State School Fund System Replacement/ Modernization Project

November 2024

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Progress Summary

ODE Finance and Information Technology subject matter experts have been documenting business rules and preparing the Business Case and Charter with the Project Manager and Business Analyst. The initial Project Manager left the agency and another Senior Project Manager was assigned in late August 2024. The Business Analyst has started a Requirements Traceability Matrix to document business rules and requirements, in advance of formal requirements gathering. Work has also been done to begin documenting the high-level business processes, along with researching and documenting the data used and the data flows through the current SSF System. The agency is in the final stages of the recruitment process for a second business analyst and will extend an offer the week of November 12, pending reference checks.

The Project Manager submitted the Business Case and Charter to DAS Enterprise Information Services P3 Joint for endorsement for Stage Gate 1 in the EIS/LFO State Gate process on November 6, 2024. An endorsement decision is expected by November 15, 2024.

Upon receipt of Stage Gate 1 endorsement, the agency will begin formal requirements gathering, prepare the project plan, risk assessment, resource plans, and other documents necessary for managing a large, mission-critical process, prepare for Stage Gate 2 endorsement, and engage independent quality management services (iQMS). EIS P3 will identify the required artifacts and conditions for Stage Gate 2 endorsement in the Stage Gate 1 endorsement memo. The agency expects that Stage Gate 2 endorsement will be required and earned prior to beginning internal development work.

Executive Summary

The State School Fund (SSF) is the largest line item in the State's General Fund budget. This investment in education is also the primary source of funding for providing K-12 public education for over 552,000 Oregon students.

As part of the biennial budgeting process, the Oregon Department of Education (ODE), in partnership with the Department of Administrative Services Chief Financial Officer (DAS CFO), Legislative Revenue Office (LRO), and Legislative Fiscal Office (LFO), reviews the projected Average Daily Membership (ADM), and projected state and local revenue to establish the Current Service Level (CSL) for the next biennial

appropriation cycle. Through the legislative process, a budget bill is established for the State School Fund to be distributed to School Districts and Education Services Districts (ESD) throughout Oregon. The ODE State School Fund software system is the data and technology system that gathers, stores, calculates, and processes distributions from the State School Fund to Oregon Public School Districts and ESDs.

The State School Fund software system is a critical system that currently apportions approximately $7.8 billion each year, comprised of approximately $5.2 billion in state funding and approximately $2.68 billion in local funding. Within any given year, ODE is actively managing over $20 billion in funding that encompasses the current year, the future (next) year, and the previous year for final reconciliation, pending receipt of school district financial audits.

In addition to the SSF requirements, there are other critical ODE K-12 systems and grant funding programs that are currently dependent on the SSF data in their administration and distribution of resources. Programs such as the Student Investment Account (SIA) and the High School Success (HSS), with resources exceeding $1.3 billion each biennium, also use SSF data to appropriate funding. Similar to the SSF process, point-in-time data extracts from the SSF are used throughout the year to create estimated and final SIA and HSS allocations for all school districts and a large number of charter schools. This dependency by other programs adds to the overall scope and scale of the SSF system and is mentioned to help with understanding of the critical role the SSF system plays on a number of fronts besides the administration of the SSF.

The SSF system has also been used in the past fifteen years to help allocate hundreds of millions of dollars in resources from federal stimulus programs, such as ARRA and ESSER, in response to catastrophic events. This is largely due to the ongoing reliability of the system and mutually agreed upon formulas used in allocating resources in an equitable manner across the state.

The SSF software system is a complex data system used in its current form and technology since the early 2000s. Although this system enables ODE to distribute funding as required, it depends on an outdated and unsupported version of Microsoft Access along with multiple spreadsheets and manual data manipulation processes that raise the risk of system failure that could prevent the ODE from fulfilling its obligation to disburse funds accurately.

A failure in the State School Fund software system would affect 197 school districts and 19 ESDs and more than 130 public charter schools in turn either directly or indirectly, affecting approximately 552,000 Oregon students in grades K-12. There have already been several instances when payments were at risk due to the system failing or not working correctly after software updates or changes to the system were made.

Over the course of several years, ODE has gone through several reviews of the system both internally and externally. First, ODE internal information technology staff reviewed the software for potential critical failure points.

Next, the School Finance unit identified six similar State Education Agencies (SEAs) and inquired about the status of their software model and its design. The results were mixed as some SEAs had internal developments while others could use external software as their funding formula was less complex. To further understand the landscape of potential commercial off-the-shelf solutions (COTS), ODE issued a Request for information (RFI). No vendor responded to the information gathering request.

Finally, ODE hired Info-Tech Research Group (ITRG) to evaluate different development models that included "in-house," outsourced and hybrid development frameworks. Info-Tech's final recommendation to ODE was an in-house development project for a new SSF software system. In addition to the benefits mentioned by Info-Tech, in-house development also provides ODE with an opportunity to apply best practices in architecting and developing the system and resulting programming for the future. Building the SSF software system with best practices will allow ODE to respond to changes in legislative mandates to the SSF software system calculations in a more efficient and timely manner.

The agency is in the final stages of the recruitment process for a second business analyst and will extend an offer the week of November 12, pending reference checks, continues to document business rules, and submitted the Business Case and Charter to DAS Enterprise Information Services P3 Joint EIS/LFO for endorsement for Stage Gate 1 in the Stage Gate process.

ODE estimates the SSF software system modernization project will take 4 years to deploy, starting from the hiring of the project manager and first business analyst in October 2023 and full implementation projected in September 2027. The proposed team includes a Project Manager, two Business Analysts, a

System Architect, six developers, a user experience designer, two testing and QA analysts, and a manager to take ongoing ownership of the SSF software system, with additional support of other IT and business staff. Following deployment, the agency expects to retain a staff of seven for operations and maintenance of the system at least through a two-year system stabilization period. The estimated cost of this project, including staff salaries including inflation and services and supplies, iQMS, and hardware and software from inception through five years of operations and maintenance, is approximately $13.8 million. Dedicated resources to do this work have been requested in a Policy Option Package (POP) and will need to be allocated by the legislature as the internal staffing capacity cannot absorb this project without foregoing other applications that are also critical for other ODE systems.

Background and Purpose

The Oregon Department of Education (ODE) administers the State School Fund, a $7.8 billion line item in the 2023-25 budget, using information system technology that is far beyond its useful life. ODE has determined that this mission-critical system must be replaced and has taken steps to create a major IT project to manage this effort. The Department was directed to use the joint State Chief Information Office (CIO)/Legislative Fiscal Office (LFO) Stage Gate process to document the project's readiness to proceed and to work with DAS (Department of Administrative Services) Enterprise Information Services (EIS) Project Portfolio Performance (P3) to develop initiation and planning documents for a new State School Fund system replacement/modernization.

This report is to provide you with a project status and a projection of what's next as the project moves forward, with focus on the following:

- Project governance, management, staffing
- Project scope, schedule, and budget
- Current or planned procurements/contracts
- Risks and challenges, and any proposed mitigations
- Independent quality management services/findings
- Additional information regarding the status of the project

Project Governance

Project governance will follow the Project Management Institute's (PMI's) standard project roles and responsibilities, which allows flexibility and will be modified as needed by the sponsors and steering committee.

Roles and Responsibilities

Project Sponsors

- Role

    o Provide strategic direction for the project
    o Provide project oversight

- Responsibilities

    o Champion the project
    o Advocate for the project's priority within the ODE project portfolio
    o Approve the project charter
    o Own the project's business case
    o Maintain accountability for deliverables throughout the lifespan of the project

Steering Committee

- Role

    - Provide strategic direction through clear and concise guidance to accomplish ODE business strategies, mission, and goals
    - Provide executive level understanding, alignment, and support for implementing new applications and improving business processes
    o Provide active and visible support for the project and advocates a strong coalition of support among Agency leadership

- Responsibilities

    o Determine how the project goals and objectives are measured
    o Approve the project management, implementation plan, and metrics
    o Monitor and control the project to ensure alignment with the charter
    o Receive escalations for any project deviations
    o Create consistency about project and program governance
    o Inform lessons learned and best practices.

Project Manager

- Role

    o Perform the day-to-day management of the project
    - Manage the project within the approved constraints of scope, schedule, and budget to deliver the specified requirements, deliverables, and customer satisfaction
    o Ensure project activities meet the project objectives
    o Ensure that project team members know and execute assigned roles, feel empowered and supported

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in tasks, and know the roles of the other team members

- Responsibilities
  - o Execute the project in accordance with the established governance plan
  - o Manage the progress and performance of the project management plan
  - o Manage the project partners based on their established expectations

Subject Matter Experts (End Users for this project)

- Role
  - Provide specific business, technology, or content expertise
- Responsibilities
  - o Take an active role in developing business requirements with the business analysts
  - o Develop test cases (test scenarios) to validate the business requirements
  - o Execute the test cases within the new SSF software system to validate the new SSF software system works as needed

The Management and Governance of this project may be adjusted in accordance with the Steering

Committee if needed.

Project Staff

- Project Manager (1)
- Business Systems Analyst (2)
- Systems Architect (1)
- Back-end Application Developers (2)
- Front-end Developers (4)
- User Experience /User Interface Designer (1)
- Quality Assurance Analyst (1)
- User Acceptance Testers (1)
- SSF IT Manager (1)

Note: In addition to the above staff, the project will require staff time and expertise from the existing IT

staff to complete the project successfully, e.g., Network Systems Administrator, etc.

Project Scope, Schedule, and Budget
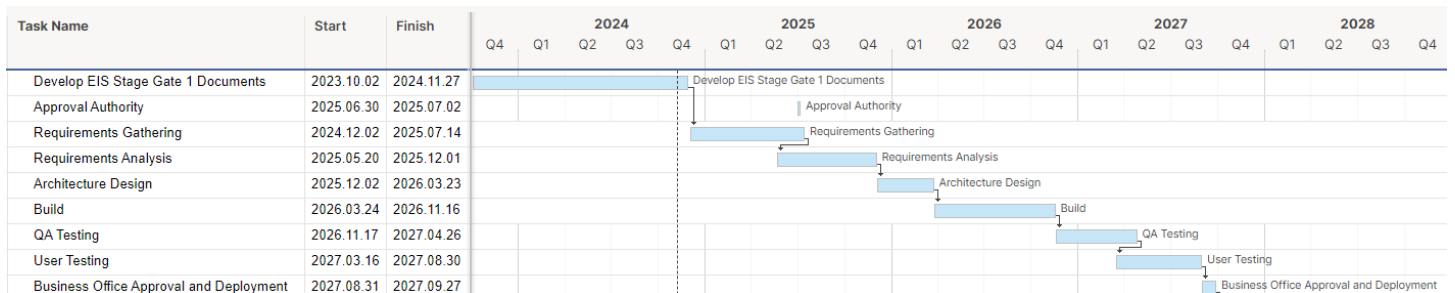
Project Scope

In Scope

The scope of this project is to modernize the conglomeration of loosely integrated productivity tools of the current SSF system, replicate the current functions to include all processes that calculate and disburse funding to each of the 197 school districts and 19 ESDs and the tools needed for estimating payments and reporting, create transparency through publicly available tools, enable forecasting and what-if scenarios, and optimize school finance system processes via a single system that will be developed and fully supported by ODE IT.

Out of Scope

Anything outside of the defined scope is outside of scope. Should the agency discover any historical data issues, any changes to those data are out of scope. Any changes to the Consolidated Collections or other applications that interface with the State School Fund System are out of scope.

Proposed High-Level Schedule

This high-level schedule represents the high-level tasks (Figure 2) for completing a complex project, like modernizing the SSF software system. These tasks represent what needs to be accomplished; however, critical details about what the end solution is and how it integrates with the ODE IT Roadmap are unknown and require time for the project team to work with business operations and the end users to solidify requirements for the new system. The schedule below shows the period of time between the project inception in October 2023 and the estimated date of deployment in September 2027. Following the deployment, the agency will maintain the current system during a two-year system stabilization period.

Task Name	Start	Finish	2024				2025				2026				2027				2028		
			Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Develop EIS Stage Gate 1 Documents	2023.10.02	2024.11.27																					
Approval Authority	2025.06.30	2025.07.02																					
Requirements Gathering	2024.12.02	2025.07.14																					
Requirements Analysis	2025.05.20	2025.12.01																					
Architecture Design	2025.12.02	2026.03.23																					
Build	2026.03.24	2026.11.16																					
QA Testing	2026.11.17	2027.04.26																					
User Testing	2027.03.16	2027.08.30																					
Business Office Approval and Deployment	2027.08.31	2027.09.27																					

Proposed Budget

The estimated cost of the project from inception, through deployment, to a five-year period of operations and maintenance is approximately $13.8 million. This budgetary estimate includes the cost of all IT and non-IT staff working on the project, including inflation and services and supplies; documenting all requirements, actual design and development, quality assurance, user testing, implementation, parallel run of the old and new systems to ensure correct fund distribution to the school districts and ESDs for two years and three years' operations and maintenance after that. Dedicated resources to do this work will need to be allocated by the legislature as the internal staffing capacity cannot absorb this project without foregoing other applications that are also critical for other ODE systems.

Staff Needed

Specialty	Classification	Proposed Start Date	Proposed LD End Date
Project Manager	PM-3 (LD)*	10/1/2023	6/30/2027 ***
Business Analyst	ISS-7 (LD)*	10/1/2023	6/30/2027***
Business Analyst	ISS-7 (LD)	12/1/24**	6/30/2027***
IT Program Manager	Information Technology Manager 2	10/1/2025	NA
Systems analyst/architect	ISS-8	1/1/2026	NA
Back End Developer	ISS7	1/1/2026	NA
UX/UI Designer	ISS4 (LD)	1/1/2026	6/30/2029
Front end developer (2)	ISS-6 (LD)	3/1/2026	6/30/2029
Backend developer	ISS-8	7/1/2026	NA
QA and unit/system testing	ISS-4	7/1/2026	NA
Front end developer	ISS-7	7/1/2026	NA
Front end developer	ISS-7	8/1/2026	NA
UA Tester	OPA-2	10/1/2026	NA

* Positions have been authorized and filled.
** Position in final stages of recruitment.
*** Project is currently expected to go beyond this estimated end date, and a request to extend to 6/30/29 may be made.

Current or Planned Procurements/Contracts

The agency plans to engage an independent Quality Management Service (iQMS) vendor and will initiate a procurement effort for those services, parallel with seeking Stage Gate 1 endorsement.

Before ODE can begin planning any more procurement or begin contract discussions related to functionality, the project team needs to complete research/requirements and analysis with business operations and end users to document what currently encompasses the SSF software system. When the solution design has been completed, it will be clear what is needed and will then be presented to the Steering Committee for approval.

Legacy System & Data Conversion Planning /Activities

After the new SSF software system is validated, both the current and new SSF software systems will run in parallel for two years to validate the complete functionality of the new SSF software system. The data from the most immediate prior SY will be migrated to the new SSF system for purposes of calculation. The current SSF system will not be turned off, to allow the SSF system to validate against calculations and allow access to historical data as needed.

Risks and Challenges

Risks

Risk	Mitigation
Funding is not approved for this project to move forward.	ODE IT Governance Committee will review the project and if approved, then ODE internal resources will be redirected from other mission critical core systems and reallocated to prioritize the development of a new State School Fund Software System. This would put other ODE systems at risk and could jeopardize mission-critical programs such as data collections, and federal and state reporting (like Child Nutrition Program Web).
The current SSF software system fails.	To the extent possible, ODE IT staff will try to resolve issues with the current system. However, in case of current system total failure, the SSF modernization project team members may be required to assist in the immediate remediation efforts, which would negatively affect the timeline.
Defining the scope of the project without detailed understanding of the SSF software system.	Gather requirements from a perspective of 360 degrees to ensure business operations, end users, and technical team are included in the process and store the documents where everyone has access to them.
Loss of institutional knowledge due to retirement, attrition, etc.	Intensify requirements gathering workshops and sessions as soon as the Legislature approves the project. Hire a second business analyst.

Challenges & Constraints

Challenge/Constraint	Consequences or mitigations
The limited institutional knowledge of this system.	Reach out to current and past sources who have worked or operated the system to obtain any information they have, especially when new information is uncovered.
Complexity of the State School Fund calculation.	Rely on business operations and official rules to ensure all calculations are correct.
Availability of technical and business staff.	Work with supervisors and directors to keep them up to date with the project's progress and review and update staffing needs.
Additional legislated requirements of the SSF software system are introduced during the project timeline, delaying the project.	If there are new calculations or rules introduced during the project the priority is to update the current SSF software system based on the legislative implementation timeline. Then introduce the changes into the new SSF software system. This may cause a delay in delivering the new SSF software system.
Current permanent ODE resources do not have the capacity to develop a solution.	Additional staff, as outlined in the Project Staff section above, need to be hired.
Retaining sufficient knowledgeable staff for the project's duration due to turnover, difficulty hiring the required skills, etc.	Create and follow recruitment plan and succession plan. Project sponsors and steering committee to mitigate any potential staffing issues and ensure adequate staffing for the project's completion.
There are limited School Finance staff to work on the project and each has ongoing work that must be balanced.	School Finance staff have prioritized this project and a succession plan for the School Finance director has been initiated. Monitor and manage staffing on the business side.

Independent Quality Management Services (iQMS)

The agency has reached out to Statewide Quality Assurance staff and those staff have reviewed the project documentation available in PPM. While the agency has not yet been formally notified that iQMS will be required, this project meets the criteria for iQMS and the agency fully expects to engage a vendor as soon as possible following Stage Gate 1 endorsement. In that case, the agency will reach out to SWQA again, as well as DAS Procurement, to develop evaluation criteria for selecting an appropriate independent QA vendor through SWQA's approved procurement process.

Development Options

Over the course of several years ODE has gone through several reviews of the system both internally and externally. First, ODE internal information technology staff reviewed the software for potential critical failure points. Next, the School Finance unit staff identified six similar State Education Agencies (SEAs) and inquired about the status of their software model and its design. The results of this fact gathering effort with SEAs were mixed as some SEAs had internal developments while others could use external software as their funding formula were less complex. To further understand the landscape of potential commercial off the shelf solutions (COTS), ODE issued a request for information (RFI) in OregonBuys as a market scan for potential vendors; no vendors responded.

ODE also hired, through the competitive process, Info-Tech Consulting Services[1] to evaluate different development models that included "in-house," outsourced, and hybrid development frameworks. Info-Tech's final recommendation was for ODE to develop the new SSF software system in-house. Support for this recommendation was based on factors that included the following three key factors:

Risk
"In-house" was considered the lowest risk based on:

- Current institutional knowledge and accelerated learning curves,

- Improved flexibility based on an internal integrated team to build the system and provide long-term application support,

- Limiting any potential future contractual liability associated with an external service provider,

- The potential loss of productive work based on the effort to prepare and complete an external RFP (which could take 12-18 months to complete) and

- On-going vendor management efforts.

Change impact
Lowest ODE organizational effort to manage an internal team vs. managing an external vendor.

Investment
The Ten-Year Total Cost of Ownership (TCO) is considered slightly favorable compared to either a vendor-built and ODE-managed alternative or a vendor build and managed alternative.

Development Options Summarized

Consideration	Alternative 1: Built & Managed In-house"	Alternative 2: Built by Contractor & Managed In-house	Alternative 3: Built & Managed by Contractor
Build	• Existing team leads can accelerate progress and expertise in ODE systems and current tech, while new team members increase capacity	• Access to a larger talent pool who can utilize the latest technologies	• Ability to amortize the total investment over longer-duration contract terms • Access to a larger talent pool who can utilize the latest technologies
	• May require salary exception approvals	• Potential for substantial time lag (12-18 months) to contractually engage with a vendor • Requires significant ODE effort to develop RFP and complete knowledge transfer with vendor (incl. potential contractual risk) • Potential execution and organizational risks	• Potential for substantial time lag (12-18 months) to contractually engage with a vendor • Requires significant ODE effort to develop RFP and complete knowledge transfer with vendor (incl. potential contractual risk) • High cost and potential execution and organizational risks • Highest costs compared to the other alternatives
Support/ Manage	• Mid-range ongoing costs • Highest degree of flexibility to manage future enhancements, support/manage efforts, and service levels	• Knowledge capture process from vendor will require a steep ODE learning curve within the organization	• Some maintenance and operational support flexibility may be lost with a vendor • ODE investment of time/effort and knowledge capture process will require a steep learning curve from the outsourcer

Info-Tech and ODE also considered Commercial-Off-The-Shelf (COTS) software products, but none were found that could be installed and configured to replace the SSF software system without significant development effort.

In their report to the ODE, Info-Tech recommended replacing the existing SSF software system by using "in-house" resources for developing the new SSF software system, based on institutional knowledge of the current system and processes and in turn retaining the knowledge of the new system after the project closes. This also provides ODE with an opportunity to apply best practices in architecting and developing the system and resulting programming for the future. Building the SSF software system with

best practices will allow ODE to respond to changes in legislative mandates to the SSF software system calculations in a more efficient and timely manner.

Do Nothing (Status Quo)

Doing nothing is no longer an option for ODE, as the risk of system failure increases the longer the SSF software system continues to operate. Built around outdated, and unsupported software (MS Access), limited institutional knowledge, complexity of the system combined with ad hoc solutions (the use of spreadsheets) to support the SSF calculations will continue to elevate the risk of failure for the SSF software system.

When, not if, the SSF software system does fail, all payments to the 197 school districts and 19 ESDs will not occur on time, and subsequent payments will also be affected and require more time and additional resources to build any processes (using spreadsheets most likely) to replicate the complex calculations of the aging SSF software system and making payments to school districts and ESDs. Using spreadsheets also creates increased potential for human error resulting in the disbursement of incorrect payments.

The way the SSF software system was developed in the early 2000's using common Office productivity tools would not be considered as an option today due to the level of complexity of the SSF software system. Modernizing the SSF software system cannot be accomplished with the tools or practices of the 2000's to align with the ODE 2023-2027 IT Strategy. This modernization will focus on innovation, software development "Best Practices" and enterprise IT strategies to create a system that is reliable, easily maintainable and includes disaster recovery capabilities.

Consequences of Failure to Act

Not acting on the state of the SSF software system is not an option. If the SSF software system were to fail, it would put ODE's ability to calculate and distribute funding to school districts and ESDs throughout Oregon at risk. Outdated and unsupported technology will continue to degrade (MS Access), resulting in future disruptions and failures of the system.

ODE finance staff will continue to use manual processes that are time-consuming and introduce risk of errors. Additionally, substantial time will continue to be spent on error research and resolution due to lack of system transparency.

System technology (MS Access) will not be supported by vendors through upgrades and patches. This will increase the number of issues with technology and increase the need for ODE IT to resolve issues. The system's designer and original developer have long retired and therefore the current ODE IT staff are supporting a system that is not well documented. With thousands of SQL procedures pulling and pushing data from various data sources, it is challenging to make changes without causing additional issues. Investigating changes needed and consequences of making changes will continue to be time consuming. Finance staff will continue to access multiple applications (MS Excel, MS Access, SQL Server) and multiple proprietary in-house tools and applications to complete work, rather than using a unified user interface.

Recommendation

ODE endorses the recommendations found in Info-Tech's final report in replacing the SSF software system using "in house" resources. To decrease the chance of system failure prior to replacement, this project must move forward as soon as possible. Failure of the SSF software system is inevitable if the system is not re-designed and developed using modern software development principles and technologies, as well as incorporating tools developed by operations outside of the current SSF software system into a system that can be supported by ODE IT.

The in-house approach is recommended because of the lower risk of project failure, lower organizational change impact, and slightly favorable total cost of ownership when compared to other development approaches. In addition to lower risk for project failure, Info-Tech's review and examination of solutions implemented by other State Educational Agencies also support the in-house approach. This also provides flexibility for future needs.

A key goal for the new SSF software system will be to increase transparency in the funding process by making budget information the State already collects from districts accessible and easier to understand. This will achieve the Governor's desire to ensure district partners and the public have the same budget information the State does, strengthening transparency and improving customer service to Oregonians.

ODE estimates the SSF software system modernization project will take 4 years to deploy, starting from the hiring of the project manager and first business analyst in October 2023 and full implementation projected in September 2027. The proposed team includes a Project Manager, two Business Analysts, a

System Architect, six developers, a user experience designer, two testing and QA analysts, and a manager to take ongoing ownership of the SSF software system, with additional support of other IT and business staff. Following deployment, the agency expects to retain a staff of seven for operations and maintenance of the system at least through a two-year system stabilization period. The estimated cost of this project, including staff salaries including inflation and services and supplies, iQMS, and hardware and software from inception through five years of operations and maintenance, is approximately $13.8 million.