are implemented within an integrated, sustainable state-standards-based technical architecture referencing the Medicaid Information Technology Architecture (MITA) conceptual framework;
6. Inter-agency interfaces are based on governing data exchange standards for the applicable business data domain
7. Project objectives are feasible and realistically resourced, including development, knowledge transfer to state employees, and ongoing maintenance costs and staffing;
8. Project resource plan addresses the cumulative effect of increased maintenance duties on state staff that limits discretionary resources available for strategic state IT initiatives. Production DDS applications support is provided internally by state employees. DDS development staff is currently allocated 90% to maintaining production applications.
9. Vendor management is based on competitive bid, consistent requirements, contracted performance measures, and conformance to Executive Orders and state policies
10. Development and production systems are maintained with the required levels of security, availability, performance, and scalability

As outlined, there will be many challenges to the successful completion of the DDS Integrated Application Suite for HCBS Waiver Coordination of Consumer Services. Viewed from the project management perspective as potential implementation risks, they require advance systemic mitigation, through the project's planning phase, culminating in an Implementation APD and RFP

specification.

Below are key systemic risk mitigators identified for project risk management as part of the planning phase.

State-wide Project Prioritization for Funding and Other Resources (Addresses Risk 1, 2, 8)

The critical state deficit will continue to pressure available state funding, not only through the Legislative Results-Based Accountability (RBA) appropriations review process, and ongoing agency rescissions and budget cuts, but through such consolidation initiatives as those reflected in the recommendations of the Committee for Enhanced Agency Outcomes.

These risks can be mitigated in six ways:

- Prioritize state, branch, and agency initiatives and resources based on earliest realization of most state value at least additional cost
- Use planning and governance processes for multi-year initiatives that allow gating projects every 3-6 months for their relative prioritization, updated costs and benefits, updated risks and issues, and any governance changes. The state SDM effectively does this for systems development projects.
- Seek opportunities to leverage scale economies, whether process, technology, or staff resources across agency, branch, and state portfolios of essential, high-priority projects.
- Use contingency staffing and resources. The state contract for Professional IT Services, among others, effectively does this for PM and IT consultant resources.
- Contribute to, select, and implement business applications only within and on current industry state standards. The design reviews within the SDM are oriented to this goal.
- Require that purchased applications be implemented and maintained on interoperable, current, industry state standards

Systems Development Portfolio and Project Management (Addressing Risk 3)

Per below, continued use of the state SDM, coupled with effective project management, is assumed. However, it must be supplemented within DDS with active, ongoing prioritization of the HCBS Waiver system development efforts

that comprise a portfolio of projects to be managed with reference to common program outcomes.

While this is ultimately business-driven, there are technical aspects to project prioritization that business perspective alone may not resolve. For example, the Executive Sponsor and Steering Committee may assess one application as the most critical one in meeting the volume and urgency of DDS needs and satisfying the most end-users, but a technical feasibility review will find that it depends on a less critical project being completed first. In short, portfolio management of systems development projects focused on supporting a program requires a dialogue between business and technology leadership.

Use of Systems Development Methodology (SDM) (*Addressing Risks 1, 3, 4, 5, 7, 9, 10*)

A comprehensive planning process and project management framework has been instituted within the state's Executive Branch to ensure that business goals are accurately reflected and the technology approach is in alignment with the statewide guidelines governing potential enterprise projects established by the State CIO. The Agency may utilize the Systems Development Methodology (SDM), developed by DOIT, mandated for the Executive Branch by Executive Order 19.

An oversight structure has been defined that includes a Project Steering Committee. The Project Steering Committee is a group of DDS Business and Senior IT Leaders supplying the decision-making process with a business-level perspective that may not be visible to the project team. The Project Steering Committee provides oversight and guidance to the Project Team to ensure that the project is implemented successfully and delivers the outcome as specified. The Project Team is the decision-making body responsible for the execution of the project and the successful delivery of business capabilities. The Project Team structure is defined in the diagram included as Appendix 1

Reference to the Medicaid ITA (*Addresses Risks 2, 5, 6*)

The Center for Medicare and Medicaid Services (CMS) that oversees operation of the department's HCBS Waivers has expectations that the department use data to meet Waiver Assurances, manage the overall quality, and program and fiscal integrity of these waiver services, through discovery and audit functions as well as remediation and follow-up functions.

Recognizing Connecticut DSS (Dept of Social Services) as the single state Medicaid agency, CMS expects that the DDS Title XIX billing interface (and any feeder applications) to DSS will conform to the DSS data exchange standards as they may evolve through national and state standards-setting and evolution, particularly in the health care arena. This requirement will need to be detailed as a technical specification (and data dictionary) within the DDS technical objective of developing information architecture adequate to its envisioned application suite.

The Medicaid ITA provides a conceptual framework within which complex, layered, and intersecting business IT applications can be guided towards the required level of integration, boundary management, and non-redundancy, by examining the interplay of business, information, and technical architectures. The MITA framework also serves as a planning process in that applying the framework ensures a systematic general design review for the application suite as a service-oriented conceptual architecture.

Sourcing Options that May Lessen Future Systems Maintenance Burden (Addresses Risk 8)

The standard application sourcing options the state avails itself of typically bring a long tail of system maintenance post-implementation. This is a costly resource problem that one agency or state cannot solve on its own.

Within an agency, it may be possible to streamline business workflows and approval processes with the result, among others, that many fewer distinct application niches need to be filled. This can translate into leveraging more common solutions supported with more internal bench-strength.

An agency may also be able to favor application development options that reduce the future state maintenance burden; for example, COTS that are Software as a Service (SaaS), or applications, built or bought that are easier to modify more quickly.

DDS Use of the State Data Center (Addresses Risk 5, 10)

DDS obtains its production server support for multi-user production systems from the state Data Center based on chargeback for services utilized. DDS applications currently supported at the DOIT Data Center include:

- eCAMRIS

- Level of Need
- Case Notes
- Web Res Day

The state Data Center is secured, staffed and equipped to provide the level of security, performance, and access that 7x24 public-facing Internet applications require. Given DDS vision to provide Extranet (Provider and family member) access to new enterprise applications, that and more is the level of production support required. DDS cannot afford to build its own Data Center competing to provide that level of production service and intrusion risk management. Whether there are equally data-secure options at lower cost available through public or private cloud computing may need to be researched.

Legacy multi-user Access applications are supported under Citrix on production DDS servers at the state Data Center... These legacy applications include:

- HCBS Waiver Eligibility Management
- Abuse/Neglect Tracking
- DDS Eligibility
- CLA (Community Living Arrangements)/CTH (Community Training Home) Licensing

C. PLANNING PROJECT BUDGET AND COST ALLOCATION

DDS Requested Funding

This PAPD is seeking **\$234,748** (federal share is detailed on page 7) for planning activities associated with the DDS Integrated Application Suite project. Although this funding request is less than the prior approval thresholds (\$300,000) established in federal regulations, this PAPD submission is also intended to seek “buy-in” by the federal oversight agencies at this critical juncture in the project life cycle. Because the success of this project ultimately depends on a successful relationship between the State and the Federal government, we are seeking this approval to ensure there is agreement at this initial stage in the planning process.

DDS Schedule of Planning Activities, Milestones and Deliverables

The planning phase activities outlined below culminate in an Implementation APD, the state’s justification for Federal financial participation (FFP) in funding the system development needed to implement the planned DDS Integrated Application Suite for HCBS Waivers for Coordinated Consumer Services.

Co-terminus with the Implementation APD is DDS Project Team completion of the state’s SDM Business Requirements milestone, readiness to issue a funded RFP (Request for Proposal) based on Executive Sponsor(s) approval.

Accordingly, the activities listed below are those necessary to reach the state Business Requirements milestone for the state Executive Branch project as well as those HHS (ACF, CMS, FNS) has suggested in its ADP Systems Guide (1996, updated 10/2010) as within scope of the IAPD (Implementation APD) Project Planning phase.

Planning Phase Deliverables, Roles, and Estimated Levels of Effort

Task resource assignments, durations, and consequent start and end dates are feasible with PAPD approval.

| <i>Planning and Implementation APD Planning Tasks</i> | <i>Executive Sponsor and Project Steering Committee Governance</i> | <i>Estimated State SME (Subject Matter Expert) Level of Effort (work days)</i> | <i>Estimated PM Consultant Level of Effort (work days)</i> | <i>Estimated Business Analyst Consultant Level of Effort (work days)</i> |
|---|--|--|--|--|
| | | | | |

| | | | | |
|--|-----|--------------|--------------|--|
| Project Organization | 0 | 0 | 0 | |
| <i>Develop Project Mgmt and/or Business Process Analyst Consultant Statements of Work</i> | 1 | 1 | 1 | |
| <i>Interview Candidates</i> | 2 | 3 | 2 | |
| <i>Issue DDS PM Consultant Purchase Order Referencing state DOIT contract for Professional IT Services</i> | 1 | 0 | 0 | |
| <i>Consultant Orientation</i> | | 2 | 3 | |
| <i>Ensure pertinent Federal resources identified</i> | | 0 | 1 | |
| <i>Engage HHS Benefitting Program Reps</i> | | 0 | 0.5 | |
| <i>Engage DSS MMIS Subject Matter Expert</i> | | 0 | 0.5 | |
| <i>Interview DDS Functional Managers</i> | | 2 | 2 | |
| | | | | |
| Project Communications | | | | |
| <i>Executive Sponsors updates (weekly)</i> | | 0 | 0 | |
| <i>Project Steering Committee review meetings (monthly)</i> | | 3 (0.5 each) | 3 (0.5 each) | |
| <i>Informational updates for Provider Council (monthly)</i> | | 3 (0.5 each) | 3 (0.5 each) | |
| <i>DoIT project reviews (?)</i> | | | | |
| | | | | |
| Project Funding | | 0 | 0 | |
| <i>Review Federal guidelines (APDs, CAM, Title XIX, MMIS)</i> | | 0 | 1 | |
| <i>Review Cost Allocation Methodology</i> | 0.5 | 2 | 3 | |
| <i>Obtain DDS cost allocation data</i> | | 4 | 0 | |
| <i>Allocate Federal and State Share for Systems Development</i> | | 2 | 0.5 | |
| <i>Review State Funding Commitment</i> | 0.5 | 0 | 0 | |
| | | 0 | 0 | |
| Project Definition and Planning | | 0 | 0 | |
| <i>Ongoing Review of PAPD content drafts</i> | 2 | 3 | 4 | |
| <i>Review of As Is Application</i> | | 2 | 4 | |

| | | | | |
|---|-----|-----|-----|--|
| <i>Suite</i> | | | | |
| <i>Review of To Be Application Suite</i> | | 1 | 0.5 | |
| <i>Draft PAPD Including</i> | | 0 | 0 | |
| <i>Statement of Need including</i> | | 0 | 0 | |
| <i>DDS Program Objectives</i> | | 0 | 1 | |
| <i>Overall Needs Summary</i> | | 0 | 1 | |
| <i>Planned Application Architecture (To Be)</i> | | 0 | 0 | |
| <i>Current Business Process Context Diagram (As Is)</i> | | 1 | 4 | |
| <i>Current Functional Workflow Gaps and Deficiencies (As Is)</i> | | 2 | 1 | |
| <i>Project Technical Objectives (Minding the Gap)</i> | | 0 | 1 | |
| <i>Alternatives Comparison (Solutions Approaches)</i> | | 0 | 3 | |
| <i>Project Management Plan to Plan (referencing state SDM and Medicaid ITA)</i> | | 0 | 3 | |
| <i>Project Systemic Risks and Program Mitigators</i> | | 0 | 1 | |
| <i>Planning Phase Budget and Cost Allocation (Includes Detailed Plan for Next Phase, Business Requirements)</i> | | 1 | 2 | |
| <i>Estimated Total Costs For Project</i> | | 0.5 | 6 | |
| <i>Recommendation to Commissioners (DDS, DSS) for submitting PAPD with funding request</i> | 0.5 | 0.5 | 1 | |
| <i>Obtain Federal Approval of PAPD</i> | | 0 | 0 | |
| Proceed to FFP IAPD/SDM Business Requirements | | 0 | 0 | |
| <i>Hold Business Issues Phase-end Decision Point meeting (Go, No Go, Redirect for next phase)with Executive Sponsor and Project Steering Committee Pending CMS Approval of PAPD</i> | 0.5 | 1 | 2 | |

| | | | | |
|--|-----|----|----|----|
| <i>Form Business Requirements Project Team (state is responsible for ranking requirements and scoring RFP responses)</i> | | 1 | 0 | |
| <i>Review IAPD drafts</i> | | 5 | 8 | |
| <i>Complete Business Requirements Definition (to the level of functionality required for a COTS or Services RFP, if not to the level of Build. Procedural BR refinement is resourced in Build Reusable costs model as iterative RAD Prototype development Including below:</i> | | 0 | 0 | |
| <i>Hold Business Function and Requirements Prioritization Decision Point meeting if a Proof of Concept is needed to jump start, support, and complete guided Requirements Definition.</i> | 0.5 | 1 | 3 | |
| <i>Peer State Reviews for Leading Solution Approaches (4 approaches with 3 states each assumed)</i> | | 30 | | |
| <i>Federal GSA contract options review</i> | | 1 | 2 | |
| <i>Solution Alternatives Feasibility Analysis and Approach Recommendation referencing Gap Requirements</i> | | 0 | 6 | |
| <i>Eight-year Cost-Benefit Analysis w/ no more than five years development assumed</i> | | 6 | 12 | |
| <i>Deployment Strategy and Plan</i> | | 4 | 0 | |
| <i>Overall Project Workplan</i> | | 2 | 10 | |
| <i>Business Architecture Requirements</i> | | 6 | | 6 |
| <i>Information Architecture</i> | | 5 | | 10 |

| | | | | |
|---|-----|----|---|----|
| <i>Requirements</i> | | | | |
| <i>Application Suite Conversion or Integration Requirements For Automated Applications (~15)</i> | | 30 | | 15 |
| <i>Functional and Non-Functional Requirements Workbook For Non-Automated Functional Applications (~6)</i> | | 36 | | 18 |
| <i>Prepare RFP Requirements Ranking and Weighting</i> | | 6 | 1 | 5 |
| <i>Detailed Project Schedule for Remaining Project Development Phases</i> | | 2 | 5 | |
| <i>If needed in addition to peer state reviews and before RFP, structure competitive online COTs demos as RFI</i> | | 30 | | |
| <i>Proof-of-Concept Findings with Updated Business Requirements Solution Alternatives Approach Recommendation Deployment Strategy and Plan Overall Project Workplan Functional and Non-Functional Requirements Workbook (Ranked and Weighted)</i> | | 10 | 1 | 10 |
| <i>Detailed Project Schedule for Remaining Project Development Phases through Implementation</i> | | 1 | 3 | |
| <i>Planned Acquisitions through Implementation</i> | 0.5 | 1 | 1 | |
| <i>Hold Business Requirements Phase-end Decision Point meeting (Go, No Go, Redirect for next phases)with Executive Sponsor and Project Steering Committee Pending Federal Approval of IAPD and RFP</i> | 0.5 | 2 | 1 | 1 |
| <i>Obtain Federal Approval of IAPD</i> | 0.5 | 0 | 1 | |

| | | | | |
|---|------------------|------------------|------------------|-----------------|
| <i>Obtain Federal Approval of RFP</i> | | 0 | 3 | |
| <i>TOTAL Planning Level of Effort Estimates by Role</i> | 10 | 207 | 106 | 65 |
| TOTAL Planning Costs By Role | \$5863 | \$121,377 | \$72,928 | \$34,580 |
| | \$127,240 | | \$107,508 | |

| | | | |
|---|--|--|--|
| Proceed to FFP Systems Implementation/SDM Design, Construction, Testing, and Implementation | | | |
| <i>Conduct Approved-Project(s) Systems Design, Construction, Testing, and Implementation Phases based on DDS development strategy with State SDM methodology, including Post-Implementation Reviews</i> | | | |

DDS Project Cost Allocation

Costs for planning activities are provisionally allocated using the HHS (ACF, CMS, FNS common) recommended benefitting-program cost allocation methodology for distributing costs across the various federal, state, and private human services programs. Connecticut DSS (SSCA) provided middle-of-month January 2011 program (duplicated) recipient data.

After factoring non-Federal funding sources and small HHS benefitting programs (those for which recipient counts are less than 5% of the total DDS consumer count), the remaining costs for the project are divided evenly among the remaining major benefitting programs.

For the DDS consumer population, as indicated below, non-recipients of Title XIX (Medicaid) benefits, recipients of program benefits from Title IV-E (Child Welfare) and from TANF (Temporary Assistance for Needy Families) total not more than 8.9% of the total DDS consumer count.

By implication, the remaining 91.1% of the DDS project costs would be allocated equally between Title XIX and SNAP at 45.55% each. Accordingly, the **FFP** for the DDS HCBS Waiver project would be 45.55% of the enhanced MMIS (Medicaid Management Information System) funding of 90%, or **41%**

| Cost Allocation Table for DDS Integrated Application Suite for HCSB Waiver Coordinated Consumer Services | | | | | |
|---|-------------------------------------|--------------------------|--------------------|----------------------|--------------------|
| Program | Monthly Receipts (1/10/2011) | Cost Allocation % | Gross Costs | Federal Costs | State Costs |
| Title XIX | 12,665 | 79.43% | | | |
| Title IV-E | (Less than 300) | (<1.9%) | | | |
| SNAP | 1,531 | 9.60% | | | |
| TANF | 14 | 0.08% | | | |
| Other Funding | 3,280 | 20.57% | | | |
| DDS Total | 15,945 | 100.00% | | | |

D. TOTAL PROJECT COST

Project Development Costs Over Five Years

As the sourcing spectrum illustrates, development costs and timeline for comparable functionality may vary based on the sourcing approach. For that reason, efforts were made to estimate total development costs for each of the three strategic sourcing approaches outlined above. However, those estimates are at best order-of-magnitude estimates with different levels of confidence.

Until business and technical requirements are complete, an objective of the Implementation APD and the co-terminus Business Requirements phase, there is not enough information to estimate total development costs over 5 years with a high confidence level.

For external solutions (state transfer, functional COTS, case management framework) we were able to compare relative scopes for a given approach with other states whose implementation costs are finalized.

- For Buy “Configurable” sourcing, we approached Louisiana contacts for information on their implementation, representing the most disaster-challenged end of this approach. For a more conventionally challenged estimate, we scaled the finalized costs of Connecticut’s largest, successful, highly complex implementation across more than 80 agencies of a configurable (ERP) application. Detailed costing is not provided for this approach.
- For Build “Reusable” sourcing (with augmented resources) we were able to contrast widely varying, recent development experiences for the reinforcement they offer about project risks and needed mitigators. These are built into the project approach costing, including needed program and project management, dedicated business ownership through the requirements phase, an effective application development organization based on code reuse, and related tools and support roles to maximize the productivity of the development team and the quality of their products. The costing for this approach is provided in Appendix 2.
- For “Common” Mix and Match (Transfer, Buy, Build) sourcing, we reviewed Massachusetts IAPD and approached the state to review approach and scope differences. The comparative method for arriving at these costs estimates is summarized in Appendix 3.

Estimated Ongoing Operations Costs

Variation in ongoing operations costs is due chiefly to licensing costs associated with external solutions. Personal services are treated as essentially the same because knowledge transfer costs are included in development costs, effectively leveling the cost differentials across vendor product implementation partners. Environmental refreshes, such as servers, assumed every 3 years, are annualized.

For Planning APD purposes, ongoing annualized operations costs are estimated at 20% of cumulative 5-year development costs for the sourcing approaches costed.

| Solution Sourcing Approach | Ongoing Annualized Operations Costs |
|---|--|
| Buy Configurable Framework for Application Suite, including Reporting | RFI/RFP-dependent |
| Build Reusable Business Application Services | \$2.8 – \$2.2MM |
| Mix and Match Common (Transfer, Buy, Build) and Integrate | \$6.5 - \$5.2MM |

Appendix 2- Estimated Project Development Costs – Build Reusable

An organizational development based on architected code reuse model is valid only if all risk mitigators are in place, optimizing the developer work environment for the right mix of stable expectations and managed change. The development project costing below includes program and project management staff, in addition to the core developer team, to ensure that identified project risk mitigators are sustained throughout the project. This provides an 80% confidence level for the development project cost estimating based on a “build reusable” approach.

Business Functions

Based on discussions of the actual level of role effort required, and lessons learned, from internal DDS development of the **Case Notes** application, in production January 4, 2011, and **Individual Plan/6**, in design, a project team of 19 additional staff (and additional short-term specialists) with the following roles are needed to realize the organizational model and provide the needed product delivery capabilities the model assumes:

- Experienced, ideally certified program and project manager, also responsible for project staffing and assuring knowledge transfer to additional state employees designated to assume maintenance of production applications
- Experienced, ideally certified project administrator, responsible for developing and maintaining project plans and reviews, and for QA of SDM project deliverables
- Experienced, business analysts in a dual role: 1) trained in facilitation skills, developing business requirements with functional business owners based on scope and priorities set at the DDS leadership level, and 2) providing integration testing as developers check-in unit-tested application components.
- Technical application architect, experienced in developing common business-enabling technical services serving as team design lead, both for individual applications under development and for reuse of component parts
- Experienced, ideally Microsoft .Net certified Web application developers, oriented to applications designed for production-ready reuse
- Experienced Web parts reuse engineer focused on readying developed Web parts for production use, including development and maintenance of a code reuse library and inventory for DDS (or state) developers
- Experienced, ideally SQL-Server certified DBA, able to provide both transactional and decision-support database design and support
- Experienced change and configuration controller, supporting PVCS-based development code version control and management
- End-user trainers who deliver and develop required content, ideally utilizing available state learning management systems for online training development.

The five-year project development costs for these durational staff are based on staffing IT consultants through the competitively-awarded DOIT state contract for Professional IT Services or a bid for organized software development services. Initial project development costs, inflation-adjusted, are leveled on the assumption that an organizational capability is being sought sufficient to deliver within the five-year development timeframe. If experienced state staff is assigned to the project, out-of-pocket costs for this project may be less, though opportunity costs are about the same. In any case, actual committed and accrued costs would be the basis of future project planning and reporting. One of the advantages of this sourcing approach is that COTS-specific implementation partners, typically at significantly higher hourly rates (\$175-\$250), are not required, subject to the proviso that this sourcing approach does not require customized interfaces with specialized or proprietary COTS packages or frameworks.

| Role | Value Add | Est. Hrly Rate | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|--|---|----------------|-----------------|-----------|-----------------|-----------|-----------|
| Program Manager (1) | Program and Project Risk Mgmt | \$86 | \$151,360 | \$155,900 | \$160,577 | \$165,395 | \$170,357 |
| Project Administrator (1) | Maintain Project Plan/QA SDM deliverables | \$42 | \$73,920 | \$76,137 | \$78,422 | \$80,774 | \$83,198 |
| Business Analyst/ Integration Tester (2) | Facilitated requirement definition, traceability, and application design review | \$55 | \$193,600 | \$199,408 | \$205,390 | \$211,511 | \$217,898 |
| Design Lead (1) | Application architect | \$88 | \$154,880 | \$159,526 | \$164,312 | \$169,241 | \$174,318 |
| HIPPA web EDI interface specialist (6 months) | SSMA Title XIX systems integration | | \$82,560 | | \$87,588 | | |
| Web developers (4) | Application programmer and unit, systems, performance testing | \$64 | \$450,560 | \$464,076 | \$477,999 | \$492,339 | \$507,109 |
| Application reuse engineer (systems programmer) (1) | Maintain reusable parts inventory for developers | \$72 | \$126,720 | \$130,521 | \$134,437 | \$138,470 | \$142,624 |
| Transactional | Develop | \$88 | \$154,880 | \$159,526 | \$164,312 | \$169,241 | \$174,318 |

| | | | | | | | |
|--------------------------------------|--|------|--------------------|--------------------|--------------------|--------------------|--------------------|
| DBA (1) | Target Production Database | | | | | | |
| Configuration and Change control (1) | Maintain code find and version control | \$72 | \$126,720 | \$130,521 | \$134,437 | \$138,470 | \$142,624 |
| Trainers (2) | End-user Training | \$65 | \$228,800 | \$235,664 | \$242,734 | \$250,016 | \$257,516 |
| Tech writer (1) | SDM deliverables and auto systems Help function | \$40 | \$70,400 | \$72,512 | \$74,687 | \$76,928 | \$79,236 |
| Dev Env Costs (Licenses) | Automated support for integrated requirement and defect tracking | | \$250,000 | \$50,000 | \$50,000 | \$50,000 | \$50,000 |
| Total Yearly | | | \$2,064,400 | \$1,242,820 | \$1,974,895 | \$1,315,464 | \$1,353,427 |
| Total 5 Yrs | | | \$7,951,006 | | | | |

DDS Integrated Information Architecture

Referring to the overall program technical objectives, the costs of implementing an integrated Information Architecture, the common data foundation for individual business services in the application suite, including Reporting and Analytical services, must also be estimated. (Costs of defining requirements for the Information Architecture are included within planning costs.)

| Role | Value Add | Est. Consultant Hourly Rate | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---------------------------|---|-----------------------------|-----------|-----------|-----------|-----------|-----------|
| Data Architect (6 months) | Data Implementation options and conversion sequence | \$88 | \$77,440 | | \$82,156 | | |
| Data Analyst (2-1) | Facilitated cross-functional data requirements, data modeling, application data segment design review | \$55 | \$193,600 | \$99,704 | \$102,695 | \$105,775 | \$108,949 |
| Decision Support DBA (1) | Develop Target Reporting Environment | \$88 | \$154,880 | \$159,526 | \$164,312 | \$169,241 | \$174,318 |

| | | | | | | | |
|--|--|------|--------------------|------------------|------------------|------------------|------------------|
| Data Conversion (1-2) | Map and move historical production data from stovepipe applications to target consolidated database in proper sequence | \$62 | \$109,120 | \$224,787 | \$231,530 | \$238,476 | \$245,631 |
| Data Migration and Report Env Costs (Licenses) | Automated assistance for data schematizing, mapping, conversion, and clean-up | | \$200000 | \$40000 | \$40000 | \$40000 | \$40000 |
| Total Yrly | | | \$735,040 | \$524,017 | \$620,693 | \$553,492 | \$568,898 |
| Total 5 Yrs | | | \$3,002,140 | | | | |

In sum, the estimated total five-year project development costs, for the build reusable approach , with all risk mitigators in place, is **\$11 MM*** At 80% confidence level, a more realistic estimate is **\$13.8MM (or \$2.75MM annually)**

**To better approximate true personnel costs, included is an add-on of \$5,000 per seat annually for facilities, base office equipment, training, and administering additional consultant staff*

Appendix 3 – Estimated Project Development Costs – Mix and Match

Based on Massachusetts’ strategic DMR objectives outlined in their IAPD Amendment 3 (9/15/2005), the scope of its operationalized, post-development DMR system is at least as extensive, if not more so than Connecticut’s envisioned integrated application suite for HCBS Waivers.

However, Massachusetts implemented their solution entirely within the Medicaid Title XIX system for the common, consolidated system benefits at a higher overall FFP rate (averaging about 77%) than pursuing a DMR specific HCBS Waiver application suite.

Leaving aside the embedded systems difference, we can cost a comparable Mix and Match Connecticut DDS approach by estimating the congruence costs, those for implementing the same functionally specific applications in the same way (Txfer, COTS, Implementation Partners, Interfaces) and estimating the gap costs, those for implementing needed applications in the DDS suite that MA either already had or built themselves.

The table below summarizes how Connecticut DDS HCBS Waiver application suite business functions map to what Massachusetts DMR actually implemented and to the Massachusetts EOHHS (Executive Office of Health and Human Services) sourcing approach.

| Conn DDS Function | MA DMR State Transfer-PA HCSIS | MA DMR COTS –MediTech (proprietary) | MA DMR Build Internally |
|--|--------------------------------|-------------------------------------|-------------------------|
| Waiver Eligibility Determination | [x] | | Used As Is |
| Regional Case Manager Assignment | | X | |
| Scoring Individual Level of Need | | ICAP | |
| Developing an Individual Plan | | X | |
| Health Record and Clinical Support Services | | X | |
| Medication Mgmt | X | | |
| Maintaining Case Notes | | X | |
| Allocating Provider Resources (Service Planning) | | | X |
| Waiver Mgmt | | X | |
| Budgeting Individual Plans | | | X |
| Incident Mgmt | X | | |
| Investigations | | | X |
| Restraints | X | | |
| Quality Service Review | | | |
| Provider Certification and | X | | X (July 2011) |

| | | | |
|---|---|----------|---|
| Licensing | | | |
| Title XIX Billing | X | | Consolidated HHS billing |
| Actual MA Total Development Costs (Based on IAPD Amendment #3) | | | <i>Includes 22 MA additional IT positions</i> |
| | | \$29.6MM | |
| Estimated CT Total Development Costs (Adjusted for State Differences) | | \$26.1MM | |

The following key differences between Massachusetts and Connecticut may impact Connecticut DDS project costs are outlined below.

| Differentiators | Estimated CT 5-Yr Project Cost Impact |
|--|---------------------------------------|
| Massachusetts is a consolidated HHS state agency whereas Connecticut is not. This may offer some strategic advantages for Massachusetts in overall enterprise architecture, avoidance of duplicate systems efforts, a larger pool of internal IT staff, consolidation of IT services such as network administration, lower vendor contract unit costs, and so forth. However, Connecticut DDS assuring the risk mitigators referenced above throughout the project may provide Connecticut a compensating advantage. | \$0 |
| Connecticut DDS is about half the size and scale of Massachusetts DMR: serving 15,000 individuals annually compared with 31,690; 3 regional offices compared with 24 area offices; 185 qualified private providers compared with 265; 4,500 employees compared with over 7,000. All other things being equal, this difference in system scale comparatively reduces Connecticut need for additional systems developers, and maintenance costs in network, equipment, end-user training and Data Center chargeback, an estimated comparative savings, cumulative over 4 years of development (after RFP approval) of \$3.5MM. | \$-3.5MM |