# **RECLANATION** *Managing Water in the West*

## Evaluation and Preliminary Testing of Project Management Software for use in Reclamation

Research and Development Office Science and Technology Program Final Report ST-2017-1619-DS





U.S. Department of the Interior Bureau of Reclamation Research and Development Office

#### **Mission Statements**

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The U.S. Department of the Interior protects America's natural resources and heritage, honors our cultures and tribal communities, and supplies the energy to power our future.

#### **Bureau of Reclamation**

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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**14. ABSTRACT** *(Maximum 200 words)* Project management is important to Reclamation because it increases quality and timeliness, and reduces project costs. Project management software can further produce greater efficiencies through automating and streamlining project management processes. Members of Reclamation's Project Management Advisory Team (PMAT) prepared a list of requirements to evaluate project and portfolio management software. A sub-team of PMAT members incorporated the requirements on a scorecard, which was used to evaluate 13 project management software options. The PMAT recommends that Project Management tool, compatible with almost all PM software (in-house and commercial), and Reclamation employees already have access to MS Project. For Project Managers desiring additional project management capabilities, such as financial reporting and tracking capabilities, project management plan development (in compliance with Reclamation laws, manuals, and the framework) and/or portfolio management capabilities, the PMAT also recommends use of software customized or developed in-house. For project managers desiring advanced and complex project management features, the PMAT recommends purchasing individual licenses for commercial software on a case-by-case basis for individuals, offices, or a region.

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#### **BUREAU OF RECLAMATION**

Research and Development Office Science and Technology Program

#### Final Report ST-2017-1619-DS

#### Evaluation and Preliminary Testing of Project Management Software for use in Reclamation

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Checked and Peer Reviewed by: Project Management Advisory Team

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## Acronyms and Abbreviations

Acronym or Abbreviation	Description								
AUC	Assets Under Construction								
BIC	Bureau Indirect Cost								
BIO	Business Integration Office								
COR	Contracting Officer's Representative								
COTS	Commercial Off-the-Shelf								
CPI	Cost Performance Index								
D&S	Directives and Standards								
ESO	Engineering Services Office								
ETAS	Electronic Time and Attendance System								
EV	Earned Value								
FBMS	Financial and Business Management System								
FY	Fiscal Year								
PCO	Program Coordination Office								
РМ	Project Management								
PMAT	Project Management Advisory Team								
PMP	Project Management Plan								
PMT	Project Management Team								
PR	Purchase Request								
PV	Planned Value								
RADIMS	Research and Development Information Management System								
RMT	Reclamation Management Team								
S&T	Science and Technology								
SPI	Schedule Performance Index								
WBS	Work Breakdown Structure								

## **Executive Summary**

Reclamation's Deputy Commissioner would like to raise project management awareness within Reclamation in order to maximize efficient use of appropriated funds. Project management software can further produce greater efficiencies through automating and streamlining project management processes.

Members of Reclamation's Project Management Advisory Team (PMAT) (consisting of one representative from each region/directorate) prepared a list of requirements to evaluate project and portfolio management software. A sub-team of PMAT members was formed to incorporate the requirements on a scorecard, recommend software that was approved by security protocols, and evaluate 13 software options, which were demonstrated by Reclamation employees and private consultants.

The evaluated software was divided into three categories:

- 1. Basic Project Management Tools: WBS Schedule Pro and MS Project
- 2. <u>Currently Available PM Software Developed In-House</u>: WMS, ESAM, FBMS PM Module, ESO Database, and a PM Excel Tool
- 3. <u>PM Commercial Software:</u> Daptiv, MS Project Server, BrightWork, BOE/EV Max, and Primavera

This report describes the high level pros and cons of each software, the team's assessment, and approximate pricing information. The PMAT recommends that Project Managers in Reclamation become familiar with MS Project software, as it is readily available to Reclamation employees.

For Project Managers desiring additional project management capabilities, such as project management financial reporting and tracking capabilities, PMP development (in compliance with Reclamation laws, manuals, and the framework) and/or portfolio management and enterprise capabilities, the PMAT recommends use of software developed in-house. The in-house software meets a high number of Reclamation's requirements and customization is affordable in comparison to purchasing and configuring new software.

Reclamation's project manager maturity is currently at a level that would not be able to fully utilize the advanced features of the commercial software, thus the cost would likely outweigh the benefit of purchasing the software Reclamation-wide. However, it is recommended to reassess Reclamation project management software needs in 2 to 3 years.

Executive Summary	ix
Purpose	13
Background	13
Software	14
ESO Database (SQL)	14
WBS Schedule Pro	15
ESAM	15
BOE/EV Max	16
BrightWork	17
WMS (Workload Management System)	18
FBMS PM Module	19
Excel PM Tool	20
MS Project	21
MS Project Server	22
RADIMS (Research and Development Information Management System)	23
Daptiv	23
Primavera	24
Findings	25
Recommendations	25

#### **Table of Contents**

#### Appendices

Appendix A: Evaluation of Requirements for PMAT S&T Project Management Software Evaluation and Testing

Appendix B: Summary of PM Software Capabilities and Costs

Appendix C: Screenshots of PM Software

#### **List of Tables**

Table 1. Approximate cost of BOE/EV Max	16
Table 2. Costs to install and maintain on-site BrightWork Software for up to 50 users	17
Table 3. Cost for MS Project Server	22

Table 4. Cost for Primavera

## Purpose

Project management is important to Reclamation because it increases quality and timeliness, and reduces project costs. Project management software can streamline the project management processes to produce greater efficiencies; therefore, the PMAT is searching for project management software that meet Reclamation's project management requirements. Currently, various PM software packages in use in Reclamation that either were developed in-house or through a vendor using requirements created by Reclamation employees or are software purchased from the market. The purpose of this exercise was to conduct a preliminary evaluation of the software that are currently in use in Reclamation and assess their compliance with Reclamation's Project Management requirements. The evaluation also included a preliminary assessment of other factors like ease of use, training required, approximate cost, other technological requirements, etc. Some established complex PM software that are available in the market were also evaluated in this exercise for possible future use in Reclamation.

## Background

In FY15, the Engineering Services Office (ESO) within Reclamation's Lower Colorado Region received Science and Technology (S&T) funding to perform initial market research of available project management software solutions to streamline the current project tracking and portfolio management processes within ESO. In FY16 and FY17, ESO expanded their search to include a sampling of software recommended by members of Reclamation's Project Management Advisory Team (PMAT). The result of this joint effort is a more comprehensive market research analysis, evaluation, and recommendation to fulfill Reclamation's project management needs, as outlined in Reclamation's Project Management Framework.

Members of PMAT worked collaboratively and prepared a list of requirements to evaluate each software, and a sub-team of PMAT members was formed in FY16 to incorporate the requirements on a scorecard. In FY17, the sub-team evaluated the 13 software options demonstrated by Reclamation employees and private consultants. Each presenter demonstrated how to enter a test project into the software while displaying features of the software that meet requirements and preferences determined by the PMAT.

One representative from each directorate was invited to take part in the evaluation process to create a subteam. Each member on the PMAT sub-team was provided a scorecard to score the demonstrated project management software against the requirement. If a region/directorate did not participate in a demonstration, they left the score card blank. A score of 0 meant that a requirement was not met. A score of 1 meant that a requirement was met. A score of 2 or 3 meant that a requirement was more than met and had extra desirable features. At the bottom of each score card was a rating of 1 through 10 for overall impression.

The scorecards were averaged on a summary scorecard (see Appendix A). The pros and cons of each demonstrated software are provided below.

## Software

The following software are listed in the order they were presented throughout the report and appendices.

## ESO Database (SQL)

Presenter: Amber Cunningham, Lower Colorado Region, Reclamation

Website: http://intra.lc.usbr.gov/g6000/ProjectTracking/Login.aspx?Logout=true

Source: Developed in-house with assistance of a contractor

Pros: The ESO Database is simple, transparent, and meets most of Reclamation's project management (PM) requirements, such portfolio management functions, schedule and budget development, and service agreement creation. Agreement template customization is also possible with this software. It is the only system evaluated that is linked to FBMS financials. The software provides clear version tracking, documents can be attached, closed projects can be archived, and status/workload reports can be generated for any office in the Lower Colorado Region (or other regions). This software was also developed with the capability of supporting all users in Reclamation, with minor access modifications made by IT.

Cons: The ESO Database does not generate Gantt charts, email notifications, or portfolio reports; however, Reclamation has the source code, so this customization could be done. Additionally, a few modifications could be made to generate cost estimates quicker.

Assessment: Although there are a few drawbacks with this software, it is one of few that meets the majority of project management requirements within Reclamation. Further, it is inexpensive and easy to modify the software to meet all the requirements. Reclamation owns the source code, the system can support all Regions for free, and this software is 1 of 3 software of the 13 evaluated that is linked to FBMS financials.

During the process of contracting out the work to build this software, ESO learned that IT security protocols make it essentially impossible to link commercial software to Reclamation's financial system, which is why we requested the source code and had the programming done internally. Typically, commercial software companies will not release their code, which is problematic in linking the system to our financials. Further, Reclamation cannot provide FBMS access to a commercial software company. Therefore, linking FBMS financials to commercial software is essentially not possible. Since an important feature of any PM software is financial reporting capabilities, in-house software such as this are highly advantageous in this regard.

Approximate Price: The cost was \$70,000 to develop this software, and in-house modifications, such as to FBMS, cost an additional \$40,000. Reclamation currently owns this software, so it is free to all Reclamation users. Additional in-house modifications may cost \$40,000, based on prior experience. If Reclamation were to recreate this software or something similar, much of the code could be reused, so it is estimated the cost could be less than \$70,000.

#### **WBS Schedule Pro**

Presenter: Paul Drury, Pacific Northwest Region, Reclamation

Website: http://criticaltools.com/

Source: Commercial off-the-shelf (COTS) Scheduling Tool

Pros: WBS Schedule Pro is a simple-to-use graphical interface for planning and displaying a work breakdown structure. It includes easy-to-manipulate project phases, activities, tasks, and subtasks during team brainstorming sessions. It is customizable for displaying the work in many formats, including task lists, tree-style diagrams, network diagrams, and Gantt charts. It integrates seamlessly with Microsoft Project for more detailed planning. This software allows for the input of duration, start date, end date, percent complete, and cost for each subtask. Project information rolls up to the summary task level automatically. This software also provides the ability to include dependencies between tasks and display the critical path in a network diagram

Cons: This software does not create a resource-loaded schedule or budget, and it does not manage approvals or project documents.

Assessment: This is primarily a planning tool used by the Pacific Northwest Region.

Approximate Price: \$175 per user for 100 or more licenses. If 1,000 users purchased this software, the cost would be \$175,000 plus acquisitions costs of perhaps \$5,000, for a total estimated cost of \$180,000

#### ESAM

Presenter and POC: Jacque Wright

Website: https://esam.usbr.gov/esam/

Source: Developed in-house

Pros:

- 1. Creates service agreements
- 2. Allows WBS validation
- 3. Assists in simple schedule and budget development
- 4. Allows for tiered rates
- 5. Has existing financial extract process from FBMS (for billable rate processing)
- 6. Generates labor reports, project cost reports, and portfolio reports
- 7. Can attach project documents
- 8. Provides a dashboard
- 9. Tracks agreement changes
- 10. Can close project and WBS to office charging
- 11. Generates completion surveys and tracks responses
- 12. Backed up on the server (not the cloud)

Cons: This software does not create a detailed schedule, Gantt chart, or budget, and approvals cannot be generated in the system.

Assessment: This is a great in-house tool for basic projects, especially those with tiered rates. It is easy for Project Managers to look up their costs. Financials are linked directly from FBMS; however, labor corrections that are not processed in ESAM will not be reflected in the financials. Programmers are continually working in-house to improve this software.

Approximate Price: The cost is \$152,700 annually distributed to all Reclamation users through Reclamation's Bureau Indirect Cost (BIC) rate. This software could support more than 1,000 users across Reclamation, and customization to meet most of Reclamation's requirements is estimated to be about \$30,000; therefore, the total estimated cost across Reclamation is \$182,700 annually.

## **BOE/EV Max**

POC: Amber Cunningham, Lower Colorado Region, Reclamation

Website: https://projstream.com/boemax

Source: Commercial off-the-shelf (COTS) Software

Pros: With this software, the collaboration and approval processes were excellent, and a nice feature is that the schedule exports to MS Project.

Cons:

- 1. Cost estimate divided
- 2. Hard to figure out where you are in system
- 3. Doesn't include dashboards

Approximate Price: See Table 1 below.

#### Table 1. Approximate cost of BOE/EV Max

ltem	Unit Cost	Number of Units	Total Cost			
BOEMax Administrator License	\$4,000	21 <sup>1</sup>	\$84,000			
BOEMax Estimator License	\$2,500	21 <sup>1</sup>	\$52,500			
COR and Acquisition labor cost	\$5,000	1	\$5,000			
Total initial cost			\$141,500			
Annual maintenance <sup>2</sup>	\$136,500	25%	\$34,125			
Annual Maintenance and License Renewal 5-year cost	\$34,125	5	\$170,625			

<sup>1</sup> Assumes there are three Administrative and Estimator licenses for seven regions/directorates)

<sup>2</sup> Annual maintenance is equal to 25 percent of the base license cost. In this case, that would be  $136,500 \times 25$  percent = 34,125.

Assessment: This software appeared to be an advanced project and portfolio management tool with lots of great features. The overall organization of the software could be improved.

#### **BrightWork**

POC: Mike Ward, Upper Colorado Region, Reclamation

Website: <u>https://www.brightwork.com/</u>

Source: COTS

#### Pros:

- 1. Built on a SharePoint platform
- 2. Highly customizable by the end user
- 3. Provides standard and customizable dashboards
- 4. Robust reporting capabilities
- 5. User can save project templates for use on future similar projects
- 6. Can build simple to complex project schedules internally
- 7. Can share with MS Project schedules via upload/download synchronization
- 8. Provides cradle-to-grave portfolio management capabilities with extensive filtering and sorting
- 9. Provides budget development and reports
- 10. Single entry of data in one system (except financial information w/o and interface)
- 11. Installed on a local server so it is accessible via VPN
- 12. Updates are accomplished via a download/install link provided by the vendor as updates occur
- 13. Online training is available from the vendor
- 14. Has a cloud-based installation option

Cons: Onsite installation requires Reclamation staff installation and troubleshooting. Entry of finance data is manual unless a custom interface is built, which could become expensive. However, the vendor has experience developing interfaces with SAP installations.

Approximate Price: Table 2 shows onsite installation pricing for up to 50 named users. The one-time licensing fee decreases further as the user count increases, as does the annual support and maintenance.

Table 2. Costs to install and maintain on-site BrightWork Software for up to 50 users

Fee	20 Named Users	50 Named Users
Named user BrightWork licenses - one-time fee	\$5,400	\$10,000
Support and maintenance - annual fee	\$1,080	\$2,000
Deployment Services (36 hours) - one-time fee	\$7,875	\$7,875
Total cost Year 1	\$14,355	\$19,875
Total cost Year 2 (Support and Maintenance Fee)	\$1,080	\$2,000

Assessment: This tool meets a large range of PM needs and would be an excellent tool for portfolio management, as well as support management of the full range of projects from basic to complex projects requiring advance project management capabilities. This software is comparable to Daptiv at a better

price long-term.

#### WMS (Workload Management System)

Presenter and POC: Michael Craggs, Mid-Pacific Region, Reclamation

Website: http://wms.mp.usbr.gov/Default.aspx

Source: Developed in-house

Pros:

- 1. Custom-built to meet many of Reclamation's requirements in accordance with the PM Framework
- 2. Generates a Project Charter and Project Management Plan (PMP) for basic projects.
- 3. Additional project documents include:
  - a. Project Manager Checklist
  - b. Acquisitions Closeout Checklist
  - c. Project Closeout
  - d. Project Team Survey
  - e. Project Manager Supervisor Survey
- 4. Captures project risks
- 5. Can develop a project budget
- 6. Supports email approvals and notifications
- 7. Can archive project data
- 8. Has lessons-learned abilities
- 9. Service Agreements between Service Providers and clients (minus TSC) can be created in WMS for most, if not all, types of agreements (e.g., with the Design and Construction branch for design services). Service Agreements can be generated for projects and non-project activities. Additionally, Service Agreements with agencies outside of the Region (e.g., TSC are uploaded and attached in WMS.
- 10. Generates numerous canned reports that can be customized
- 11. Ability to create user-specific reports
- 12. Modifications and releases are timely (generally 3 to 4 months), but can be done faster if required
- 13. Currently, the only tool available in Reclamation for acquisitions management and tracking
  - a. Allows tracking of purchase requests (PR) from planning to award
  - b. Can track the status of a PR at any time during the acquisitions process
- 14. FBMS PR data is downloaded daily into WMS
- 15. Active WBSs can be searched and displayed in WMS

- 16. Was developed with the ability to incorporate other Regions
- 17. In-house programmer is available for maintenance and modifications
- 18. Can be accessed via government iPhone or iPad
- 19. Access is role-driven. such as by Project Manager or Supervisor

Cons: Scheduling and cost reporting capabilities are not available in this software, but are currently being developed. Code is being used from the ESO Database to assist in the development of project cost-reporting capabilities.

Assessment: Reclamation is currently working to improve features regarding schedules, budget development, Service Agreements, risk, downloading of FBMS financials, earned value, reporting, and streamlining project menus. Additionally, collaborative efforts to use code in the ESO Database results in a software that meets many of Reclamation PM requirements. If this system were adopted, Reclamation-wide, additional programmers may be required to make requested modifications at the regional level.

Approximate Price: \$100,000 annually for a programmer's salary and benefits per region.

#### **FBMS PM Module**

POC: Ed Abreo, Denver IRO, Reclamation

Share Point Site: Reclamation's FBMS Operations SharePoint

Source: COTS

Pros:

- 1. Project planning and scheduling (including time constraints) functionality are available
- 2. Gantt chart and project hierarchy structure are available
- 3. Planned and actual costs can be captured in the same system and display real-time variance
- 4. Can run EVM reports in the system
- 5. Transaction access with security control (using authorizations)
- 6. Can manage the project approvals/status using System and/or User Statuses
- 7. Can maintain, by data entry or upload, project-related documentation and/or information at the various component levels (Project/WBS/Network/Activity)
- 8. Real-time integrated system: Budget, Accounting, Acquisition, Property and Reporting functionality, all in one system
- 9. Can track construction projects, including AUC project from start to end
- 10. Offers FBMS Help Desk

Cons:

- 1. FBMS uses terms that often conflict with PM terminology
- 2. All users must take the mandatory FBMS training in order to access the system
- 3. Extensive training is required to use FMBS and the FBMS PM Module.

- 4. Because FBMS is so complex and large, it requires extensive initial data entry for multiple components using various screens and tabs in order to input general information about a project.
- 5. Due to the complexity of FBMS, it is anticipated that Project Managers will not be able to navigate in this system, and each office would need to train an expert to assist the project managers.
- 6. FBMS financials have to be manually entered into the PM Module, which requires extensive time.
- 7. Not the best day-to-day planning tool for Project Managers, although FBMS is a good accounting and budget tool.
- 8. This is not a project planning tool and does not integrate seamlessly with commonly used project planning applications like MS Project or Primavera.
- 9. Project baseline data must be manually input by a limited number of individuals that have the necessary permissions.

Assessment: FBMS (SAP) provides an integrated project management module linking budget, accounting, and property and reporting functionality into one system. The FBMS (SAP) terminology is not consistent with PM terminology. Extensive training is required for access to the FBMS Project Module.

Approximate Price: The Department of Interior FBMS bill is based on the percentage of a bureau's user counts compared to the total number of users. The DOI FBMS costs include infrastructure hosting and support for the FBMS, DOI's integrated business management system of record, licensing; system optimization activities; applications management, master data management, and the FBMS DOI Help Desk. FBMS costs charged to bureaus are based on user account numbers, averaged over 3 years, and updated once every 3 years to level out the FBMS bill. FY 2019 FBMS costs are estimated at \$1.4 million for 1,176 users. Additional FBMS project management users would not result in a significant increase to FBMS costs billed to Reclamation.

## **Excel PM Tool**

Presenter and POC: Amber Cunningham, Lower Colorado Region, Reclamation

Website: N/A (System built in Excel and MS Project)

Source: Developed in-house

Pros:

- 1. Simple, transparent forms developed in Excel that meet most of Reclamation's PM preferences, including schedule and budget development.
- 2. Exports schedule to an MS Project template that generates a Gantt chart.
- 3. Macros created to streamline PMP creation.
- 4. PMP meets requirements of AUC and PM Directives and Standards (D&S).
- 5. Easy-to-modify templates since they are built in Excel.
- 6. Allows for a quick FBMS download of financials (Reclamation-wide, Region-wide, or for a

specific office).

7. Generates status reports with minimal work from the PM, does automatic calculations of earned value, planned value, cost performance index, and schedule performance index, and generates portfolio management reports that can be searched or filtered by any project classification.

Cons: There are a few manual data entry components that make this option less desirable than software that automatically updates information. For example:

- 1. Version tracking is as good as the person's ability to name and save the agreements and Change Orders, and Change Orders need to be manually added to the Status Report.
- 2. Agreements and Change Orders can be easily attached to an email; however, automatic email notifications are not possible unless Reclamation goes back to Outlook email. (To resolve this constraint, it appears email notifications are possible by storing the PM Tool in SharePoint.)
- 3. Project documents also need to be saved in a determined location.
- 4. Projects are archived by changing folder permissions to read-only, which is another manual process (suggest saving all files on a shared drive so they are backed up daily).
- 5. Does not generate workload reports (there is a separate workload tool that used for this).

Assessment: Although this tool requires more data entry than some other options, there are a lot of cost savings. It is free, very easy to use and/or modify, no obstacles with IT security protocols, and feature modifications can be provided by the LC Region.

Approximate Price: Customization cost to meet office specific needs may be \$20,000 to \$30,000.

## **MS Project**

Presenter and POC: Jose Lee, Lower Colorado Region, Reclamation

Website: https://www.microsoft.com/en-us/store/d/project-professional-2016/cfq7ttc0k5cm

Source: COTS

Pros:

- 1. Great scheduling tool.
- 2. Creates Gantt charts, critical paths, and tracks percent complete.
- 3. Tracks schedule changes against a baseline.
- 4. Already approved by IT for use in Reclamation and is currently being used for scheduling several projects across Reclamation
- 5. Integrates with WBS Schedule Pro, MS Project Server, Daptiv, Bright Work and the PM Tool.
- 6. Training is readily available.

Cons: This software cannot create Service Agreements or PMPs and cannot link to FBMS or ETAS. Reports are limited and aren't useful without financial information, and the user cannot attach documents.

Assessment: Overall, MS Project is commonly used by the industry and is standard software used by the Department of the Interior. Although it does not meet Portfolio Management needs as a stand-alone tool,

it is compatible with a large percent of advance project management software, and it is a great starter tool for learning the first steps of Project Management.

Approximate Price: Reclamation already has a contract for MS Project; therefore, it is already available to all users. There is also a Pro version that some users have on their desktop at an additional cost.

#### **MS Project Server**

POC: Amber Cunningham, Lower Colorado Region, Reclamation

Website: <u>https://products.office.com/en-us/project/compare-microsoft-project-management-software?tab=tabs-1</u>

Source: COTS

Pros:

- 1. Great scheduling tool.
- 2. Creates Gantt charts.
- 3. Integrates with MS Project.
- 4. Has a lot of report options.
- 5. Can create agreements with email notifications.
- 6. Can attach documents.
- 7. Generates portfolio reports.

Cons: Cost and acquiring approvals for this cloud-based tool may be difficult. There is an older version available that is not on the cloud, but it has a lot of glitches and is not recommended by the company.

Assessment: The cloud version of MS Project Server is a great tool for Project and Portfolio Management.

Approximate Price: See Table 3 below.

#### Table 3. Cost for MS Project Server

Item	Unit Cost	Number of Units	Total Cost			
Monthly cost	\$55	1,000	\$55,000			
COR and Acquisition labor cost	\$5,000	1	\$5,000			
Total initial cost (first year)			\$660,000			

## **RADIMS (Research and Development Information Management System)**

Presenter and POC: John Whitler, Denver Research and Development, Reclamation

Source: Developed in-house

Assessment: Great tool for submitting proposals, but not the best tool for Project Management as a whole. Therefore, this software was not evaluated.

#### Daptiv

POC: Mike Ward, Upper Colorado Region, Reclamation

Website: https://www.changepoint.com/products/daptiv/

Source: COTS

Pros:

- 1. Allows cradle-to-grave project and portfolio management with extensive filtering and sorting
- 2. Highly customizable by the end user
- 3. Provides standard and customizable dashboards
- 4. User can save project templates for use on future similar projects
- 5. Can share with MS Project schedules via upload/download synchronization
- 6. Would accommodate all sizes of projects
- 7. Robust dashboards and reports
- 8. Single entry of data in one system (except financial information w/o and interface)

Cons: This cloud-based system would be needed to get timely upgrades. (Currently the Department and Reclamation have not approved cloud-based systems.). The product is targeted toward cloud-based use, so onsite installation is provided at considerable additional expense. Upgrades lag and would require installation and troubleshooting by Reclamation staff. Entry of finance data is manual unless a custom interface is built, which could become expensive.

Approximate Price: Daptiv PPM is priced at a rate of \$50 per named user per month, for a total of \$600 per user per year. Daptiv PPM can also be integrated with either Daptiv Report Builder or Daptiv Advanced Report Builder. Daptiv Report Builder comes at an additional price of \$20 per user per month, while Daptiv Advanced Report Builder comes at an additional price of \$50 per user per month.

Assessment: Overall, this software can meet most project management needs. An onsite installation is more expensive than some other options, and a cloud-based application would require a cost-benefit analysis and approval.

#### Primavera

POC: Amber Cunningham, Lower Colorado Region, Reclamation

Website: https://www.oracle.com/applications/primavera/solutions/products.html

Source: COTS

Pros:

- 1. Great scheduling tool
- 2. Great workload planning tool
- 3. Allows users to customize forms, such as a Charter or PMP
- 4. Allows users to send email notifications to sign a Charter or PMP
- 5. Upon opening an email, a signatory can sign by clicking *Approve* in the email
- 6. Tracks versions of agreements and archives them in organized folders in the system
- 7. Changes can also be approved via the email notification and approval process
- 8. Project documents can be uploaded and folder permissions can be set by user
- 9. Can easily download the entire project folder and archive it elsewhere, if desired
- 10. Surveys can be created and sent with the customizable forms and notification options
- 11. Can create custom complex reports or export project information to Excel
- 12. Provides a really good overview of all projects or portfolios
- 13. Can be installed on Reclamation's server.

Cons: Cost financials are tied to timesheets; therefore, a connection to ETAS would need to be programmed.

Assessment: Primavera is a great Project and Portfolio Management tool for Reclamation. The cloud version is close to being FedRamp approved, so Reclamation employees would be authorized to purchase it as well.

Approximate Price: See Table 4 below.

#### Table 4. Cost for Primavera

Item	Unit Cost	Number of Units	Total Cost		
User license	\$2,750	1,000	\$2,750,000		
COR and Acquisition labor cost	\$5,000	1	\$5,000		
Total initial cost (first year)			\$2,755,000		
Annual license renewal cost	\$605	1,000	\$605,000		
5-year license renewal cost	\$605,000	5	\$3,025,000		

## Findings

In the above evaluation, the high-level pros and cons of each software, the team's assessment, and pricing information is provided. The evaluated software was divided into three categories:

(1) Basic Project Management Tools: MS Project and WBS Schedule Pro

(2) Currently Available Software Developed In-House: WMS, ESAM, FBMS PM Module, ESO Database, PM Excel Tool

(3) Commercial Software: Daptiv, MS Project Server, BrightWork, BOE/EV Max, and Primavera

WBS Schedule Pro is an easy-to-use scheduling tool. MS Project also offers several project management features. Additional project management features and requirements are available in in-house software. The internal tools are ranked, from the least complex to the most complex: PM Excel Tool, ESAM, ESO Database, WMS, and FBMS. The five commercial software similarly meet the majority of Reclamation's requirements, including portfolio management (can track all projects on a summary page), but these commercial software also go well beyond Reclamation's requirements, with desirable features and options to assist Project Managers. The individual capabilities of each requirement are provided in the score cards.

The participating representatives from each Region/Directorate filled out a detailed scorecard to evaluate how well each software satisfied each PM requirement. The scores from each region/directorate were averaged in Appendix A. Although some software rank higher than others, most of the software can be customized. Therefore, the cost for customization should be considered, as well as other factors such as appearance or organization of the software (see Appendix C for screenshots of each software).

To save time and money, software can also be mixed and matched to meet a greater number of Reclamation's PM requirements. For example, Software A may meet a lot of requirements but lack schedule creation, which Software B provides. Therefore Software A could be linked to Software B, for example, to meet the desired requirements of a particular office. Software can be matched to eliminate weaknesses and maximize strengths.

## Recommendations

Regarding the basic project management software, the PMAT recommends that Project Managers in Reclamation become familiar with MS Project software, as it is a commonly used scheduling tool, is compatible with almost all available PM software, and Reclamation employees already have licenses for MS Project.

For Project Managers desiring additional project management capabilities, such as financial reporting and tracking capabilities, PMP development (in compliance with Reclamation laws, manuals, and the framework) and/or portfolio management capabilities, the PMAT recommends the use of software developed in-house. The software developed in-house include: WMS, ESAM, FBMS PM Module, ESO Database, and a PM Excel Tool. The in-house software options meet many of Reclamation's requirements, are free or low-cost, customization for an office is affordable, and training can be provided by Reclamation employees for a price that is expected to be much lower than hiring outside vendors.

Regarding the commercially available software, the team found several advanced project management

software options: Daptiv, MS Project Server, BrightWork, BOE/EV Max, and Primavera. The team felt that these software are extremely efficient, and so advanced that they require extensive training to use. In addition to training, extensive Project Management skills are also required to use these systems to their full capability. Considering that the majority of Reclamation project managers have yet to receive formal project management training or do not have extensive project management backgrounds, the PMAT feels that Reclamation as a whole is not ready to migrate into any of the above-mentioned commercial software as a bureau. However individual Project Managers desiring to purchase commercial software (on a case-by-case basis) are encouraged to go through their manager and IRM. If the entire purchase exceeds \$3,500 (the micro-purchase threshold), the purchase must be made through the servicing acquisition office and may require competition. Project managers will also have to submit a request through the IRO IT Spend Plan Process for approval. The IT Spend Plan Site can be located here: https://teamssp.bor.doi.net/itspending/itthreshold/SitePages/Home.aspx

A bureau-wide migration will involve an expenditure that will likely include the cost of the software, the required license fees, and maintenance fees. Additionally anticipated costs for training are estimated to be more than in-house software, and all COTS would incur costs of programming and/or downloading financials from FBMS. The cost of each commercial software is estimated in Appendix B.

The PMAT also recommends that Reclamation reassess its project management capabilities after a period of 2 to 3 years to evaluate the readiness to adopt a bureau-wide project management software.

## Appendix A – Evaluation of Requirements for PMAT S&T Project Management Software Evaluation and Testing

#### Table A- 1. Evaluation of Requirements for PMAT S&T Project Management Software Evaluation and Testing

Eval	Evaluation Criteria: 0 - did not meet requirement, 1 - met requirement, 2 - met the requirement and was easy to use, 3 - met the requirement, is easy to use, and is extremely efficient & visually appealing.														
			1st Webinar: ESO Database (SQL)*	2nd Webinar: WBS Schedule Pro	3rd Webinar: ESAM*	4th Webinar: BOE/EV Max	5th Webinar: BrightWork	6th Webinar: WMS	7th Webinar: FBMS PM Module	8th Webinar: Excel PM Tool	9th Webinar: MS Project	10th Webinar: MS Project Server	11th Webinar: RADIMS	11th Webinar: Daptiv	12th Webinar: Primavera
CHARACTERISTIC/ FUNCTION	EXPLANATION OF REQUIREMENT	TEST PLAN	SCORE (0- 3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)
How to get Access to Software		Demonstrate how one gets into the system	2.2	1.8	2.0	1.5	1.3	2.8	1.5	1.8	2.2	2.3		1.4	1.5
How to get Started		Demonstrate how to start a new project	2.0	1.8	2.4	1.5	1.7	2.5	1.0	2.2	2.2	2.3		1.6	1.8
PROJECT INFORMATION	General identifying project information (Directorate, Office, Name, PM, Project Category, etc.)														
Project Number		Enter a Project Number is applicable	1.8	0.8	1.2	1.5	1.3	2.2	1.6	1.2	1.8	1.5		1.2	1.0
Project name		Enter "Parker Dam Barriers"	1.3	1.3	2.0	1.5	1.8	2.2	1.6	1.2	2.2	2.8		1.2	1.5
Project Category	PM Framework Project Category (Basic, Standard, Complex, Complex w/OMB-300)	Enter "Standard"	0.8	0.8	1.7	1.5	1.5	2.6	1.2	1.2	1.0	1.3		1.0	1.0
Assists in selecting project category	Includes decision tree to identify Basic, Standard, Complex, Complex w/OMB-300 [do we want to include a category for Capital Improvement Project]	Show if software can meet this requirement	0.6	0.0	0.2	0.0	0.7	2.6	1.2	1.2	0.0	0.3		0.6	0.3
Project Manager		Insert "Kevin Margetts"	1.2	1.0	1.7	1.5	1.8	2.2	1.2	1.2	2.0	2.3		1.2	1.5
Project Engineer		Insert "Kevin Margetts"	1.0	0.4	0.8	1.5	1.3	2.2	1.2	1.2	2.0	2.3		1.2	1.0
Project Manager Office and Group		Insert "ESO, RR03063000"	0.8	0.8	2.0	1.5	1.3	2.3	1.0	1.2	1.8	2.0		1.0	1.3
Financial Specialist		Insert "Megan Stemmer"	0.4	0.4	1.0	1.5	1.3	2.2	1.2	1.2	1.8	1.8		1.0	1.0
Directorate/Sponsor		Enter "Len Schilling"	0.4	0.2	0.8	1.5	1.3	2.4	1.2	1.2	1.8	1.8		1.0	1.0
Client		Enter "John Steffen"	1.4	0.8	1.7	1.5	1.3	1.8	1.2	1.2	1.8	1.8		1.0	1.0
Client Region and Office		Enter "LCR, Parker Dam"	0.8	0.6	1.5	1.5	1.3	1.8	1.0	1.2	1.8	1.8		1.0	1.0
Project/Activity/Facility or Program	e.g., Central Valley Project, Shasta Division, Trinity Power Plant	Enter "Lower Colorado Dams Project, Parker Dam Division, Parker Dam"	1.3	0.2	0.8	1.5	1.5	2.4	1.2	1.2	1.8	1.8		1.0	1.0
Initiation Date	Date created in system	Enter "9/18/16"	1.2	0.8	1.8	1.5	2.0	2.4	1.2	1.2	2.0	2.5		1.2	2.0
Completion Date	Date that corresponds to the end of the last task.	Enter "10/31/16" or Demonstrate if the completion date is autogenerated from the schedule	1.4	0.8	1.8	1.5	2.0	2.2	1.2	1.2	2.0	2.5		1.2	2.0
PROJECT SCHEDULE															
Detailed Project Schedule			0.8	1.8	1.3	1.0	2.8	0.6	1.2	1.6	2.8	2.8		2.0	2.5
Supports subtask start dates		Enter Milestones, Tasks, start/end	0.2	1.8	0.8	1.5	2.0	0.8	1.0	1.2	2.8	2.5		1.6	2.3
Supports subtask deadlines		dates, predecessors/successors,	0.8	1.8	0.6	1.5	2.0	0.8	1.2	1.2	2.8	2.5		1.6	2.3
Supports multiple predecessors, successors		dependancies, lead/lag and Resources from "Cost Estimate for Testing"	1.8	1.4	0.8	0.0	2.0	0.2	0.8	0.6	2.8	2.5		1.8	2.3
Supports lead and lag (slack/float)			1.4	1.4	0.6	0.0	2.2	0.2	1.2	0.6	2.8	2.3		1.6	2.3

Eval	uation Criteria: 0 - did not meet req	uirement, 1 - met requirement, 2 - met t	he requirem	ent and wa	s easy to u	se, 3 - met 1	the requireme	ent, is easy	to use, and	l is extreme	ly efficient	& visually a	ppealing.		
			1st Webinar: ESO Database (SQL)*	2nd Webinar: WBS Schedule Pro	3rd Webinar: ESAM*	4th Webinar: BOE/EV Max	5th Webinar: BrightWork	6th Webinar: WMS	7th Webinar: FBMS PM Module	8th Webinar: Excel PM Tool	9th Webinar: MS Project	10th Webinar: MS Project Server	11th Webinar: RADIMS	11th Webinar: Daptiv	12th Webinar: Primavera
CHARACTERISTIC/ FUNCTION	EXPLANATION OF REQUIREMENT	TEST PLAN	SCORE (0- 3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)
Ability to download template project or existing project		Show if software can meet this requirement	0.8	1.4	0.8	1.0	1.8	0.2	0.6	1.0	2.8	2.5		1.8	2.8
Gantt chart and activity network diagram display	Can produce Gant charts and activity network diagrams	Show if software can meet this requirement	0.0	1.2	0.2	0.0	2.3	0.2	1.2	0.8	2.8	3.0		1.8	2.3
Ability to export / print Gantt		Show if software can meet this requirement	0.4	1.2	0.2	0.0	2.0	0.2	1.0	1.2	2.8	2.8		1.8	2.0
Ability to export / print task sheet	List of tasks w/o the Gantt chart	Show if software can meet this requirement	1.0	1.2	0.3	1.0	2.2	0.6	1.0	1.2	2.8	2.8		1.4	2.0
Ability to filter critical path	Allows user to see the critical path in either / both in the task view or Gantt	Show if software can meet this requirement	0.6	0.2	0.0	0.0	1.7	0.2	1.2	0.6	2.8	2.3		1.2	2.3
Project Schedules Version Tracking (Supports changes to schedule/ multiple baselines)	For rebaselining and other tracking (for Change Orders); supports multiple baselines	Show if software can meet this requirement	1.4	1.0	0.7	0.5	1.6	1.8	1.0	1.0	2.7	3.0		1.6	2.0
Supports Custom Fields and GUI Customerization	Can be added by user - could be a text or formula field	Add a comments field or column	0.6	0.0	0.0	0.5	2.0	0.2	0.3	2.0	2.8	2.5		1.6	1.5
Supports up to (X) number of summary task levels	Usually needed for highly complex projects	State how many tasks levels can be supported	1.0	1.2	0.5	0.5	1.8	0.6	1.3	1.2	2.8	2.8		1.6	2.0
Custom workday schedules	excludes holidays	Create calendar with Christmas as a non-working day	0.8	0.4	0.0	0.0	2.0	0.2	1.2	0.4	2.8	2.5		1.2	2.3
Custom resource schedules	considers resource leave schedules	Create calendar with annual leave as a non-working day	1.8	0.4	0.0	0.5	2.0	0.2	1.0	0.4	3.0	2.7		2.0	2.8
Export to Excel or MS Project		Demonstrate if schedule can be exported to excel or MS Project	1.2	1.2	0.8	1.0	2.5	0.4	0.8	2.0	2.3	2.0		2.2	2.3
Ease of schedule building		Evaluators rate based on what they have seen in this section	0.8	1.4	0.0	0.5	2.0	0.8	0.6	1.4	3.0	2.8		2.0	1.8
PROJECT BUDGET/ COST ESTIMATE															
Ability to import template or prior cost estimates as a starting point for new projects		Demonstate if it is possible to import a template or previous cost estimate	1.0	0.8	0.4	1.5	1.8	0.4	0.8	2.0	0.5	0.3		1.0	1.3
Ability to import excel cost estimate into software with little effort	Take prior cost estimates in the system (such as a generator rebuild) and use that as the template to create your new cost	Demonstate if it is possible to import an excel cost estimate	1.2	0.4	0.2	1.5								1.2	1.0
Resource cost estimate	estimate System has the option of automatically adding staff costs and overhead by individual or position/skill level; should	Add Resources from top of table in the worksheet "Cost Estimate for Testing"	1.6	0.2	0.6	1.5	1.8 1.3	<u>1.0</u> 0.8	0.2	1.6 1.4	0.8	0.5		2.0	1.8

Eval	Evaluation Criteria: 0 - did not meet requirement, 1 - met requirement, 2 - met the requirement and was easy to use, 3 - met the requirement, is easy to use, and is extremely efficient & visually appealing.														
			1st Webinar: ESO Database (SQL)*	2nd Webinar: WBS Schedule Pro	3rd Webinar: ESAM*	4th Webinar: BOE/EV Max	5th Webinar: BrightWork	6th Webinar: WMS	7th Webinar: FBMS PM Module	8th Webinar: Excel PM Tool	9th Webinar: MS Project	10th Webinar: MS Project Server	11th Webinar: RADIMS	11th Webinar: Daptiv	12th Webinar: Primavera
CHARACTERISTIC/ FUNCTION	EXPLANATION OF REQUIREMENT	TEST PLAN	SCORE (0- 3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)
	generate staff budget from schedule														
Detailed Project Schedule Resource Loading	Resource loading should tie to FBMS WBS, select resources based on individuals or skill levels; should automatically pick up pay rate, cost center. Comment: Need to have API; issues surrounding that.		1.6	0.6	0.6	1.5	1.2	0.6	0.8	1.2	1.3	1.8		2.2	1.0
Detailed Project Budget		Add hours from table in the attached to build a detailed project budget.	1.6	0.6	1.0	2.0	1.0	1.0	1.0	1.6	1.0	1.5		1.6	1.8
Budget Development	System should streamline developing project budget requirements; project budget estimates should feed into the Reclamation's budget process. Important from the eCPIC perspective but could also be of use for PMs related to the BRC notebook.	Show if software can: 1-create a budget, 2-provide budget by fiscal year, 3- provide summary of all project budgets in a program for inclusion or linkage to the Workplan Database/Red Book.	1.6	0.4	1.4	2.0	1.0	1.4	1.6	1.4	1.0	1.8		1.4	1.3
Contract Cost Estimate	Project Management personnel develop cost estimates and enter into system once	Enter a contract budget of "\$4,800,000"	1.2	0.0	0.6	1.5	0.8	1.6	0.8	1.2	1.0	1.5		1.0	1.0
Export Cost Estimate to Excel		Demonstrate if the cost estimate can be exported to Excel	1.0	1.0	0.8	1.5	1.8	0.6	1.2	1.4	1.3	1.5		1.4	1.3
Supports costs at task level	Shows budget for each task.	Show if you can see total cost for each task	0.8	0.6	0.8	1.5	2.0	1.0	1.4	1.4	2.0	2.3		1.0	1.8
Enter WBS(s)		Enter "16XR0680A5- RX.30636002.1000000 and 17XR0680A5-RX.30636002.1000000"	1.0	0.6	1.6	1.0	0.8	2.2	1.3	1.2	1.3	1.5		1.2	0.8
PROJECT MANAGEMENT AGREEMENTS															
Service Agreements			1.5	0.6	1.8	1.0	0.2	2.0	0.8	1.2	0.3	1.0		1.0	0.5
Project Charter	The Project Charter should have ability to include suggested fields in the Project Charter Review document.	Demonstrate if software can generate project Charter/PMP/SA or if software operates as a document hub with these documents attached (a 2 or 3 score	0.8	0.0	0.6	0.5	0.5	2.2	1.0	1.2	0.3	1.0		1.0	0.5
Project Management Plan	The PMP template should include the following fields: Scope/definitions, Schedule, Budget, Staffing Plan & Resources, Quality Assurance Plan, Change	would be given if software can generate Charter/PMP, a score of 1 is given if it can be attached, and a 0 score is given if it can not be done)	0.8	0.0	0.6	0.5	0.2	2.4	1.0	1.6	0.3	1.0		1.0	0.5

Evaluation Criteria: 0 - did not meet requirement, 1 - met requirement, 2 - met the requirement and was easy to use, 3 - met the requirement, is easy to use, and is extremely efficient & visually appealing.															
			1st Webinar: ESO Database (SQL)*	2nd Webinar: WBS Schedule Pro	3rd Webinar: ESAM*	4th Webinar: BOE/EV Max	5th Webinar: BrightWork	6th Webinar: WMS	7th Webinar: FBMS PM Module	8th Webinar: Excel PM Tool	9th Webinar: MS Project	10th Webinar: MS Project Server	11th Webinar: RADIMS	11th Webinar: Daptiv	12th Webinar: Primavera
CHARACTERISTIC/ FUNCTION	EXPLANATION OF REQUIREMENT	TEST PLAN	SCORE (0- 3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)
	Management, Communication, Stakeholder Plan, Risk Management, Acquisition Management Plan, Change Management Plan, Signatures and other fields in PMP Review														
Export agreements			0.8	0.4	1.6	1.0	0.0	1.8	0.6	1.2	0.5	0.5		1.4	0.3
Defines what is "substantially complete"	For example in PDF or Word define criteria in the PMP; in the schedule, enter milestones w/predecessoar, when milestones are complete, we could call it "substantially complete"	Includes "substantially complete" language	0.6	0.0	0.4	0.5	0.2	1.8	0.8	1.0	0.0	0.5		0.4	0.3
Establish project schedule and budget baseline	When the project is baselined the project scope (deliverables), schedule & budget would "freeze". Any change in scope that changes budget or schedule by plus/minus a percentage set by the Directorate, schedule or budget changes by plus/minus a percentage set by the Directorate would require project rebaselining. Project Rebaselining would be tracked for the duration of the project.		0.5	0.6	1.0	1.0	0.2	2.2	1.2	1.0	2.0	1.5		1.6	1.0
Project Objectives	Repository for Word Docs? As well as description of objectives associated w/WBS?		1.0	0.0	0.6	1.0	0.5	2.2	1.0	1.2	0.8	1.0		1.0	0.5
Project Scope Statement	Tracking of project scope required for baseline tracking		1.0	0.4	1.2	1.0	0.3	2.2	1.2	1.2	0.8	1.0		1.0	0.5
List of Project Deliverables	Tracking of project deliverables required for Baseline tracking		1.3	0.0	0.8	1.0	0.7	2.2	1.0	1.2	0.8	1.0		1.0	0.5
Project Risk Matrix			1.0	0.0	0.0	1.0	1.4	2.0	0.8	1.2	0.0	1.5		0.8	1.8

Evaluation Criteria: 0 - did not meet requirement, 1 - met requirement, 2 - met the requirement and was easy to use, 3 - met the requirement, is easy to use, and is extremely efficient & visually appealing.															
			1st Webinar: ESO Database (SQL)*	2nd Webinar: WBS Schedule Pro	3rd Webinar: ESAM*	4th Webinar: BOE/EV Max	5th Webinar: BrightWork	6th Webinar: WMS	7th Webinar: FBMS PM Module	8th Webinar: Excel PM Tool	9th Webinar: MS Project	10th Webinar: MS Project Server	11th Webinar: RADIMS	11th Webinar: Daptiv	12th Webinar: Primavera
CHARACTERISTIC/ FUNCTION	EXPLANATION OF REQUIREMENT	TEST PLAN	SCORE (0- 3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)
PROJECT APPROVALS	Allow for electronic signatures within system														
Project Manager	Name and certification level (for OMB 300)	Demonstrate if software can: 1. send email to signatories in order, send	1.8	0.4	1.3	2.0	1.4	2.2	1.0	1.2	1.0	1.5		2.6	2.8
Project Manager Supervisor		reminders, and track who has signed on	1.5	0.0	1.8	2.0	1.4	2.2	1.0	1.0	1.0	1.5		2.6	2.8
Project Sponsor		a summary document plus allows for electronic signatures (score 3), 2. send email to all signatories at once or allows	1.8	0.0	1.0	2.0	1.2	2.2	1.0	1.2	1.0	1.5		2.6	2.8
Client		for electronic or manual signatures (score 2), 3. provides a line for each signatory to sign (score 1), 4. does not provide a way to sign Charter and PMP (score 0)	1.0	0.4	1.8	2.0	1.0	2.2	1.0	1.2	1.0	1.3		2.6	2.5
Project Management Team	Individuals actually doing the work	Provides optional signatory fields that can be programmed to include the Project Team or Stakeholders (for	0.0	0.0	0.5	2.0	1.0	2.0	1.0	1.0	0.3	1.0		2.6	2.3
Construction Management Team	Design, Construction, Acquisitions, Environmental	example) based on the perference of each Region and sends automatic email of executed Charter and PMP (score 3),	0.0	0.0	0.5	2.0	1.0	2.0	1.0	1.0	0.3	1.0		2.6	2.3
Contracting Officer	Name and certification level	provides optional signatory fields and sends automatic email of executed Charter and PMP to Signatories and Project Team (score 2), Provides Optional fields for additional signatories (score 1), does not provide an option for additional signatories (score 0).	0.0	0.0	0.5	2.0	0.8	2.0	1.0	1.0	0.3	1.0		2.6	2.3
FBMS REPORTING															
Actual Cost Incurred Tracking	Pull from Contract, Service Agreement/TSC FA, and labor tracking/reporting tools. OR maximize use of FBMS to the appropriate project Work Break Down Structure.	Demonstrate or explain how financials (actual costs) would be populated in the software	1.0	0.6	1.5	2.0	0.6	1.4	1.2	2.0	0.3	0.0		1.2	0.0
STATUS REPORTS															
*PM Report	Project Classification, Mail Code, Office Name, Project Manager, Project Name, Estimated PMP Approval Date, Project Charter Created (Yes/No), Project Charter Approval Date, Project Management Plan Created (Yes/No), Initiation Phase	Demonstate if software can generate a status report	0.8	0.2	1.5	2.0	1.9	2.0	0.6	1.6	2.3	2.8		2.2	1.1

Eval	uation Criteria: 0 - did not meet req	uirement, 1 - met requirement, 2 - met tl	he requirem	nent and wa	s easy to u	se, 3 - met 1	the requireme	ent, is easy	to use, and	l is extreme	ly efficient	& visually a	appealing.		
			1st Webinar: ESO Database (SQL)*	2nd Webinar: WBS Schedule Pro	3rd Webinar: ESAM*	4th Webinar: BOE/EV Max	5th Webinar: BrightWork	6th Webinar: WMS	7th Webinar: FBMS PM Module	8th Webinar: Excel PM Tool	9th Webinar: MS Project	10th Webinar: MS Project Server	11th Webinar: RADIMS	11th Webinar: Daptiv	12th Webinar: Primavera
CHARACTERISTIC/ FUNCTION	EXPLANATION OF REQUIREMENT	TEST PLAN	SCORE (0- 3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)
	Completed (Yes/No), Planning Phase Completed (Yes/No), Design & Development Phase Completed (Yes/No), Procurement Phase Completed (Yes/No), Execution Phase Completed (Yes/No), Closeout Phase Completed (Yes/No).														
Command to PDF/print group of status reports		Demonstrate if software can PDF/print all status reports for office "ESO"	0.5	0.5	2.0	2.5	1.5	1.8	0.6	1.0	1.5	1.8		1.2	0.8
Tailored Reports		Demonstrate if software has the capability to develop "tailored' reports based on desired data fields for each Region	0.8	0.0	0.0	3.0	1.6	2.0	0.8	1.2	1.5	2.5		2.4	1.4
Project Manager		Demonstrate if software can generate a	0.8	0.5	1.0	1.0	1.8	2.0	0.6	1.2	1.3	1.3		1.6	1.0
Project Manager Supervisor		status report with the the names of	1.0	0.0	1.0	1.0	1.8	2.0	0.6	1.0	1.3	1.3		1.6	1.0
Project Sponsor		these individuals at the top.	1.2	0.0	1.0	1.0	1.8	2.0	0.6	1.2	1.3	1.3		1.6	1.0
Client			0.6	0.5	1.0	1.0	1.8	1.8	0.6	1.2	1.3	1.3		1.6	1.0
Project Management Team			0.0	0.0	0.5	1.0	1.8	2.0	0.6	1.0	1.3	1.3		1.6	1.0
Construction Management Team			0.2	0.0	0.5	1.0	1.8	2.0	0.6	1.0	1.3	1.3		1.6	1.0
Contracting Officer			0.5	0.0	0.5	1.0	1.4	2.0	0.6	1.2	1.3	1.3		1.6	1.0
Project Phase Tracking	This needs to be flexible to allow for Regional preferences if they deviate from the PM Framework	Demonstrate how software meets, if any, of these reporting requirements	1.3	0.0	0.0	1.0	1.3	2.0	0.6	1.2	1.0	1.3		2.0	1.3
*Detailed Schedule	Includes tasks within a set range		0.8	0.0	0.8	1.0	2.0	1.4	0.6	1.2	1.5	2.3		1.8	1.3
"Estimate to Complete"	Perform calculations using system		0.0	0.0	1.0	1.0	1.0	0.6	0.8	1.6	1.3	2.5		1.8	1.0
Calculations	data					_	-			_	-				_
*Detailed Budget Reporting	Includes all open WBS actuals to estimate		0.9	0.5	1.6	1.0	1.0	0.4	0.8	1.6	1.3	2.3		1.6	1.0
*Earned Value Reporting	Have all the elements required to perform EVM and perform EVM calculations in accordance with OMB 300 requirements and Framework (page 31)		1.0	0.0	0.6	2.0	1.2	0.2	0.8	1.6	1.3	2.3		1.6	1.3
Calculates CPI and SPI		1	1.0	0.0	0.8	1.5	0.8	0.2	0.6	1.6	1.3	1.8		1.4	1.0
Supports tracking costs against budget			0.8	0.4	1.4	2.0	1.2	0.6	1.2	1.6	1.0	1.5		1.6	1.3
Track remaining funds		1	1.0	0.0	0.8	1.0	1.0	0.6	0.8	1.0	1.0	1.8		1.6	1.0
Allows for task notes		]	1.4	0.8	0.9	1.0	0.6	1.0	0.8	1.0	1.0	1.3		1.6	0.7
Signature and Date block			1.0	0.0	1.6	1.0	0.4	0.8	0.2	1.0	0.0	0.0		1.0	0.7

Eval	uation Criteria: 0 - did not meet req	uirement, 1 - met requirement, 2 - met tl	he requiren 1st	nent and wa 2nd	is easy to ι	ise, 3 - met 1	the requireme	ent, is easy	to use, and	l is extreme	ely efficient	& visually a 10th	appealing.		
			Webinar: ESO Database (SQL)*	Webinar: WBS Schedule Pro	3rd Webinar: ESAM*	4th Webinar: BOE/EV Max	5th Webinar: BrightWork	6th Webinar: WMS	Webinar: FBMS PM Module	8th Webinar: Excel PM Tool	9th Webinar: MS Project	Webinar: MS Project Server	11th Webinar: RADIMS	11th Webinar: Daptiv	12th Webinar: Primavera
CHARACTERISTIC/ FUNCTION	EXPLANATION OF REQUIREMENT	TEST PLAN	SCORE (0- 3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)
Supports fiscal and calendar year reporting	Ability to run report by FY or Calendar Year		1.0	0.2	1.4	2.0	0.6	0.6	0.8	1.0	1.0	1.5		1.4	0.8
Detailed resource loading		-	0.8	0.4	1.0	1.0	0.8	0.4	0.6	1.0	2.7	2.8		2.0	1.8
Cash flow report (compares revenue to expenses, ex: amount of net cash that flows in and out of			0.3	0.0	0.6	1.0								1.4	1.0
government account)							0.3	0.2	0.4	1.3	0.3	0.3			
PORTFOLIO REPORTS			1.2				2.4			1.6	1.0	1.0			
Report	system on a list; list includes general project information, current schedule and budget information, approval status, etc.		1.2	0.0	2.0	1.5	2.4	1.5	0.4	1.6	1.0	1.8		2.8	2.3
Provide Master List of Projects that can be sorted		Demonstrate how one would see a portfolio list of all projects in the system and how they would <b>sort</b> projects by region, office, PM, client, open/closed status, etc. (for example)	1.4	0.0	2.0	1.5	2.2	1.8	0.8	1.4	0.5	1.8		2.2	1.8
Provide Master List of Projects that can be searched		Demonstrate how one would see a portfolio list of all projects in the system and how they would <b>search</b> for a specific project or WBS (for example)	1.2	0.0	2.0	1.5	2.2	1.8	0.8	1.6	0.5	1.8		2.2	1.8
Provide Master List of Projects that can be filtered		Demonstrate how one would see a portfolio list of all projects in the system and how they would <b>filter</b> projects by client (for example).	0.6	0.0	2.0	1.5	2.2	1.8	0.8	1.6	0.5	1.8		2.2	1.8
Export Master List of projects in sorted or filtered view		Demonstrate if sorted or filtered Master List can be exported to excel, PDF, or printed in a formatted report	1.3	0.0	1.8	1.5	1.8	1.8	0.6	1.6	0.5	1.8		2.6	1.8
CHANGE ORDERS	Allow for electronic signatures within system														
*Project Baseline Detail	Project Classification, Project Site, Project Name, Project Manager, Project Manager Delegate, Project Manager Supervisor, Baseline Number, Baseline Change Type, Baseline Change Reason, Baseline Creation Date	Demonstrate how to find the project baseline	1.4	0.2	1.0	1.5	0.7	2.2	1.2	1.0	1.8	1.3		1.6	2.3
Track project re-baselining	Number of rebaselines and the reason for each rebaseline.	Demonstrate how to create a Change Order	1.4	0.2	1.4	1.5	0.6	2.2	1.2	1.0	1.8	1.3		1.6	2.3

Evaluation Criteria: 0 - did not meet requirement, 1 - met requirement, 2 - met the requirement and was easy to use, 3 - met the requirement, is easy to use, and is extremely efficient & visually appealing.															
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CHARACTERISTIC/ FUNCTION	EXPLANATION OF REQUIREMENT	TEST PLAN	SCORE (0- 3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)
Track changes to highlight changes on Change Orders		Evaluate how transparent changes are in the Change Order	1.2	0.3	1.2	1.5	0.5	2.0	0.6	1.3	1.0	0.5		1.6	2.3
*Project Baseline Summary	Project Classification, Project Site, Project Name, Project Manager, Project Manager Delegate, Project Manager Supervisor, Baseline Count.	Show baseline count - can you tell how many baselines or change orders occurred? And Can you confidently find a prior baseline or change order?	1.0	0.0	1.6	1.5	0.5	2.4	0.8	1.0	1.5	1.3		1.6	2.3
PROJECT DOCUMENTS															
Acquisition Plan	Upload documents plus field for financial	Show how an acquisition document would be uploaded.	0.8	0.0	0.4	1.0	1.2	2.4	1.6	0.5	0.3	0.8		1.2	1.8
Purchase Request Tracking	Submittal to Award tracking		1.0	0.0	0.4	0.5	0.5	2.4	1.2	0.5	0.3	0.8		0.8	1.3
Contracts & Contract Mods	Upload documents plus field for financial		1.2	0.0	0.5	1.0	0.8	2.4	1.4	0.5	0.3	0.8		1.0	1.5
Compliance Checklist - Contracting Acquisitions Checklist	Upload documents plus field for financial		1.0	0.0	0.5	1.0	0.8	2.2	1.4	0.5	0.3	0.8		1.0	1.5
Contract or Financial Assistance Agreement Closeout	As appropriate		1.0	0.0	0.5	1.0	0.7	2.0	1.4	0.5	0.3	0.8		1.0	1.5
Acquisition Closeout Checklist	As appropriate		1.0	0.0	0.5	1.0	0.7	2.0	1.4	0.5	0.3	0.8		1.0	1.5
TSC Financial Agreements		Domonstrate how to attach documents related to a specific project.	1.6	0.8	2.0	1.0	1.0	2.0	1.0	0.8	0.3	0.8		1.2	1.5
Required Permits	Rights of Way, Entry, Water Rights, Crossing Agreements		1.6	0.0	1.0	1.0	0.8	2.0	0.8	0.8	0.3	0.8		1.2	1.5
Environmental/ Cultural Resource Requirements	NHPA Section 106, NEPA, CEC, EA, EIS, ESA, FWS, 401,402, 404, etc.		1.6	0.0	1.0	1.0	0.8	2.0	0.8	1.0	0.3	0.8		1.2	1.5
Misc. Attachments (Inspection reports and pictures?)	Maps, Briefings and other miscellaneous documents developed during the project life cycle		1.8	0.5	1.6	1.0	1.2	2.0	1.0	0.8	0.3	0.8		1.2	1.8
PROJECT ARCHIVE															
Project Data Archive	Capability to archive all project data. Data must be key word searchable.	Demonstrate how to save the project in an archive	0.3	0.5	1.8	1.0	1.6	2.2	1.2	1.3	0.5	1.5		1.2	2.3
Lessons Learned Database	Project database that contains lessons learned. Need to sort out how this would be organized. Data must be key word searchable. (also it may be a good idea to archive cost estimated of different	Demonstrate how to save Lesssons Learned for this project, example of a 3 score would be if the lessons learned were saved in one location (i.e. Lessons Learned Database)	0.0	0.0	0.4	1.0	1.0	2.2	0.4	0.8	0.3	0.3		2.8	2.0

Evaluation Criteria: 0 - did not meet requirement, 1 - met requirement, 2 - met the requirement and was easy to use, 3 - met the requirement, is easy to use, and is extremely efficient & visually appealing.															
			1st Webinar: ESO Database (SQL)*	2nd Webinar: WBS Schedule Pro	3rd Webinar: ESAM*	4th Webinar: BOE/EV Max	5th Webinar: BrightWork	6th Webinar: WMS	7th Webinar: FBMS PM Module	8th Webinar: Excel PM Tool	9th Webinar: MS Project	10th Webinar: MS Project Server	11th Webinar: RADIMS	11th Webinar: Daptiv	12th Webinar: Primavera
CHARACTERISTIC/ FUNCTION	EXPLANATION OF REQUIREMENT	TEST PLAN	SCORE (0- 3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)
	types of projects for a starting point on new projects. So if an engineer is assigned a transformer rebuild, they can go look at the lessons learned and cost estimate for a prior transformer rebuild)														
CLOSE-OUT															
Project Closeout		Demonstrate how a project would be closed out in this software	0.8	0.3	0.6	1.0	0.6	2.2	0.6	1.0	0.3	1.0		1.4	1.0
Project Team Member Survey		Demonstrate if software can generate a survey or how a survey would be conducted	0.0	0.0	0.0	1.0	0.2	2.0	0.2	0.7	0.0	0.0		0.6	0.3
Client/Stakeholder Survey		Demonstrate if software can generate a survey or how a survey would be conducted	0.0	0.5	1.2	1.0	0.2	1.8	0.0	0.7	0.0	0.0		0.4	0.3
ANNUAL REPORTING															
OMB 300 Reporting	All required OMB 300 data - check that all required fields are included	Show if summary reports can be created by software, and include the following if possible: project name, WBS, budgets,	0.0	0.0	0.2	1.0	0.1	1.0	0.6	1.0	0.3	0.5		0.5	0.8
*Annual Management Reports - Detailed	Project Classification, Project Site, Project Name, Project Manager, Project Manager Delegate, Project Manager Supervisor, Est PMP Approval Date, Project Charter Created (Yes/No), Project Charter Approval Date, PMP Created (Yes/No), PMP Approval Date, Project Baselined (Yes/No), Initiation Phase Completed (Yes/No), Planning Phase Completed (Yes/No), Design & Development Phase Completed (Yes/No/Within Budget Acceptance/Within Schedule Acceptance), Procurement Phase Completed (Yes/No/Within Budget Acceptance), Execution Phase Completed (Yes/No/Within Budget Acceptance), Execution Phase Completed (Yes/No/Within Budget Acceptance), Closeout Desco Completed (Yes/No/Within	expenditures, scheduled completion dates, actual completion dates - and compute the number and value of project completed within budget and schedule.	0.0	0.0	0.0	1.0	0.1	2.0	0.6	1.3	0.8	0.5		1.0	1.3
Evalu	uation Criteria: 0 - did not meet req	uirement, 1 - met requirement, 2 - met th	ne requirem	ent and wa	s easy to u	se, 3 - met 1	the requireme	ent, is easy	to use, and	l is extreme	ly efficient	& visually a	appealing.		
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			1st Webinar: ESO Database (SQL)*	2nd Webinar: WBS Schedule Pro	3rd Webinar: ESAM*	4th Webinar: BOE/EV Max	5th Webinar: BrightWork	6th Webinar: WMS	7th Webinar: FBMS PM Module	8th Webinar: Excel PM Tool	9th Webinar: MS Project	10th Webinar: MS Project Server	11th Webinar: RADIMS	11th Webinar: Daptiv	12th Webinar: Primavera
CHARACTERISTIC/ FUNCTION	EXPLANATION OF REQUIREMENT	TEST PLAN	SCORE (0- 3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)
	Budget Acceptance/Within Schedule Acceptance),														
*Annual COG Reports - Summary	Project Category, Planning Phase Number Complete, Planning Phase Number Complete on Time, Planning Phase Number Complete within Budget, Design and Development Phase Number Complete, Design and Development Phase Number Complete on Time, Design and Development Phase Number Complete within Budget, Procurement Phase Number Complete, Procurement Phase Number Complete on Time, Procurement Phase Number Complete within Budget, Execution Phase Number Complete within Budget, Execution Phase Number Complete, Execution Phase Number Complete on Time, Execution Phase Number Complete within Budget, Closeout Phase Number Complete, Closeout Phase Number Complete on Time, Closeout Phase Number Complete within Budget.		0.0	0.0	0.8	0.5	0.1	2.2	0.3	1.7	0.3	0.5		1.3	1.3
MR&R REPORTING	Additional data fields specific to annual MR&R data call		0.0	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Region	Project Information	Do not need to test these requirements.	0.0	0.0	#DIV/0!	#DIV/0!	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
State	Project Information		0.0	0.0	#DIV/0!	#DIV/0!	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
MRRUID	Unique identifier for each MR&R activitiy. Project Information		0.0	0.0	#DIV/0!	#DIV/0!	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

EVa	luation Criteria: 0 - did not meet requ	uirement, 1 - met requirement, 2 -	met the requirem	ient and wa	as easy to u	ise, 3 - met	the requirem	ent, is easy	/ to use, and	a is extreme	ely efficient	& visually a	appealing.		
			1st Webinar: ESO Database (SQL)*	2nd Webinar: WBS Schedule Pro	3rd Webinar: ESAM*	4th Webinar: BOE/EV Max	5th Webinar: BrightWork	6th Webinar: WMS	7th Webinar: FBMS PM Module	8th Webinar: Excel PM Tool	9th Webinar: MS Project	10th Webinar: MS Project Server	11th Webinar: RADIMS	11th Webinar: Daptiv	12th Webinar: Primavera
CHARACTERISTIC/	EXPLANATION OF REQUIREMENT	TEST PLAN	SCORE (0-	SCORE (0-	SCORE	SCORE (0-	SCORE (0-3)	SCORE	SCORE (0-	SCORE (0-	SCORE (0-	SCORE (0-	SCORE (0-	SCORE (0-	- SCORE (0-
RPUID	ERPP unique identifier Project		3)	0.0	(0-3) #DIV/01	3) #DIV/01	3.0	(0-3) #DIV/01	3) #DIV/01	3) #DIV/01	3) #DIV/01	3) #DIV/01	3) #DIV/01	3) #DIV/01	3) #DIV/01
	Information														
Status of Activity	Complete, incomplete, deleted, or revised from previous year's submission. Project Information		0.0	0.0	#DIV/0!	#DIV/0!	3.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Formal cost estimate	Is the cost estimate a formal estimate per Reclamation FAC 09- 01? yes/no response. Project Budget		0.0	0.0	#DIV/0!	#DIV/0!	3.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Level of cost estimate	Preliminary, appraisal, feasibility, percent design, or pre-validation. Project Budget		0.0	0.0	#DIV/0!	#DIV/0!	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Peer review	Was the cost estimate peer review according to established business practices? Yes/no response.		0.0	0.0	#DIV/0!	#DIV/0!	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Extent of cost estimate	Does the estimate include all inderect costs (i.e., contract costs, allowances, and non-contract costs). Project Budget		0.0	0.0	#DIV/0!	#DIV/0!	2.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Federal share	Anticipated federal share as a percentage of total cost. Includes advance funding from appropriations, Safety of Dams work, and PL 111-11 extended repayment activities. Project Budget		0.0	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Estimated costs by FY	Breakdown of estimated costs per vear. Project Budget		0.0	0.0	#DIV/0!	#DIV/0!	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Anticipated sources of funding by FY	Appropriations, power financing, reserved works advanced water user funding, and transferred operating entity's direct funding. Project Budget		0.0	0.0	#DIV/0!	#DIV/0!	3.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Total reimbursable / non- reimbursable amounts	Project Budget		0.0	0.0	#DIV/0!	#DIV/0!	3.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Currently budgeted	Yes/no response indicating whether the activity is included in the current year budget justification, next year budget estimate, or in out-year budget formulations. Project Budget		0.0	0.0	#DIV/0!	#DIV/0!	3.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Eval	uation Criteria: 0 - did not meet req	uirement, 1 - met requirement, 2 - met th	e requirem	nent and wa	s easy to u	se, 3 - met 1	the requireme	ent, is easy	to use, and	l is extreme	ly efficient	& visually a	ppealing.		
			1st Webinar: ESO Database (SQL)*	2nd Webinar: WBS Schedule Pro	3rd Webinar: ESAM*	4th Webinar: BOE/EV Max	5th Webinar: BrightWork	6th Webinar: WMS	7th Webinar: FBMS PM Module	8th Webinar: Excel PM Tool	9th Webinar: MS Project	10th Webinar: MS Project Server	11th Webinar: RADIMS	11th Webinar: Daptiv	12th Webinar: Primavera
CHARACTERISTIC/ FUNCTION	EXPLANATION OF REQUIREMENT	TEST PLAN	SCORE (0- 3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)
Discussed with water/power customers	Yes/no response to indicate whether the activity has been discussed with the appropriate water or power customers. Project Documents		0.0	0.0	#DIV/0!	#DIV/0!	2.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Probability Rating / Justification	Indicate rating of high, likely, occasional, or rarely based on MR&R General Reporting Guidance document. Project Documents		0.0	0.0	#DIV/0!	#DIV/0!	3.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Consequence Rating / justification	Indicate rating of catastrophic, critical, significant, or minor based on MR&R General Reporting Guidance document. Project Documents		0.0	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Risk Assessment Score	Determined by the probability and consequence ratings. Project Documents		0.0	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Investment Rating / Justification	Indicate rating of major, moderate, or low based on MR&R General Reporting Guidance document. Project Documents		0.0	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mission Contribution / Justification	Indicate rating of major, moderate, or minimal based on MR&R General Reporting Guidance document. Project Documents		0.0	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Benefits Score	Determined by the investment and mission contribution ratings. Project Documents		0.0	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
MR&R Categorization	Determined by the sum of the Risk Assessment and Benefits scores. Project Documents		0.0	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
<b>GENERAL CHARACTERISTICS</b>	i														
Meets IT Requirements	IT requirements need to be specified	State if software meets this requirement	1.0	1.2	0.6	0.0	1.5	2.4	1.2	0.8	1.3	1.3		0.6	1.0
Installed on Reclamation Server	Can it be installed / is it installed on a Reclamation server? For example, if contract ends and we have to readverise, how do we get data transferred?	State if software meets this requirement	1.2	1.2	0.8	1.0	1.3	2.2	1.4	0.8	1.5	0.3		0.5	0.7

Evalı	uation Criteria: 0 - did not meet req	uirement, 1 - met requirement, 2 - met th	ne requirem	nent and wa	s easy to u	se, 3 - met 1	the requireme	ent, is easy	to use, and	l is extreme	ly efficient	& visually a	ppealing.		
			1st Webinar: ESO Database (SQL)*	2nd Webinar: WBS Schedule Pro	3rd Webinar: ESAM*	4th Webinar: BOE/EV Max	5th Webinar: BrightWork	6th Webinar: WMS	7th Webinar: FBMS PM Module	8th Webinar: Excel PM Tool	9th Webinar: MS Project	10th Webinar: MS Project Server	11th Webinar: RADIMS	11th Webinar: Daptiv	12th Webinar: Primavera
CHARACTERISTIC/ FUNCTION	EXPLANATION OF REQUIREMENT	TEST PLAN	SCORE (0- 3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)
Good customer service	Does the company provide acceptable levels of customer service?	Explain what customer service and maintainance plan would be	1.6	1.0	1.2	1.0	0.8	2.0	1.6	1.3	1.3	1.0		1.2	1.0
Ease of use	Subjective ranking on overall ease of use.	Evaluators determine this	2.0	2.0	1.8	2.0	1.8	2.2	0.2	1.5	2.3	2.5		1.8	1.5
Can be operated by all PM's (vs. technical expert)	Is the software accessible and able to be used by all PMs vs. financial staff?	State level of expertise needed to operate software (1-technical expert, 2- most PM's, 3-stakeholders and clients can also easily navigate in system with no experience)	1.8	2.0	1.4	2.0	2.4	2.2	0.6	1.8	2.3	2.5		1.8	1.5
Understand Where you are in the Program		Evaluators determine this	1.6	2.0	1.6	2.0	2.2	24	0.8	15	23	25		1.6	1.8
Single system to cover all functions	System handles scheduling, budgeting, tracking, and reporting - replacing MS Project, Primavera, or other project management software	Evaluators determine this	0.6	0.2	0.6	0.5	0.8	1.2	1.2	0.5	1.0	0.8		1.4	0.8
Single data entry	Project Manager doesn't have to enter project management information in more than 1 system (ok if 2 systems were linked as one)	Evaluators determine this	0.2	0.2	0.6	1.0	0.6	1.3	1.0	1.0	0.8	0.9		1.2	0.8
Ability to produce	Ability to report on any system	Explain capability	1.0	0.0	1.0	1.5	1.7	1.8	1.0	1.5	2.0	2.8		2.2	1.5
Flexibility to use for other reporting purposes (e.g., MR&R)		Explain capability	0.2	0.0	0.0	1.0	0.7	1.4	0.6	0.8	0.5	0.3		1.0	0.8
Accomodates multiple years	Facilitates long-range planning (5- year or beyond)	Explain capability and demonstrate if possible	0.8	0.6	1.6	1.0	1.3	1.8	1.2	1.5	1.5	1.5		1.8	1.8
Project Manager Checklist	As part of the system or require uploaded document before approval	Show if templates and instruction documents can be attached in a general section or on a homepage.	0.4	0.0	0.2	1.0	0.3	2.2	1.0	0.7	0.0	0.8		2.0	0.0
Covers PR&G Requirements	Scalable analysis for XM and Dam Safety Projects (D&Ss still under development)		0.4	0.0	0.0	1.0	0.4	1.6	0.4	0.3	0.0	0.5		0.6	0.0
Covers GAO Contractor's Schedule Guidelines			0.7	0.0	0.0	1.0	0.1	1.4	0.5	0.3	0.0	0.5		1.0	0.0
Training Requirements		(0-lot of training required to enter system, 1-minimal training required, 2- minimal time to figure out system, 3- system is transparent, logical and easy to use with little to no training)	2.0	1.8	1.6	0.5	1.7	2.2	0.2	2.0	1.8	1.3		2.0	1.5

Eva	luation Criteria: 0 - did not meet requ	uirement, 1 - met requirement, 2 - met tł	ne requirem	ient and wa	s easy to u	ise, 3 - met i	the requireme	ent, is easy	to use, and	l is extreme	ely efficient	& visually a	appealing.		
			1st Webinar: ESO Database (SQL)*	2nd Webinar: WBS Schedule Pro	3rd Webinar: ESAM*	4th Webinar: BOE/EV Max	5th Webinar: BrightWork	6th Webinar: WMS	7th Webinar: FBMS PM Module	8th Webinar: Excel PM Tool	9th Webinar: MS Project	10th Webinar: MS Project Server	11th Webinar: RADIMS	11th Webinar: Daptiv	12th Webinar: Primavera
CHARACTERISTIC/ FUNCTION	EXPLANATION OF REQUIREMENT	TEST PLAN	SCORE (0- 3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0-3)	SCORE (0-3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)	SCORE (0- 3)
	OVERALL IMPRESSION OR SCORE (1-10, 10 being best)		7.3	3.5	5.3	2.7	5.7	7.4	2.3	5.8	4.9	5.8		9.0	7.8

\* Required = software package would not support successful project management without these functions

\* **Preferred** = function would significantly enhance usability/value of the tool for use on project management

\* **Optional** = nice to have but not needed for successful project management

Evaluation Criteria:

0 - did not meet requirement,

1 - met requirement,

2 - met the requirement and was easy to use,

3 - met the requirement, is easy to use, and is extremely efficient & visually appealing.

# Appendix B – Summary of PM Software Capabilities and Costs

	<b>Basic Project Manag</b>	ement Tools	PM S	Software Customized o	r Develop	ed in House		Comm	ercially Availa	ble Complex Advan	ced PM Soft	ware
Capabilities/Costs			Ent.	PFM/Ent.	Ent.	PFM	PFM/Ent.		Ро	ortfolio/Enterprise		
	WBS Schedule Pro	<b>MS Project</b>	FBMS PM Module	ESO Database (SQL)*	ESAM*	Excel PM Tool	WMS	BrightWork	<b>BOE/EV</b> Max	<b>MS Project Server</b>	Primavera	Daptiv
Capabilities												
Software Access and Getting Started	1.8	2.2	1.3	2.1	2.2	2.0	2.6	1.5	1.5	2.3	1.6	1.5
Project Information	0.6	1.7	1.2	1.0	1.4	1.2	2.2	1.4	1.4	1.9	1.2	1.1
Project Schedule	1.1	2.7	1.0	0.9	0.4	1.1	0.5	2.0	0.6	2.6	2.2	1.7
Project Budget/Cost Estimate	0.5	1.1	1.0	1.3	0.8	1.4	1.1	1.4	1.6	1.4	1.3	1.4
Project Management Agreements	0.2	0.6	0.9	0.9	0.9	1.2	2.1	0.4	0.9	1.0	0.6	1.0
Project Approvals	0.1	0.7	1.0	0.9	1.0	1.1	2.1	1.1	2.0	1.3	2.5	2.6
FBMS Reporting	0.6	0.3	1.2	1.0	1.5	2.0	1.4	0.6	2.0	0.0	0.0	1.2
Status Reports	0.2	1.2	0.7	0.8	0.9	1.2	1.2	1.3	1.3	1.6	1.0	1.6
Portfolio Reports	0.0	0.6	0.7	1.1	2.0	1.6	1.7	2.1	1.5	1.8	1.9	2.4
Change Orders	0.2	1.5	1.0	1.3	1.3	1.1	2.2	0.6	1.5	1.1	2.3	1.6
Project Documents	0.1	0.3	1.2	1.3	0.8	0.6	2.1	0.8	1.0	0.8	1.5	1.1
Project Archive	0.3	0.4	0.8	0.2	1.1	1.0	2.2	1.3	1.0	0.9	2.1	2.0
Close Outs	0.3	0.1	0.3	0.3	0.6	0.8	2.0	0.3	1.0	0.3	0.5	0.8
Annual Reports	0.0	0.5	0.5	0.0	0.3	1.3	1.7	0.1	0.8	0.5	1.1	0.9
General Characteristics	0.8	1.2	0.9	1.0	0.9	1.1	1.9	1.2	1.1	1.3	1.0	1.4
Overall Impression	3.5	4.9	2.3	7.3	5.3	5.8	7.4	5.7	2.7	5.8	7.8	9.0
TOTAL SCORE	10.2	19.9	15.8	21.2	21.5	24.4	34.6	21.9	21.7	24.2	28.5	31.3
Approximate Costs												
Initial Purchase Cost (based on 1000 users)	\$175,000	Unknown		\$70,000				\$90,000	\$136,500	\$660,000	\$2,750,000	\$600,000
COR & Acquisition Labor Cost	\$5,000							\$5 <i>,</i> 000	\$5,000	\$5,000	\$5,000	\$5 <i>,</i> 000
Customization Cost to meet most Requirements	Low	Low	High	Medium	Medium	Medium	Low	Medium	Medium	Medium	Medium	Low
Training (Staff Labor)	Low	Low	High	Medium	Medium	Medium	Medium	High	High	High	High	High
Annual Maintenance x 5 years			Unknown	<\$10,000	\$152,700	<\$10,000	\$50,000					
Annual License Renewal Cost x 5 years			Unknown					\$90,000	\$170,625	Unknown	\$3,025,000	Unknown
MINIMUM COST	\$180,000	\$0	Unknown	<\$80,000	\$152,700	<10,000	\$50,000	\$185,000	\$312,125	\$665,000	\$5,780,000	\$605,000

## Appendix C – Screenshots of PM Software

## ESO Database (SQL) Screenshots

Projects Workload Report	Admin						Cunningh	uam, Amber Z	Logout
Projects:									
+ E-Mail Service Agreement							V Hide Co	mpleted 😰 Hide	Deleted
Service Agreement #	Project Name	ESO Project Manager	Client Office	Project Status -	Client Manager Sign Off Date	ESO Current Total	Others' Current Total	Contract Curre	ent Total
2014-057	Davis Dams Interviews	Tincher, Patrick S	Hoover Dam	Active	2/24/2014	\$0.00	\$0.00	\$0.00	1
2014-056	Parker Dam Transformer Deck Rehab Claim	Krzisnik, Gary M	Parker Dam	Active	1/17/2014	\$0.00	\$0.00	\$0.00	1
2014-055	Hoover Dam Spilway House Contract Structure Close-Dut, Sustainability and LEED, and Commissioning	Arndt, William (Bill) M	Resource Management Office	Active	3/13/2014	\$0.00	\$0.00	\$0.00	1
7 2014-054	Inspection for San Luis Demonstration Treatment Plant	Carvajal, Arturo	MP Regional Office	Active	2/2/2014	\$0.00	\$0.00	\$0.00	1
2014-050	Las Vegas Wash Support	Blatchford, Douglas B	Resource Management Office	Active		\$0.00	\$0.00	\$0.00	1
2014-049	OC TPP Overhaul Unit 22-24	Camus, Edwin (Ed)	PN Regional Office	Active	1/2/2014	\$0.00	\$0.00	\$0.00	1
77 2014-045	Mr. Elbert Hazardous Materials Assessment	Smith, Juli A	GP Regional Office	Active	1/30/2014	\$0.00	\$0.00	\$0.00	1
P 2014-044	2013 CRWUA Mike's support	Bernardo, Michael A	Regional Director's Office	Active	5/1/2014	\$0.00	\$0.00	\$0.00	1
P 2014-043	Campus Drawings and AutoCAD Work	Omelas, Enrique		Active	3/4/2014	\$0.00	\$0.00	\$0.00	1
2014-041	Doering - Kingston TVA Inspection	Rodriguez, Manuel C	Technicial Service Center	Active	10/1/2013	\$0.00	\$0.00	\$0.00	1
2014-040	Install pumps for Quagga Issues, Anizona power plant Units A2 thru A9	Baugh, Benjamin D	Hoover Dam	Active	12/4/2013	\$0.00	\$0.00	\$0.00	1
2014-039	Dam Spillways, Drum Gate Drain Hose Replacement	Wilson, Richard W	Hoover Dam	Active	12/3/2013	\$0.00	\$0.00	\$0.00	1
2014-036	Pressure Vessels and penshock inspection	Gee, Nathaniel K	Davis Dam	Active	12/5/2013	\$0.00	\$0.00	\$0.00	1
<b>2014-035</b>	EES District & CAP ROBM	Gee, Nathaniel K	Phoenix Area Office	Active	12/2/2013	\$0.00	\$0.00	\$0.00	1
2014-034	Science and Technology Program	Gee, Nathaniel K	Technicial Service Center	Active	12/3/2013	\$0.00	\$0.00	\$0.00	1
2014-033	P-MIP 4MP Tumover Inspection	Ervn, Phillip G	Phoenix Area Office	Active	4/29/2014	\$0.00	\$0.00	\$0.00	1
2014-031	Yuma Mesa Pump Station 1	Omelas, Enrique	Tuma Area Office	Active	11/1/2013	\$0.00	\$0.00	\$0.00	1
<b>2014-030</b>	Cemetery Wash Design	Miller, Michael V		Active	5/5/2014	\$0.00	\$0.00	\$0.00	1
7 2014-029	Research Asbestos Survey at Parker Dam HVAC dust insulation	Smith, Juli A	Parker Dam	Active	3/24/2014	\$0.00	\$0.00	\$0.00	1
<b>2014-028</b>	Generator Cooling Water Piping	Bernardo, Michael A	Parker Dam	Active	3/10/2014	\$0.00	\$0.00	\$0.00	1
2014-027	Yuma BH Support	Smith, Juli A	Yuma Area Office	Active	3/24/2014	\$0.00	\$0.00	\$0.00	1
2014-022	Santa Ana Bacin Study	Nichols, Thomas R	Southern California Area Office	Active	11/1/2013	\$0.00	\$0.00	\$0.00	1

Figure 1. ESO Database home page showing a list of all projects

Projects Workload Report	Admin					
2011-030 - Rehabilitat	ion of Date St Bidg 100 and 20	0				
	Victorian Con	went Accounters 2011-030 (Origin	Canada Antermenti T	Constant Change		
	Wednesd ***	the system terr on page	o service regressioners	Contrast County		
Service Agreement Cost E	stimate Monthly Status Report					
Service Agreement:						
Project Summary	t to FDF Advance to Completed 🌼					
100000				SS 20 10		
Project status:				Attachments:	Add Attachment	
Project Status:	Active			Attachment.		
Project Information:				Attachment1.pdf		.8
Service Agreeolent Number:	2011-030					
Animement Tuner	Tarvis a Lucaman					
Project Name:	Rehabilitation of Date St Bits 100 and 100					
Customer Number:	and a second second second					
WBS:	K12-1510-D47E-0019210					
Total Budget:	\$1,460,967.00					
and the second sec						
ESO Broject Menager:	Sector Thereas (Territ (ESO)					
ESO Project Foolinger	the Resource Selected					
ESO Project Sponsor	Sourcer Thereau (Terril (ESO)					
Finance Specialist:	Wong, Peter J (Financial Management)					
Lenning the second						
Initiation Date:	100000					
Execution Date:	27112014					
Completion utile	10730722/14					
1						
1.0 Approvals						
on the second						
ESO Sponsor Sign Off:	Saumier, Thereas (Terril (ESO)	Date:	2/11/2014	1		
Client Menaper Sign Off:	Vade, Stacy L (Management Services Office)	Date:	2/11/2014	1		
Finance Specialist Sion Off:	Wong, Peter J (Financial Management)	Date:	2/11/2014	1		
		1. Sector 1.		1 - C. 1		
	2×1					
Generate Formal Service Agreem	era					

Figure 2. The home page of an active service agreement

Projecti Workload F	Report Adv	ŵ																	Cunningham, Amber a
011-030 - Reha	bilitation	of Date	St Bidg	100 and Vewing:	200 Current Agreement	2011-030 (Original	Service Agreement)	• Gener	ate Change Order										
iervice Agreement	Cost Estimate	M	onthly Status R	leport .															
ost Estimate:																			
Deport to Least																			
	5	tart Date	End Date	Duration (days)	Anderson, Traey D. Project Manager 15:0 13:70.00	Carrins, Edwin Edd. Project Manager, 550 577,00]	Kotiselk, Gary M. Project Manager, ESO 5 12500]	Manue Philip M Project Manager 500 512000	Mangetha Kovin M. Project Manager, ESO 5 113.001	Saurater, Therena (Terri), Project Manager, (50) (5111.00]	Tinches, Patrick S Project Manager ESO (\$ 128.00]	Eachaed, Richaed A. Project Manage, Boolder Canyoo Oper elicen	Labor Hours	Labor Cost	Admin/ Clencal Support (0.00 %)	Non Labor Cost	Total Cost	ESO Labor Hours	650 Subtotal 😡
Phase: Planning																			
Task 1	1	/1/2011	10/31/2011	216	0	0	0	0	0	0	0	0	Ø	\$0.00	\$0.00	\$482,123.00	\$482,123.00	Ø	\$482,123.00
Task 2	1	1/1/2011	6/14/2013	424	600	3,152	40	10	215	2,960	10	3,152	10139	\$911,931.00	\$0.00	\$33.00	\$911,954.00	6987	\$662,956.00
Change Order	6	/14/2013	10/30/2014	360	0	240	0	0	328	80	.24	0	672	\$68,160.00	\$0.00	(\$1,280.00)	\$66,880.00	672	\$66,880.00
SUBTOTAL					\$ 47,400.00	\$ 267,968.00	\$ 5,160.00	\$ 1,290.00	\$ 61.359.00	\$ 343,520.00	\$ 4,386.00	\$ 249.008.00	10811	\$980.091.00	\$0.00	\$480,876.00	\$1,460.967.00	7659	\$1,211,959.00
TOTAL					\$ 47,400.00	\$ 267,968.00	\$ 5,160.00	\$ 1,290.00	\$ 61,359.00	\$ 343,520.00	\$ 4,386.00	\$ 249,008.00	10811	\$980.091.00	\$0.00	\$480,876.00	\$1,460,967.00	7659	\$1,211,959.00
iO xider Caryon Operati retract Cost:	Office tions Office		\$1.2 \$24	Cost 11,959.00 9,008.00															
oət:	Notesc																		
ontingency Cost: 🔎																			
ontingency Cost: 0.60	0 %	Notes:																	
Total Cost: \$1,460.963	7.00																		

Figure 3. The cost estimate tab of an active service agreement

Projects Workinad Report	Admin								unningham, A	Amber Z	Logout
2011-030 - Rehabilitatio	n of Date St Bidg 100 and 200										
	Vening: Current Agreeme	n 2011-030 (Oviginal Service Agree	Generate Change	Order							
Service Agreement Cost Exter	ate Monthly Status Report										
Monthly Status R	eport:										
Reporting Month: 9								View Report 2017-	19		.Go
Project Number:	2011-030										
Project Title:	Rehabilitation of Date St Bits 100 and 200										
Service Agreement (SA) Number:	2011-030										
Change Order Number:	0										
Client Office:	Management Services Office										
Client Office Project Manager:	Wade, Stacy L (Management Services Office)										
ESO Project Sponsor:	Soumer, Theresa (Terri) (ESO)										
ESO Project Manager:	Sourrier, Thoresa (Tent) (ESO)										
SA Budget At Completion (SABAC):											
Non-Contract Performance Metrics Performance Metrics (WBS Level)	(Task Lovel)										
Description	Budget at Completion	Actual Cost (AC)3	Remaining Funds								
ESO	\$1,211,959.00	\$0.00	\$1,211,959.00								
Boulder Canyon Operations Office	\$249,008.00	\$0.00	\$249,008.00								
Contract Costs	50.00 D.S. is instructed in the above Labor	50.00	\$0.00								
Contingency Cost	costs										
Total Cost	\$1,450,967.00		\$1,460,967.00								
Non-contract Performance Analys           Earn Value (IV)         Plan Value (PV)           \$0.00         \$1,460,967.00	s (Service Agreement Level) Cost Performance Index (CPI) Schedule Performance Ind 0.00 0.00	er (595)									

Figure 4. The monthly status report tab of an active service agreement

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otes 1. Included Approvet 2. Includes Continge 3. Values Determiner 4. Contract Performa	d Change Orders/Modifications noide d Based on FIRS Report "FYTD / noe reporting for projects where	Actual Costs and Obligatic ESO is the overall project	ins without Accruais" (File Name: "FYTD by Mc manager	anth Acct Org Oby without accruaits intr') thre	Ngh MM YYYY Inclusive of PPYYYY-XO	xx	
finitions							
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Figure 5. The monthly status report tab of an active service agreement, continued

## **WBS Schedule Pro Screenshots**



Figure 6. A project hierarchy diagram reflecting the planning, coding and testing phase of a project







Figure 8. A Gantt chart reflecting the task schedule of a project

	WBS	Name	Duration	Cost
1	1	Project 1	121 days	\$15,000.00
2	1.1	🗉 Plan	15 days	\$3,000.00
3	1.1.1	Task 1	5 days	\$1,000.00
4	1.1.2	Task 2	2 weeks	\$2,000.00
5	1.2	🗉 Code	9 days	\$4,000.00
6	1.2.1	Task 3	5 days	\$2,500.00
7	1.2.2	Task 4	4 days	\$1,500.00
8	1.3	🗆 Test	10 days	\$8,000.00
9	1.3.1	Task 5	10 days	\$3,000.00
10	1.3.2	Task 6	0 days	\$5,000.00

Figure 9. A task sheet reflecting a task hierarchy, duration, and task cost of a project

## **ESAM Screenshots**

	Service Agreement List	User Lis	Client	Billable Rates Reports	Cost Center List			signed in	as: oburnett(ADMIN LC)	Ų
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Figure 10. ESAM homepage showing a list of all projects

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contraction continuity						
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Group	Select One •	Office	Select One *			
Account Manager		Contact				
Project Manager						
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Figure 11. Home page of an agreement

M Modernization v3.0.0-b5	7: Service Agreement List User List Client	Billable Rates Reports Cos	Centre Ust			signed in as: oburnett(ADMIN(LC)
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Add Milestone Action	Milestone		Approved Date		Actual Date	
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Figure 12. The schedule tab of an agreement

Modernization v3.0.0-b57:	Service Agreement	int UserList Chent	Bilable Rates	Reports Cos	Contec List							5	igned in as: obur	pett(ADM	IN(LC)
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Save Cancel Pret Detail Schedule Budge	Nosty t History Completion	Attachments					Advanced	i Planned 🗐	Year						
Add Budget item		Carl C. P. Science and	372		1010	-			100000					-	
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Figure 13. The budget tab of a service agreement

SAM Modernization v3.0.0-b57:	Service Agreement List User List Client	Billable Rates Reports Cost	Center List			signed in as: oburnett(ADMIN(LC) Logost
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Job Status	DRAFT *	WOID		WOID Status	PENDING	
Client Approved	Resources Available	Project Category	BASIC •	BRC Advanced Planned 💷 Ye	ear	
Save Cancel Print 1	Notify					
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Attachments can be added a	after the Service Agreement is saved					

Figure 14. The attachment tab of an agreement

## **BOE/EV Max ProjStream Screenshots**



Figure 15. The various project management products of ProjStream

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Figure 16. The cost estimating page of an agreement

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Figure 17. The Bi-Directional Integration of MS Project and Primavera

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Figure 18. Export Data from BOE Max to the Schedule



Figure 19. Bi-Directional Integration – Link Schedule Elements to Logic. Tasks are linked together in the proper sequence in MS Project

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Figure 20. An earned value status report of an agreement

## **Brightwork Screenshots**



Figure 21. The set-up page of a service agreement



Figure 22. The various capabilities of the Brightwork system

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Figure 23. The portfolio management tracking tab reflecting the project tasks of an agreement

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Figure 24. The summary work tab of an agreement

## **WMS Screenshots**

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Workload	As a member of the Acquisition Team, I am individually requirebile for orliguesting personal nones and copies of documents wated to acquisition activities for the duration of the proceedings including focusing reports and acquisition documents in locked or secured obtaints.	Application
	If it is determined that consultation with anyone publicle the Acquiation Team is namesary you shall first attain written authorization from the Contracting Officer to make such contact.	
	The operators, decisions, and documents of the Acquisition Team are required to be held in diricted confidence, lives a minor breach of pricedure could have give - consequences for this acquisition if such a treach size pursued to the legal limits by an approved party.	
	By requesting data from WMS I hereity certify that I understand and will able by the above notice of non-disclosure.	
	The above notice should be provided to the user after logging into the system. The user will be blocked how continuing beyond the initial WAS welcome acrees will they indicate agreement with the message in the certification.	
	Accept. Dectree	

Figure 25. The login page of WMS

RECLAMATION Managang Rates in the Real		William .
Inver Alfran Ragin Auer-Sol Kag I man I ma	Welcome to the Workload Management Spatient Please club on the Program pace would like to lot Activities/Padrees for.	
and the second s	Management System - Call Shanna Hines 216-878-8531 at Michael Gragge 216-878-8191 for support of this Application	



Project Main  Project Archive  NMS Menual Denne  Project Decements  Decements	BAP Information:				Click here to Colleges De	at =			
WMS Menual Demo Project Documents	Program:		BAP Information:						
Interpret occuments		-CVP, Detta Division							
<ul> <li>Accusions</li> </ul>	Activity/Feature:	Groundwater Monitoring							
Service Agreement	Program Mgr:	Michael P. Jackson		Project Mgr:	Lui (Nick) Zanin	evich			
<ul> <li>Add Sub Project</li> </ul>									
<ul> <li>Procurement Main</li> <li>Procurement Archive</li> </ul>	Project Information: (	Parent Project:							
	Date Created:	03/04/2015		Created By:	Satpal S (Sat) Kaba				
	Project Name:	Project Name: WMS Manual Demo							
	Project Mgr. (PM):	Satpal S (Sat) Kalsi	-	PM Office:					
	PM Delegate:	Michael Craggs		Adm. Officer:	Rosemarie Machen				
	Budget Analyst:	Type last name here	1	Prj. Sponsor:	Ann Lubas-Williams	1			
	Prj. Mgr Supervisor:	Satpal S (Sat) Kalsi		Prj. Sponsor:	Type last name here	*			
	RAX#:			Risk/Watch:	None				
	View/Modify Complex Proje View/Modify Project Decision	nt Contacts here on Document here		View/Modify Con View/Modify Proj	struction Contacts here ect Management Group	baca			

Figure 27. The home page of an agreement displaying basic information of the agreement

neral Schedule	Budget   Supplemental/Supraft   Atta	achiments Comments Completion Repo	at)	
ervice Agreem	ent (NEW):	Service R	equest Status: Not been submitted!	
b Title: *	Test WMS Manual SA			
cope of Work:	Test WMS Manual SA		0	+
Servic	e Provider (SP):	Branch/Function:	Deliverable:	
			Audeng	3
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MP-150 Environm	ental Affairs Division v = [MP-1 [x000000000	157 Environmental Monitoring Branci 💙	Data Accessment Data Accessment Environmental Monitoring	
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Figure 28. The home page of an agreement, continued

## **FBMS Screenshots**

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Applcant no.		Acct asst elem.	
Req.cost center	1400 FR03063000 RANALYSIS & DESGN	Biling element	
Req. co.code	[1400]		
Field key	808		
General fields			
General fields Bureau Specific	Standard		

Figure 29. The home page of an agreement displaying project control data

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ect morma	tion
Project Builder: Class	offication
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Proj. Def. Fix. 404379647	Parker Dam Barriers
Paspons 0	Cower Colorado Dama Project, Parker Dam
Proj.cype K Project Planning	
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General	
Characteristic Description Value	
Project Manager KEVDI MARI	GETTS
Enancial Engineer KEVDI MARI	DETTS
Directorate Sponsor LEN SORL	NG
Clent JOHN STEF	FEN
Clent Region and Office LCR, PARKE	R DAM

Figure 30. The home page of an agreement displaying project builder classification

aracteristic	c/Function	FBM	S Field/F	unction	FBMS Field Value
iation Date		Basi	c Start Da	ate	9/18/16
Completion Date		Basi	cFinish	Date	10/31/16
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W85 Elem Detal: Overview( Projec Basic Dati Bis/Start	en and view selection ent RX_4843793 a):	7.000001	Lower (	Colorado Dame Proj	ect, Parker Dam
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Figure 31. The schedule page of an agreement

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	The essential components of a network are:	
	The essential components of a network are.	
	• Activities	
	<ul> <li>Relationships between the activities</li> </ul>	
-	Paris Start/End Data	
•	Basic start/End Date	
	<ul> <li>Start and end date that encompasses subordinate activities</li> </ul>	
	Scheduling Type	
	soneduning type	
	<ul> <li>Key which specifies the scheduling type for detailed scheduling.</li> </ul>	

Figure 32. Guidance on setting up a schedule for an agreement

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Ē		1	Project Initiation & Planning	10/01/2	09/30/2	2				21,200.00 USD	REL NTUP N
Ē		Т	Develop Project Charter	10/01/20	12/31/20	10/03/20	11/07/20	11/25/20	12/30/20	2	REL YREL
Ē		T	Define Project scope and Timeline	10/01/20	12/31/20	10/03/29	11/07/20	11/25/20	12/30/20		REL VREL
Ē		Т	Define Project Team/Stakeholders	10/01/20	12/31/20	10/03/20	10/05/20	12/26/20	12/30/20		REL YREL
Ē		T	Complete Project Management Plan	10/01/20	12/31/20	10/03/20	11/07/20	11/25/20	12/30/20		REL YREL
Ē		1	RP Work Order Enhancement	10/01/2	09/30/2	20010			2010.0		REL NWBS
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		T	October-Review regions' progress	10/01/20	10/31/20	10/03/20	10/03/20	10/31/20	10/31/20		REL YREL
				and a state of the last	44.000.000	11/01/30	11/01/20	11/30/20	11/30/20		REL YREL
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		t	November-Generate the Monthly Report November-Meet with Regions-Review d	11/01/20	11/30/20	11/01/20	11/01/20	11/30/20	11/30/20		REL YREL
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Figure 33. An agreement schedule in the grid layout format

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	Review and Bralics It straing material	tong at	
	Digod-training	Name and Parate	
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Figure 34. A service agreement schedule in the Gantt chart layout format

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General data		0003 R000 B	ORRIVCO2 BOR	R Proj Plan RX	WCTR (Bruc	e Feitag)	EN		
Sustem Status	BWL.	0003 R000 B	ORRWC03 BOR	R Proj Plan R30	WCTR (Dan	e Parks-Sto)	EN		
WBC alamant	BY ADALTING DE	0003 R000 B	ORRIVCO4 BOR	R Proj Plan RX	WCTR (Duc	Le)	EN		
West center	BOBBIETS / BOOK	0003 R000 B	ORRWC05 BOI	R Proj Plan R30	WCTR (Ed A	breo)	EN		
Work Cericer	1.0 00	0003 R000 B	ORRWC06 BOI	R Proj Plan RK	WCTR (Here	y Lowery)	EN		
WORK Colorado	Colo bea duration	0003 R000 B	ORRWC07 BOR	R Proj Plan RX R Burd Rive RM	WCTR (Jenn	fer Stroth)	EN		
Calculation key	Calculate Goracion	0003 8000 8	ORRWING BOI	R Proj Plan R30	WCTR (Parat	m Randhaw)	EN		
ACONEY Type		0003 R000 B	ORRWC10 BOI	R Prot Plan RX	WCTR (Rick	Kness)	EN		
Priority	_	0003 R000 B	ORRWC11 BOR	R Prot Plan RX	WCTR (Stac	ev Donahue)	EN		
Usage		0003 R000 B	ORRWC12 BOH	R Proj Plan RX	WCTR (Stac	Link)	EN		
		0003 R000 B	ORRWC13 BOR	R Proj Plan RX	WCTR (Tam	Nguyen)	EN		
Scheduling		0003 R000 B	ORRWC14 BOR	R Proj Plan RX	WCTR (Telu	Manjrekar)	EN		

Figure 35. The budget/cost estimate page of an agreement

Change Cost Planning	: WBS Element Over	view			
i 🖓 Annual Overview 🛛 🛛	rimary Costs Activity Input				
Proj. Def. RK. 486376AT Period 2017	Parker Dam B	larriers			
Annual Values					
ELev WBS element 1 RK.4863PMAT.0000001	Cost plan 4,800,000.00	Tr P Distributed	Distributable 4,800,000.00	Planned total 4,800,000.00	Costing
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PM Tool in Excel/MS Project Screenshot

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Figure 37. The PM Tool in Excel/MS Project home page reflecting a list of all agreements

## **MS Project Screenshots**



#### Figure 38. MS Project Professional pricing information



Figure 39. Getting started screen displaying the various new features of MS Project













Requirements	
Required Processor	1 gigahertz (Ghz) or faster x86- or x64-bit processor with SSE2
Required Operating System	Windows 7 or later, Windows 10 Server, Windows Server 2012 R2, Windows Server 2008 R2, or Windows Server 2012
Required Memory	1 GB RAM (32 bit); 2 GB RAM (64 bit)
Required Hard Disk Space	3.0 GB available disk space
Required Display	1024 x 768 resolution
Graphics	Graphics hardware acceleration requires a DirectX 10 graphics card.
Multi-touch	A touch-enabled device is required to use any multi-touch functionality. However, all features and functionality are always available by using a keyboard, mouse, or other standard or accessible input device. Note that new touch features are optimized for use with Windows 8 or later.
Additional System Requirements	Internet functionality requires an Internet connection.

Figure 43. System requirements that maximizes the full potential of MS Project Professional

## **MS Project Server**



#### Figure 44. MS Project Server pricing information

	Project Online Essentials	Project Online Professional	Project Online Premium
Fully installed, up-to-date Project application		On up to 5 PCs	⊘ On up to 5 PCs
<b>Update tasks</b> Team members can update tasks from any device.	$\odot$	$\odot$	$\odot$
Submit timesheets Capture project and non-project time spent for payroll, invoicing, and other business purposes.	$\odot$	$\odot$	$\odot$
Collaborate Team members can share documents and use Skype for Business to communicate on a project.	$\odot$	$\odot$	$\odot$
SharePoint task sync Synchronize your projects with SharePoint task lists.	$\odot$	$\odot$	$\odot$

Figure 45. A comparison chart of the various MS Project products

	Project Online Essentials	Project Online Professional	Project Online Premium
Project planning and scheduling Includes familiar scheduling tools like Gantt charts and built-in customizable templates to get you started.		$\odot$	$\odot$
Reporting and business intelligence Track and monitor project health including everything from burndown charts to financials.		$\odot$	$\odot$
Publish projects to the cloud Save your projects to the cloud for ease of access across devices and seamless collaboration with your team.		$\odot$	$\odot$
Manage project resources Assign resources to project tasks and use resource engagements to request and lock in resources		Ø	0

#### Figure 46. A comparison chart of the various MS Project products, continued

	Project Online Essentials	Project Online Professional	Project Online Premium
Portfolio selection and optimization Model different portfolio scenarios to determine the best strategic path by weighing project proposals against strategic business drivers.			$\odot$
Demand management Capture and evaluate project ideas from anywhere in the organization through a standardized process.			$\odot$
Plan and manage enterprise resources View and compare how resources are used across projects to optimize assignments.			$\odot$
Out-of-the-box portfolio reports Aggregate project data to gain insights across portfolios.			$\odot$

#### Figure 47. A comparison chart of the various MS Project products, continued

## **Daptiv Screenshots**



#### Figure 48. Daptiv project request and project data page





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#### TASK MANAGEMENT

#### One step at a time

Toggle the task list to easily see critical paths and identify what tasks are impacting delivery. Edit inline and configure the table to depict only the most critical data.

Figure 50. The task management page of an agreement

#### PROJECT PLANNING

#### Don't start from scratch

Manage all project data, including task lists, resources, change requests, and more. Bidirectional integration with Microsoft Project enables teams to import data to set up projects correctly.

- Apply pre-defined templates as needed and make adjustments in the project profile
- Manage and edit timeline data using Gantt charts







#### Figure 52. A multiple project status/Health comparison chart of an agreement



Figure 53. A multiple project budget comparison chart of an agreement

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Figure 55. A resource demands/needs chart of an agreement

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Figure 56. Multiple reports in multiple forms

### Primavera



Figure 57. The various capabilities of Primavera



Figure 58. The dashboard page of an agreement



Figure 59. An example of a project creation and schedule creation page

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Figure 60. The import and export page of an agreement

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Figure 61. Displaying the ability to view resource assignments by role types

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Figure 62. Displaying the multiple forms of reports



Figure 63. Displaying the multiple Primavera unifier