

Oakland County Department of Information Technology Project Scope and Approach

Project Name: FMO Replace BMS Phase 4

Project ID: D13147BM

Leadership Group: Land			
Department: Facilities Management		Division: Facilities Maintenance and Operations	
Project Sponsor: Stephen Foster/ Ed Joss	Date Requested: 2/16/2022	PM Customer No. 147	
Request Type: <u><i>New Development</i></u> <i>Enhancement</i> <i>Customer Support</i> <i>Planned System Maintenance or Upgrade</i>			
IT Team Name: Infrastructure and GIS		IT Team No: 1	
Project Manager/Leader: Dennis Faustich			
Account Number: 21835	Account Description: FMO BMS PH5	Customer Name:	Facilities Mgmt
Grant Funded?	Yes <u>No</u>	Mandate?	Yes <u>No</u>
		Mandate Source:	

Project Goal

To continue to implement a new Facilities Management Building Management System (BMS) for HVAC so that the current system can be modernized.

Business Objective

Improve productivity and overall response time by monitoring various HVAC alarms and systems with a new secure and high availability Building Maintenance System for all County buildings.

Major Deliverables

- Detailed Project Plan
- Updated Technical Design & Architecture Documentation
- Implementation Plan
- Upgraded Application
- Post implementation Support
- Disaster Recovery Toolkit
- Service Center Knowledge Documents

Oakland County Department of Information Technology Project Scope and Approach

Project Name: FMO Replace BMS Phase 4

Project ID: D13147BM

Approach

- Develop Detailed Project Plan with Integrator
- Update system architecture and design documentation
- Update security requirements
- Develop/Update User Documentation, Disaster Recovery Toolkit, Service Center Knowledge Documents
- Coordinate QA Application upgrade with vendor
- Support the configuration of Jace devices
- Coordinate with vendor, network, and workstation services for setting up Jace devices
- Create Implementation plan
- Acquire User Acceptance Sign off
- Conduct Change Control
- Coordinate Production Application upgrade with vendor
- Provide Post Implementation
- Retire existing Wonderware system

Research & Analysis

Gartner Research Recommendation – No Research Required

Benefits

See Return on Investment (ROI) Analysis Document

Impact

Number of Users 40

Divisions Facilities Management – Facilities Maintenance

Leadership Groups Land

**Oakland County
Department of Information Technology
Project Scope and Approach**

Project Name: FMO Replace BMS Phase 4

Project ID: D13147BM

Risk

Business Environment Medium - Project will require some changes to existing business processes.

Technical Environment Medium - Previously implemented technologies with new aspects and/or new requirements.

Assumptions

Staffing IT Staffing: resources will be available for the hours indicated per the attached project plan.

Other Staffing: additional staffing will be available as follows:

<u>Role:</u>	<u>Name</u>	<u>Hours per Day</u>
Project Sponsor:	Stephen Foster/Ed Joss	As Needed

Facilities

- All Jace locations will be within 300' of a network switch
- Power is already available for each Jace

Technical

- There are available ports on each network switch, in every building.
- Building locations within scope of this project will be on Oakland County network/fiber

Funding

- Facilities Management

Other

-

Priority

**Oakland County
Department of Information Technology
Project Scope and Approach**

Project Name: FMO Replace BMS Phase 4

Project ID: D13147BM

Constraints

-
-

Exclusions

-
-

Oakland County Department of Information Technology Project Scope and Approach

Project Name: FMO Replace BMS Phase 4

Project ID: D13147BM

PROJECT PHASE AUTHORIZATION

Phase(s):	
Total Estimated Application Services	Hours: 325
Total Estimated Technical Systems	Hours: 43
Total Estimated CLEMIS	Hours:
Total Estimated Internal Services	Hours:
IT Application Services Division Manager Approval:	Date:
IT Technical Systems Division Manager Approval:	Date:
IT CLEMIS Division Manager Approval:	Date:
IT Internal Services Division Manager Approval:	Date:
IT Management Approval:	
Approved: Yes No	Date:
Reason:	
Project Sponsor Approval:	
Title:	Date:

PROJECT SUMMARY

Authorized Development (see above)	Hours:
Previously Authorized Development	Hours:
Preliminary Estimated Development for Future Phases	Hours:
Grand Total Estimated Development	Hours: 368 Cost: \$60,720

Oakland County Department of Information Technology Project Scope and Approach

Project Name: FMO Replace BMS Phase 4

Project ID: D13147BM

PROJECT COMPLETION AUTHORIZATION

Customer Acceptance of Product:	
Title:	Date:
Project Office Review:	Date:

FMO Replace BMS Phase 4 - Size Estimate (+/- 10% to 50%)

1	Type	ID	Task Name	Estimated
2				Hours
3		000000	PROJECT MANAGEMENT	125
4	Phase	200000	DEFINE BUSINESS REQUIREMENTS	7
5	Phase	300000	DESIGN SYSTEM ARCHITECTURE	10
6	Phase	500000	DEVELOP APPLICATION	78
7	Phase	600000	IMPLEMENTATION PHASE	135
8	Phase	800000	POST IMPLEMENTATION SUPPORT	13
9				368

Oakland County -- FMO Replace BMS Phase 4

Return on Investment Analysis

Project Summary

Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Benefits/Savings:							
Tangible Benefits Subtotal:	0	0	0	0	0	0	0
Cost Avoidance Subtotal:	15,926	16,404	16,896	17,403	17,925	18,463	103,016
Costs:							
Development Services Subtotal:	60,720	0	0	0	0	0	60,720
Hardware Subtotal:	0	0	0	0	0	0	0
Software Subtotal:	0	0	0	0	0	0	0
Infrastructure Subtotal:	0	0	0	0	0	0	0
Training Subtotal:	0	0	0	0	0	0	0
Other Subtotal:	0	0	0	0	0	0	0
Annual Statistics:							
Annual Total Savings	15,926	16,404	16,896	17,403	17,925	18,463	103,016
Annual Total Costs	60,720	0	0	0	0	0	60,720
Annual Return on Investment	(44,794)	16,404	16,896	17,403	17,925	18,463	42,296
Annual Costs/Savings Ratio	381.26%	0.00%	0.00%	0.00%	0.00%	0.00%	
Project Cumulative Statistics:							
Cumulative Total Savings	15,926	32,330	49,226	66,628	84,553	103,016	103,016
Cumulative Total Costs	60,720	60,720	60,720	60,720	60,720	60,720	60,720
Cumulative Return on Investment	(44,794)	(28,390)	(11,494)	5,908	23,833	42,296	42,296
Cumulative Cost/Savings Ratio	381.26%	187.81%	123.35%	91.13%	71.81%	58.94%	58.94%
Year Positive Payback Achieved				Year 4			Year 4
State or Federal Mandate?							
Signatures:							
Benefits Reviewed By Project Sponsor	_____			Date:	_____		
Costs (including IT Resources) Reviewed By Information Technology Project Manager	_____			Date:	_____		

Oakland County -- FMO Replace BMS Phase 4

Return on Investment Analysis

Savings Detail

Benefit/Savings Description	Project Savings Category	Budget Category/Funding Source	Unit Desc	Units	Rate per Unit	Total Savings	Annual Multiplier
PCs with old software (XP) can be eliminated.	Intangible Benefit					0	
Improved reporting functionality saves Supervisor time summarizing information for both management and customers.	Cost Avoidance		ANN	1	15,926	15,926	1.030
FMO's vendor, Plex, will support Wonderware software ad XP machines that remain in the field.	Intangible Benefit					0	
Provide better customer service with improved response times to employees and citizens on Oakland County properties.	Intangible Benefit					0	
Reporting abilities would help FM determine problems in buildings (e.g., if temperature is continually an issue or very different from a similar building), which will assist with building improvement planning (windows, insulation, etc.) and/or demolition planning.	Intangible Benefit					0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	

Oakland County -- FMO Replace BMS Phase 4

Return on Investment Analysis

Savings Detail

Benefit/Savings Description	Project Savings Category	Affects Project ROI?						Potential Savings Extensions					
		Y1	Y2	Y3	Y4	Y5	Y6	Y1	Y2	Y3	Y4	Y5	Y6
PCs with old software (XP) can be eliminated.	Intangible Benefit												
Improved reporting functionality saves Supervisor time summarizing information for both management and customers.	Cost Avoidance	x	x	x	x	x	x	15,926.00	16,403.78	16,895.89	17,402.77	17,924.85	18,463
FMO's vendor, Plex, will support Wonderware software ad XP machines that remain in the field.	Intangible Benefit												
Provide better customer service with improved response times to employees and citizens on Oakland County properties.	Intangible Benefit												
Reporting abilities would help FM determine problems in buildings (e.g., if temperature is continually an issue or very different from a similar building), which will assist with building improvement planning (windows, insulation, etc.) and/or demolition planning.	Intangible Benefit												

Oakland County -- FMO Replace BMS Phase 4

Return on Investment Analysis

Savings Summary

Benefit/Savings Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Tangible Benefit:							
<i>Tangible Benefits Subtotal:</i>							
Cost Avoidance:							
Improved reporting functionality saves Supervisor time summarizing information for both management and customers.	15,926	16,404	16,896	17,403	17,925	18,463	103,016
<i>Cost Avoidance Subtotal:</i>	15,926	16,404	16,896	17,403	17,925	18,463	103,016
Intangible Benefit:							
PCs with old software (XP) can be eliminated.							
FMO's vendor, Plex, will support Wonderware software ad XP machines that remain in the field.							
Provide better customer service with improved response times to employees and citizens on Oakland County properties.							
Reporting abilities would help FM determine problems in buildings (e.g., if temperature is continually an issue or very different from a similar building), which will assist with building improvement planning (windows, insulation, etc.) and/or demolition planning.							
Savings Total:	15,926	16,404	16,896	17,403	17,925	18,463	103,016

Oakland County -- FMO Replace BMS Phase 4

Return on Investment Analysis

Cost Detail

Cost Description	Project Cost Category	Budget Category/Funding Source	Unit Desc	Units	Rate per Unit	Total Cost	Annual Multiplier	Affects Project ROI?							
								Y1	Y2	Y3	Y4	Y5	Y6		
IT Hours - New Development	Development Svcs		ANN	368	165	60,720		x							
IT Hours - System Maintenance	Development Svcs				165	0									
IT Hours - Customer Support	Development Svcs				165	0									
IT Hours - Planned Maintenance	Development Svcs				165	0									
User Hours - New Development	Development Svcs					0									
User Hours - PTNE/OT	Development Svcs					0									
Contractor Professional Services	Development Svcs					0									
PC System - Acquisition	Hardware				639	0									
PC System - Maintenance	Hardware				3,352	0									
Laptop - Acquisition	Hardware				922	0									
Laptop - Maintenance	Hardware				3,352	0									
Tablet Notebook - Acquisition	Hardware				1,069	0									
Tablet Notebook - Maintenance	Hardware				3,352	0									
File Space (100GB)	Hardware		ANN		23	0									
Package Software - Acquisition	Software					0									
Package Software - Maintenance	Software					0									
Business Objects Access	Software					0									
Term Emulation SFTW-Acquisition	Software					0									
Term Emulation SFTW-Maintenance	Software					0									
Oracle Enterprise Software Purchase - Per Processor (4 Cores) - Requires Annual Support Below	Infrastructure				42,280	0									
Oracle Enterprise Software Support - Per Processor (4 Cores)	Infrastructure				9,293	0	1.030								
SQL Server Enterprise Software Purchase - Per Processor (4 cores) - Purchased Sept 2019-Aug 2020 - Includes Support thru Aug 2022	Infrastructure				16,985	0									
SQL Server Enterprise Software Purchase - Per Processor (4 cores) - Purchased Sept 2020-Aug 2021 - Includes Support thru Aug 2022	Infrastructure				12,724	0									

Oakland County -- FMO Replace BMS Phase 4

Return on Investment Analysis

Cost Detail

Cost Description	Project Cost Category	Budget Category/Funding Source	Unit Desc	Units	Rate per Unit	Total Cost	Annual Multiplier	Affects Project ROI?						
								Y1	Y2	Y3	Y4	Y5	Y6	
SQL Server Enterprise Software Purchase - Per Processor (4 cores) - Purchased Sept 2021-Aug 2022 - Includes Support thru Aug 2022	Infrastructure				8,463	0								
SQL Server Enterprise - Support, Per Processor (4 cores) - Sept 2022 and Beyond	Infrastructure				4,261	0								
SQL Server Standard Software Purchase - Per Processor (4 cores) - Purchased Sept 2019-Aug 2020 - Includes Support thru Aug 2022	Infrastructure				4,429	0								
SQL Server Standard Software Purchase - Per Processor (4 cores) - Purchased Sept 2020-Aug 2021 - Includes Support thru Aug 2022	Infrastructure				3,317	0								
SQL Server Standard Software Purchase - Per Processor (4 cores) - Purchased Sept 2021-Aug 2022 - Includes Support thru Aug 2022	Infrastructure				2,205	0								
SQL Server - Standard Support, Per Processor (4 cores) - Sept 2022 and Beyond	Infrastructure				1,112	0								
Websphere Basic Per Processor Single/Dual Core - Includes Year 1 Maintenance	Infrastructure				3,769	0								
Websphere Basic Per Processor Single/Dual Core - Year 2 and Beyond	Infrastructure				754	0								
Websphere ND Per Processor Single/Dual Core - Includes Year 1 Maintenance	Infrastructure				14,170	0								
Websphere ND Per Processor Single/Dual Core - Year 2 and Beyond	Infrastructure				2,835	0								
SSL Certificate	Infrastructure				910	0								

Oakland County -- FMO Replace BMS Phase 4

Return on Investment Analysis

Cost Detail

Cost Description	Project Cost Category	Budget Category/Funding Source	Unit Desc	Units	Rate per Unit	Total Cost	Annual Multiplier	Affects Project ROI?							
								Y1	Y2	Y3	Y4	Y5	Y6		
Internet Access	Infrastructure				190	0									
Imperva Web Application Firewall (External Web Applications Only)	Infrastructure		ANN		500	0									
App Code Directories on Consolidated IIS Server (Virtual)	Infrastructure		ANN		446	0									
Extra Small - 2 Core 8GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = \$601 On Premise Physical Server = \$2,735	Infrastructure		ANN			0									
Small - 4 Core 16GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = \$951 On Premise Physical Server = \$3,057	Infrastructure		ANN			0									
Medium - 8 Core 32GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = \$1,702 On Premise Physical Server = \$8,715	Infrastructure		ANN			0									
Large - 16 Core 64GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = \$3,167 On Premise Physical Server = \$10,758	Infrastructure		ANN			0									
Extra Large - 40 Core 192GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = \$7,564 On Premise Physical Server = \$24,137	Infrastructure		ANN			0									

Oakland County -- FMO Replace BMS Phase 4
Return on Investment Analysis

Cost Detail

Cost Description	Project Cost Category	Potential Cost Extensions					
		Y1	Y2	Y3	Y4	Y5	Y6
IT Hours - New Development	Development Svcs	60,720.00					
IT Hours - System Maintenance	Development Svcs						
IT Hours - Customer Support	Development Svcs						
IT Hours - Planned Maintenance	Development Svcs						
User Hours - New Development	Development Svcs						
User Hours - PTNE/OT	Development Svcs						
Contractor Professional Services	Development Svcs						
PC System - Acquisition	Hardware						
PC System - Maintenance	Hardware						
Laptop - Acquisition	Hardware						
Laptop - Maintenance	Hardware						
Tablet Notebook - Acquisition	Hardware						
Tablet Notebook - Maintenance	Hardware						
File Space (100GB)	Hardware						
Package Software - Acquisition	Software						
Package Software - Maintenance	Software						
Business Objects Access	Software						
Term Emulation SFTW-Acquisition	Software						
Term Emulation SFTW-Maintenance	Software						
Oracle Enterprise Software Purchase - Per Processor (4 Cores) - Requires Annual Support Below	Infrastructure						
Oracle Enterprise Software Support - Per Processor (4 Cores)	Infrastructure						
SQL Server Enterprise Software Purchase - Per Processor (4 cores) - Purchased Sept 2019-Aug 2020 - Includes Support thru Aug 2022	Infrastructure						
SQL Server Enterprise Software Purchase - Per Processor (4 cores) - Purchased Sept 2020-Aug 2021 - Includes Support thru Aug 2022	Infrastructure						

Oakland County -- FMO Replace BMS Phase 4

Return on Investment Analysis

Cost Detail

Cost Description	Project Cost Category	Potential Cost Extensions					
		Y1	Y2	Y3	Y4	Y5	Y6
SQL Server Enterprise Software Purchase - Per Processor (4 cores) - Purchased Sept 2021-Aug 2022 - Includes Support thru Aug 2022	Infrastructure						
SQL Server Enterprise - Support, Per Processor (4 cores) - Sept 2022 and Beyond	Infrastructure						
SQL Server Standard Software Purchase - Per Processor (4 cores) - Purchased Sept 2019-Aug 2020 - Includes Support thru Aug 2022	Infrastructure						
SQL Server Standard Software Purchase - Per Processor (4 cores) - Purchased Sept 2020-Aug 2021 - Includes Support thru Aug 2022	Infrastructure						
SQL Server Standard Software Purchase - Per Processor (4 cores) - Purchased Sept 2021-Aug 2022 - Includes Support thru Aug 2022	Infrastructure						
SQL Server - Standard Support, Per Processor (4 cores) - Sept 2022 and Beyond	Infrastructure						
Websphere Basic Per Processor Single/Dual Core - Includes Year 1 Maintenance	Infrastructure						
Websphere Basic Per Processor Single/Dual Core - Year 2 and Beyond	Infrastructure						
Websphere ND Per Processor Single/Dual Core - Includes Year 1 Maintenance	Infrastructure						
Websphere ND Per Processor Single/Dual Core - Year 2 and Beyond	Infrastructure						
SSL Certificate	Infrastructure						

Oakland County -- FMO Replace BMS Phase 4

Return on Investment Analysis

Cost Detail

Cost Description	Project Cost Category	Potential Cost Extensions					
		Y1	Y2	Y3	Y4	Y5	Y6
Internet Access	Infrastructure						
Imperva Web Application Firewall (External Web Applications Only)	Infrastructure						
App Code Directories on Consolidated IIS Server (Virtual)	Infrastructure						
Extra Small - 2 Core 8GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = \$601 On Premise Physical Server = \$2,735	Infrastructure						
Small - 4 Core 16GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = \$951 On Premise Physical Server = \$3,057	Infrastructure						
Medium - 8 Core 32GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = \$1,702 On Premise Physical Server = \$8,715	Infrastructure						
Large - 16 Core 64GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = \$3,167 On Premise Physical Server = \$10,758	Infrastructure						
Extra Large - 40 Core 192GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = \$7,564 On Premise Physical Server = \$24,137	Infrastructure						

Oakland County -- FMO Replace BMS Phase 4
Return on Investment Analysis

Cost Summary

Cost Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Development Services:							
IT Hours - New Development	60,720						60,720
IT Hours - System Maintenance							
IT Hours - Customer Support							
IT Hours - Planned Maintenance							
User Hours - New Development							
User Hours - PTNE/OT							
Contractor Professional Services							
<i>Development Services Subtotal:</i>	60,720						60,720
Hardware:							
<i>Hardware Subtotal:</i>							
Software:							
<i>Software Subtotal:</i>							
Infrastructure:							
<i>Infrastructure Subtotal</i>							
Training:							
<i>Training Subtotal:</i>							
Other:							
<i>Other Subtotal:</i>							
Costs Total:	60,720						60,720

Return on Investment Analysis

Assumptions

Date	Assumption Description
01-Mar-22	Plex support costs \$200/hour. FM has negotiated for 40 hours/month of support from Plex to support Wonderware devices, for a monthly total of \$8000 (\$96,000 annually).
01-Mar-22	16 PCs remain with Wonderware software installed on them.
01-Mar-22	Plex vendor supports MicroSoft XP machines with Wonderware installed. OC Workstation services is not expected to support incidents related to these devices.
01-Mar-22	Approximately 20 hours/month of a Supervisor's time could be saved by this solution, for $20 * \$66.36 = \$1327.20/\text{month} * 12 \text{ months} = \15926.40 savings per year.