

SUBJECT ENTERPRISE MAINTENANCE MANAGEMENT SYSTEM (EMMS)

MEETING DATE APRIL 18, 2019
Forwarded on the Recommendation of the President

APPROVED FOR SUBMISSION 
Santa J. Ono, President and Vice-Chancellor

DECISION REQUESTED **IT IS HEREBY REQUESTED that the Board of Governors grant BOARD 3 approval for the Enterprise Maintenance Management System, authorizing the Administration to sign a contract with the selected vendor (Planon) and approving a funding release of \$6.868 million to complete implementation and first year of sustainment.**

Capital Budget	\$6,989,000
Operating Budget	\$879,000
Schedule	Aug 2018 to Apr 2021
Funding Release	\$6,868,000
Information	
Expenses to date	\$380,573
Funding released to date	\$1,000,000

Report Date April 11, 2019

Presented By Peter Smailes, Vice-President Finance & Operations
Andrew Szeri, Provost and Vice-President Academic
Deborah Buszard, Deputy Vice-Chancellor and Principal, UBC Okanagan
Jennifer Burns, Associate Vice-President Information Technology & Chief Information Officer
John Metras, Associate Vice-President Facilities

EXECUTIVE SUMMARY

An Enterprise Maintenance Management System (EMMS) is required to enable a single unified platform to manage: assets, maintenance, building shutdown requests, service requests, inspections, fleet, inventory, planning, and scheduling for effective resource utilization. PeopleSoft HR and finance functions will be replaced with Workday, and the system decommissioned as part of the Integrated Renewal Program (IRP), which does not offer similar functionality. This creates an operational gap, and imminent need for an EMMS.

Building Operations (BOps) is the primary sponsor of this project, as an EMMS is the tool that is used to operate and maintain all core University facilities and some ancillary facilities. There are at least 10 other potential users across UBC that have been identified as future users of an EMMS. These users currently utilize spreadsheets, or other means outside of PeopleSoft to manage their assets, maintenance, and inventory operations. Since there are common requirements across UBC for these capabilities, this project is considered an enterprise project with multiple implementation phases to mitigate risks, costs, and impact. Initial implementation focus will be for BOps, Energy and Water, and Chemistry to address continuity of service concerns. Other stakeholders such as Student Housing & Hospitality Services (SHHS), Research groups, and UBC Okanagan (UBCO), Facilities Management are included in the requirements scope to ensure their needs and goals are met in a solution in future phases.

Multiple options were considered and a new EMMS is required in order to meet standard maintenance practices, achieve strategic goals, and maintain the ability to deliver services. Given the costs, risks, and operational inefficiencies the overall assessment is that maintaining PeopleSoft after Workday implementation for Building Operations and Energy & Water Services functional requirements is not a viable option.

Due to dependencies on the Integrated Renewal Project (IRP) and anticipated go-live of Workday in April 2020, this project is currently considered critical to complete by the April 1, 2020 go live date for Workday Finance and HR. The schedule has been developed to achieve these dates, with contractual commitments negotiated into the contract language with the successful vendor, Planon.

Should the implementation of Workday HR/Finance be delayed for any reason, the EMMS system could instead be integrated with PeopleSoft as an interim approach. Regardless of ERP system, PeopleSoft, Workday, or another vendor, UBC will still require the functionality from an EMMS for the reasons identified earlier.

The EMMS project received Board 2 approval in September of 2018, where the business case was accepted and the project team was authorized to proceed with the associated procurement process. The EMMS project completed the RFP process and in February of 2019 selected Planon as the preferred vendor and product for UBC. Vendor negotiations started at that time and concluded at the later part of March 2019.

Following is the project budget breakdown over the seven years:

Description	Estimated Costs							Project Totals
	Year 1 FY 17/18	Year 2 FY 18/19	Year 3 FY 19/20	Year 4 FY 20/21	Year 5 FY 21/22	Year 6 FY 22/23	Year 7 FY 23/24	
Project Costs	16,000	1,118,000	3,805,000	437,000	0	0	0	5,376,000
Project Contingency (30%)	4,800	335,400	1,141,500	131,100	0	0	0	1,612,800
Total Project Costs (with contingencies)	20,800	1,453,400	4,946,500	568,100	0	0	0	6,988,800
								Sustainment Totals
Production Costs				799,000	799,000	799,000	799,000	3,196,000
Production Contingency (10%)				79,900	79,900	79,900	79,900	319,600
Total Production Costs (with contingencies)				878,900	878,900	878,900	878,900	3,515,600
								Grand Totals
Grand TOTAL (no contingency)	16,000	1,118,000	3,805,000	1,236,000	799,000	799,000	799,000	8,572,000
Contingency	4,800	335,400	1,141,500	211,000	79,900	79,900	79,900	1,932,400
AEV (including contingency)	20,800	1,453,400	4,946,500	1,447,000	878,900	878,900	878,900	10,504,400

The Aggregate Estimated Value (AEV) over a seven-year period of time is \$10.5 million. The AEV is comprised of:

- Project implementation costs of \$7 million (including 30% contingency); and
- Sustainment costs of \$3.5 million (including 10% contingency) for a four-year duration of the initial contract.

STRATEGIC CORE AREAS SUPPORTED

- ✓ People and Places ✓ Research Excellence ✓ Transformative Learning ✓ Local / Global Engagement

DESCRIPTION & RATIONALE

The purpose of the Enterprise Maintenance Management System (EMMS) is to enable a single unified platform to manage; assets, maintenance, building shutdown requests, service requests, inspections, fleet, inventory, planning, and scheduling for effective resource utilization. A limited set of functionalities is currently being provided through PeopleSoft, and large functional gaps must be managed via other means. PeopleSoft no longer meets the needs of existing users: Building Operations (BOPs), Energy and Water Services (EWS), and of Chemistry Stores (Chemistry) and does not provide the data security UBC requires.

PeopleSoft HR and Finance functions will be replaced with Workday, which does not offer similar functionality to EMMS. The intention is to decommission completely the PeopleSoft system as part of the Integrated Renewal Program (IRP). These two factors represented an operational gap that resulted in an imminent need for an EMMS.

Apart from BOPs, EWS and Chemistry, there are at minimum 10 other groups across UBC that have been identified as potential future users of an EMMS. These users currently utilize spreadsheets, or other means outside of PeopleSoft to manage their assets, maintenance, and inventory operations.

Given there are common requirements across UBC for these capabilities, the EMMS project is being considered an enterprise project with multiple implementation phases to mitigate risks, costs, and impact. The initial implementation focus will be for BOPs, EWS and Chemistry Stores to address continuity of service concerns. Other stakeholders such as Student Housing & Hospitality Services (SHHS), Research groups, and UBC Okanagan (UBCO) Facilities Management are included in the requirements scope to ensure their needs and goals can be met with the solution in future phases.

The EMMS initiative went through Board 2 approval in September of 2018; the business case was accepted and the project team was authorized to proceed with the associated procurement process. The EMMS project went through the corresponding RFP process and in February of 2019 selected Planon as the preferred vendor and product for UBC. Vendor negotiations started at that time and concluded at the later part of March 2019.

IMPLEMENTATION APPROACH

The EMMS initiative, as part of the IRP Application Ecosystem, is a required additional component for the overall implementation of Workday and its corresponding delivery timeline. The current UBC implementation of PeopleSoft includes the HR, Finance and Payroll modules (with functionality to be transitioned to Workday), and also the modules for Asset Management, Inventory Management and Maintenance Management (which functionality is not included in Workday). These latter aspects will be covered by the EMMS initiative. As a result, when Workday goes live in April of 2020, with the subsequent retirement of PeopleSoft, those who need that functionality will no longer have a system to support their day to day needs unless EMMS is also in production.

The implementation plan for the delivery of the EMMS is based on a two-step deployment approach referred to as Stream 1 and Stream 2.

Stream 1 is aligned to the deployment timeline of the IRP initiative (April 2020). It will deliver a set of interdependent components representing only the necessary functionality and integration capability (particularly with Workday) required for the business to operate once Workday is active and PeopleSoft is no longer available. Completion of Stream 1 will require the initiation of the Planon sustainment structure within UBC and Planon. UBC sustainment resources dedicated to the Planon production support team will be educated on the product during the course of the project and participate in the corresponding deployment and stabilization period. Planon support services of the UBC production instance will also initiate at this point.

Stream 2 represents the deployment of the remaining EMMS functionality, completing outstanding functions of the modules delivered as part of Stream 1 and introducing the remaining EMMS components required by BOPs, EWS and Chemistry to achieve the scope of this project. The completion timeframe of Stream 2 is estimated to be within the first few months following the initial go-live. The scheduled target date will be set after project start with finalization of scope and the creation of the detailed implementation plan. Key milestones during the course of the project will assess corresponding progress and constraints in order to tune further delivery and activities involved and finalize the completion date.

While the implementation approach is linked to the Workday delivery schedule the EMMS initiative can be delivered independent of Workday should there be reasons for Workday to be delayed beyond the EMMS timeline. Depending on the timing of such a decision, there will be a need for adjustments to the EMMS integration plans and methods. However, the initiative will still be able to proceed to completion and deliver to its expected net benefits. The EMMS initiative is not driven by the IRP Workday HR/FIN implementation but represents a distinct business need and benefits for UBC far beyond what is available through the current solution set. Therefore, having approach options in relation to its dependencies enables the project to be successfully delivered and UBC stakeholders to meet their objectives.

BENEFITS Select benefits of proceeding with an EMMS include:

- **Improved Security:** A secure and stable maintenance management platform.
- **Improved Efficiencies:** New agile and mobile technology with greater functional depth and capabilities such as scheduling would remove waste from numerous business processes, allowing increases in value-adding activity and improving labour management – resulting in greater employee effectiveness.
- **Improved Data Analytics:** Greater in-depth visibility and understanding of asset and budget demands along with robust KPIs, reporting, and tracking capabilities would allow enhanced and evidence-based business decision-making.
- **Improved Cost Recovery:** UBC would maintain the capability to correctly and effectively manage cost recovery billings (\$6.78 million/year BOps, \$340K/year EWS) from internal customers, and prevent potential loss of revenue from external customers (\$220K BOps, \$310K/year EWS).
- **Realization of UBC Strategic Goals:** An EMMS offers greater data analytics to drive strategic decisions towards realization of goals for the University, Faculty and individual units. There is also strategic alignment to five of UBC's shaping the next century goals within the UBC Strategic Plan and within Building Operations *Asset Stewardship* pillar to move from a reactive approach of maintenance to one that is proactive, planned, and collaborative.
- **Reduced Manual Paper Data Entry:** 600 timecards are manually processed on a daily basis.
- **Reduced Maintenance Cost and Equipment Downtime:** A greater amount of time would be spent on maintenance and timely routine repairs rather than the current manual processes. These require completion and entry of paperwork, which is fraught with error and waste. Equipment downtime will decrease and the number of major repairs would be reduced as a result of the use of a planning tool and enhanced reporting capabilities.
- **Improved Coordination:** A single unified system will provide greater transparency and functionality for UBC Between units to manage assets, maintenance, fleet and inventory.
- **Improved Customer Service:** A single intuitive, transparent and user-friendly UBC solution would allow for a more comprehensive support model for users and internal customers that submit service requests. Notifications of real-time progress would also improve operations and customer satisfaction as less effort would be spent manually tracking work and reconciling invoices.

Additional benefits are described in the EMMS Business Case which is available if required.

RISKS
Financial,
Operational &
Reputational

Risk Statement	Mitigation
<p>Delivery timeline in the Business Case was set to precede the first release of IRP by 2 months (i.e. Feb 2020). This was done prior to selection of an EMMS product and confirmation of the implementation plan. It could lead to inability for the project to meet posted delivery targets or acceptable level of quality in the delivered outputs.</p>	<p>Develop a realistic implementation plan and scope with the selected product and professional services vendor and bring forward to the project steering committee for ratification and adjustment as necessary. This is reflected in the current delivery plan presented in this briefing note and supported by ITAC in the meeting of March 4, 2019.</p>
<p>Select IRP and EMMS functional plans are being questioned as more detail requirements and integration needs or limitations are being presented. Possibility for negative impact to IRP and/or EMMS plans if issues materialize late in the delivery plan.</p>	<p>Revisit functional delineation between EMMS and Workday for the areas in question through the involvement of IRP and EMMS SMEs along with external analysts (e.g. E&Y). Identify options for functional allocations (given the principle of “In Workday first”) and bring findings and recommendations to the EMMS Steering Committee for agreement and/or further escalation as required. This mitigation approach is active and has already led to key findings and decisions in the areas of Purchasing and Inventory.</p>
<p>Licensing and Professional Services costs proposed by the Vendor do not match the estimates in the original business case which could lead to unfavourable budget pressure for the project</p>	<p>Engaged a professional negotiator to ensure a best value agreement is prepared for UBC (Negotiator engaged) with results reflected in the proposed contract arrangements with Planon.</p>
<p>Alterations to the IRP delivery timeline or core platform selection leading to re-planning of the EMMS implementation plan</p>	<p>Create an EMMS implementation plan that takes advantage of the improved Maintenance Management functionality that is available without integration to an ERP first. Re-plan portions of the EMMS implementation related to Integration to access necessary data for completion of the agreed business benefit.</p>

Select major risk considerations of not proceeding with the EMMS Initiative include:

- PeopleSoft will pose an increasing risk to security of UBC personal and non-personal data as a result of dwindling support on an outdated operating version. The longer this system remains in the current unsupported state, the greater the risk to data in the system.
- Regulatory compliance risk increases over time which may impact safety, reputation, and increases the potential for fines.
- Triage and planning work for maintenance and operations of a \$52 million department with 700 staff will not exist and the department will be reactive in its daily work.

- Without an EMMS, UBC's Strategic Plan to create cohesion and collaboration, by the way of sharing equipment access, or being more sustainable by optimizing the use of resources across faculties and research groups cannot be achieved. In addition, economy of scale gains in purchasing for research groups, and transparency across units would also not be achieved.
- Inability to make informed management decisions due to lack of reporting capability and ability to view asset performance. With this type of insight, there could be extended life of assets, reduced cost of maintenance, and shortened lead time for repairs.
- Lack of data available to allow effective billing for work completed, or to support informed decisions such as the ability to optimize capital spending to address \$1.4 billion deferred maintenance backlog.
- Staff time, effort, and resources would continue to be wasted on paper or spreadsheet-based systems delivering essential but non-value adding processes.
- As UBC's research business grows it is becoming increasingly difficult to robustly manage and maintain quality inventory. A deterioration could impact the ability to draw companies and Principle Investigators (PIs) to UBC (e.g., Animal Care Services unit risks losing their status as a preferred research location).

The University requires the functionality currently provided by PeopleSoft for work order management, time sheet entry, and asset and inventory management. Either remaining with PeopleSoft or implementing EMMS will require significant effort by UBC IT.

There will be a number of projects required to support the IRP-Workday implementation that are out of scope of the IRP but still critical for successfully retrofitting other applications which support critical operational functions. All the projects and EMMS are covered under the umbrella of the Application Ecosystem Program.

COSTS The following is the Aggregate Estimated Value (AEV) to acquire a new EMMS:

Description	Estimated Costs							Project Totals
	Year 1 FY 17/18	Year 2 FY 18/19	Year 3 FY 19/20	Year 4 FY 20/21	Year 5 FY 21/22	Year 6 FY 22/23	Year 7 FY 23/24	
Project Costs	16,000	1,118,000	3,805,000	437,000	0	0	0	5,376,000
Project Contingency (30%)	4,800	335,400	1,141,500	131,100	0	0	0	1,612,800
Total Project Costs (with contingencies)	20,800	1,453,400	4,946,500	568,100	0	0	0	6,988,800
								Sustainment Totals
Production Costs				799,000	799,000	799,000	799,000	3,196,000
Production Contingency (10%)				79,900	79,900	79,900	79,900	319,600
Total Production Costs (with contingencies)				878,900	878,900	878,900	878,900	3,515,600
								Grand Totals
Grand TOTAL (no contingency)	16,000	1,118,000	3,805,000	1,236,000	799,000	799,000	799,000	8,572,000
Contingency	4,800	335,400	1,141,500	211,000	79,900	79,900	79,900	1,932,400
AEV (including contingency)	20,800	1,453,400	4,946,500	1,447,000	878,900	878,900	878,900	10,504,400

The Aggregate Estimated Value (AEV) over a 7-year period of time is \$10.5 million. The AEV is comprised of:

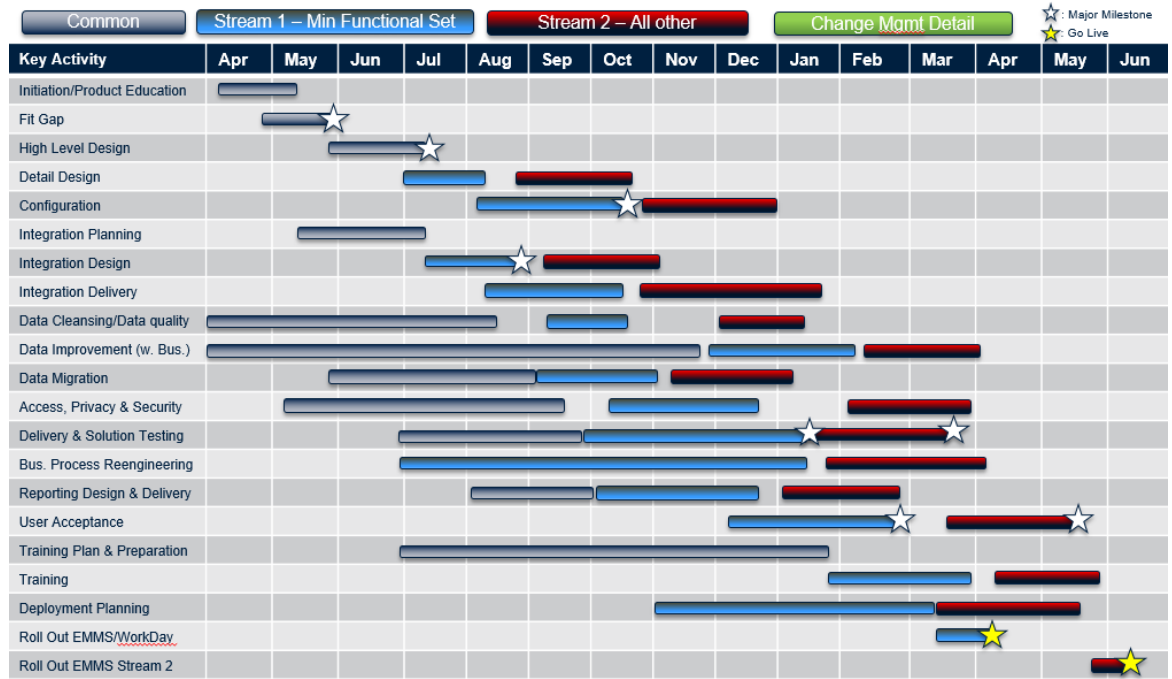
- Project implementation costs of \$7 million (including 30% contingency); and
- Sustainment costs of \$3.5 million (including 10% contingency) for a 4-year duration of the initial contract.

FINANCIAL Funding Sources, Impact on Liquidity

The EMMS project will be funded through the Integrated Renewal Program. Sufficient liquidity exists to undertake this project.

SCHEDULE
Implementation
Timeline

The resulting high-level implementation plan is shown below. Activity periods associated with Stream 1 are colour coded in blue, while activities of Stream 2 are shown in red. Activity periods that are independent of the two work streams are shown in grey. Major milestones are also shown on this plan (shown as a star symbol), representing points in the delivery of the project where, along with the completion of key deliverables, the progress of the initiative against the plan will be reassessed and the plan will be adjusted to account for lessons learned and improved understanding. Two of these milestones are the deployments of Streams 1 and 2 into Production and they are shown in yellow. One area of activity that is shown in more detail in this implementation plan are the Change Management set of activities.



CONSULTATION

Relevant Units, Internal & External Constituencies Institutional stakeholders and IT Advisory Council

Previous Report Date	September 27, 2018 Enterprise Maintenance Management System (EMMS)
Decision	<i>BOARD 1 and 2 approval be granted for implementation of an Enterprise Maintenance Management System with a funding release of \$1 million to engage project team resources to address consultation, requirements for the proposal call and data preparation prior to issuing a Request for Proposals for a vendor.</i>
Action / Follow Up	Complete requirements gathering and procurement process.