Oakland County
Department of Information Technology
Project Scope and Approach

Project Name: FM CAMS Enhancement 2023-2024   **Project ID: D13147CE**

Leadership Group: Land			
Department: Facilities Management		**Division:** Facilities Maintenance & Operations	
Project Sponsor: Ed Joss	**Date Requested:** 2/28/2022		**PM Customer No.** 147
Request Type: *__New Development__* *Enhancement* *Customer Support* *Planned System Maintenance or Upgrade*			
IT Team Name: Infrastructure and GIS		**IT Team No:** 1	
Project Manager/Leader: Dennis Faustich			

Account Number:	TBD	Account Description:	TBD		Customer Name:	TBD

Grant Funded? Yes __No__	**Mandate?** Yes __No__ **Mandate Source:**

Project Goal

To expand the use of the existing CAMS system for Facilities Management (FM) so that additional information can be standardized, collected, and reported on from a central location.

Business Objective

To develop preventative maintenance workflows in Cityworks and setup mobile apps so that FM staff can proactively maintain building assets and streamline inventory updates.

Major Deliverables
- Detailed Project Plan
- Support Preventative Maintenance requirements gathering
- Design new Preventative Maintenance workflows
- Install and Configure Cityworks Storeroom and Opx mobile applications
- Configure Preventative Maintenance workflows in Cityworks
- Complete User Acceptance Testing
- Train staff on new apps and workflows
- Disaster Recovery Toolkit updates
- Apply changes to Production
- Post Implementation Support

Project Name: FM CAMS Enhancement 2023-2024   **Project ID: D13147CE**

Approach
- Develop Detailed Project Plan
- Coordinate with Vendor performing data collection and workflow design
- Document Preventative Maintenance requirements
- Design GIS and Cityworks workflows
- Setup and Test Cityworks apps
- Develop User Acceptance Criteria
- Acquire User Acceptance Sign off
- Conduct Change Control
- Train users on new mobile apps
- Release new changes/apps into production
- Post Implementation support

Research & Analysis

Gartner Research Recommendation – Search yielded no results

Benefits

See Return on Investment (ROI) Analysis Document

Impact

Number of Users   50+

Divisions   Facilities Management

Leadership Groups   Land

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

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Project Name: FM CAMS Enhancement 2023-2024   **Project ID: D13147CE**

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:

Role:	Name	Hours per Day
Project Sponsor:	Ed Joss/Stephanie Hunt	As Needed

Facilities

- Vendor will document, design, build and perform data collection for preventative maintenance workflows

Technical

- New preventative maintenance workflows will require GIS schema changes

Funding

- Facilities Management will fund the vendor costs outlined in the ROI
- FM will not fund the OCIT labor hours for this project

Other

-

Priority

Constraints

- To implement mobile apps, Cityworks must be on v15.x or higher

Exclusions

-

Oakland County
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Project Name: FM CAMS Enhancement 2023-2024　　　　　**Project ID: D13147CE**

PROJECT PHASE AUTHORIZATION

Phase(s):		
Total Estimated Application Services	**Hours: 345**	
Total Estimated Technical Systems	**Hours:**	
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: 345**	**Cost: $56,925**

Project Name: FM CAMS Enhancement 2023-2024   **Project ID: D13147CE**

PROJECT COMPLETION AUTHORIZATION

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

FM CAMS Enhancements 2023-2024 - Size Estimate (+/- 10% to 50%)

	Type	ID	Task Name	Estimated
1				
2				Hours
3	3	000000	PROJECT MANAGEMENT	97
4	Phase	200000	DEFINE BUSINESS REQUIREMENTS	33
5	Phase	300000	DESIGN SYSTEM ARCHITECTURE	13
6	Phase	500000	DEVELOP APPLICATION	158
7	Phase	600000	IMPLEMENTATION PHASE	29
8	Phase	800000	POST IMPLEMENTATION SUPPORT	15
9				345

Oakland County -- FM CAMS Expansion 2023-2024

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:	39,840	40,637	41,450	42,279	43,124	43,987	251,316
Costs:							
Development Services Subtotal:	176,925	3,029	3,090	3,152	3,215	3,279	192,690
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	39,840	40,637	41,450	42,279	43,124	43,987	251,316
Annual Total Costs	176,925	3,029	3,090	3,152	3,215	3,279	192,690
Annual Return on Investment	(137,085)	37,607	38,360	39,127	39,909	40,707	58,625
Annual Costs/Savings Ratio	444.09%	7.45%	7.45%	7.45%	7.45%	7.45%	
Project Cumulative Statistics:							
Cumulative Total Savings	39,840	80,477	121,926	164,205	207,329	251,316	251,316
Cumulative Total Costs	176,925	179,954	183,044	186,196	189,411	192,690	192,690
Cumulative Return on Investment	(137,085)	(99,478)	(61,118)	(21,991)	17,918	58,625	58,625
Cumulative Cost/Savings Ratio	444.09%	223.61%	150.13%	113.39%	91.36%	76.67%	76.67%
Year Positive Payback Achieved					Year 5		Year 5
State or Federal Mandate?							
Signatures:							
Benefits Reviewed By Project Sponsor				Date:			
Costs (including IT Resources) Reviewed By Information Technology Project Manager				Date:			

Oakland County -- FM CAMS Expansion 2023-2024

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
Staff time saved performing quarterly stock audits	Cost Avoidance			64	60	3,840	1.020
Time saved using new preventative maintenance workflows	Cost Avoidance			600	60	36,000	1.020
						0	1.020
						0	1.020
						0	1.020
						0	
						0	
						0	
						0	
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						0	

Oakland County -- FM CAMS Expansion 2023-2024

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
Staff time saved performing quarterly stock audits	Cost Avoidance	x	x	x	x	x	x	3,840.00	3,916.80	3,995.14	4,075.04	4,156.54	4,239.67
Time saved using new preventative maintenance workflows	Cost Avoidance	x	x	x	x	x	x	36,000.00	36,720.00	37,454.40	38,203.49	38,967.56	39,746.91

Oakland County -- FM CAMS Expansion 2023-2024
Return on Investment Analysis

Savings Summary

Benefit/Savings Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Tangible Benefit:							
Tangible Benefits Subtotal:							
Cost Avoidance:							
Staff time saved performing quarterly stock audits	3,840	3,917	3,995	4,075	4,157	4,240	24,223
Time saved using new preventative maintenance workflows	36,000	36,720	37,454	38,203	38,968	39,747	227,092
Cost Avoidance Subtotal:	*39,840*	*40,637*	*41,450*	*42,279*	*43,124*	*43,987*	*251,316*
Intangible Benefit:							
Savings Total:	*39,840*	*40,637*	*41,450*	*42,279*	*43,124*	*43,987*	*251,316*

Oakland County -- FM CAMS Expansion 2023-2024

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		HR	345	165	56,925	1.020	x					
IT Hours - System Maintenance	Development Svcs				165	0	1.020						
IT Hours - Customer Support	Development Svcs		HR	10	165	1,650	1.020		x	x	x	x	x
IT Hours - Planned Maintenance	Development Svcs		HR	8	165	1,320	1.020		x	x	x	x	x
User Hours - New Development	Development Svcs					0							
User Hours - PTNE/OT	Development Svcs					0							
Contractor Professional Services	Development Svcs		EA	1	120,000	120,000		x					
PC System - Acquisition	Hardware				814	0							
PC System - Maintenance	Hardware				2,304	0							
Notebook - Acquisition	Hardware				1,223	0							
Notebook - Maintenance	Hardware				2,372	0							
Tablet Notebook - Acquisition	Hardware				2,012	0							
Tablet Notebook - Maintenance	Hardware					0							
Laserprinter - Acquisition	Hardware				1,432	0							
Laserprinter - Maintenance	Hardware				1,104	0							
Image Workstations - Acquisition	Hardware					0							
Image Workstations - Maintenance	Hardware				3,496	0							
PC Maintenance User Owned	Hardware				2,304	0							
Printer Maintenance User Owned	Hardware				1,072	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							
Server - Acquisition/Upgrade	Infrastructure				8,000	0							
Server - Maintenance	Infrastructure				360	0							
Server Sftwre - Acquisition/Upgrade	Infrastructure				335	0							
Server Sftwre - Maintenance	Infrastructure					0							
Server Rack Mount	Infrastructure				400	0							
MS SQL Server Standard Per Processor - Includes Year 1 Maintenance	Infrastructure				4,725	0							
MS SQL Server Standard Per Processor - Year 2 and Beyond	Infrastructure				946	0							

Oakland County -- FM CAMS Expansion 2023-2024

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
MS SQL Server Enterprise Per Processor - Includes Year 1 Maintenance	Infrastructure				19,693	0							
MS SQL Server Enterprise Per Processor - Year 2 and Beyond	Infrastructure				3,939	0							
Websphere Basic Per Processor Single/Dual Core - Includes Year 1 Maintenance	Infrastructure				3,506	0							
Websphere Basic Per Processor Single/Dual Core - Year 2 and Beyond	Infrastructure				701	0							
Websphere ND Per Processor Single/Dual Core - Includes Year 1 Maintenance	Infrastructure				13,180	0							
Websphere ND Per Processor Single/Dual Core - Year 2 and Beyond	Infrastructure				2,635	0							
SSL Certificate	Infrastructure				845	0							
Internet Access	Infrastructure				180	0							
Project Staff Training	Training					0							
User Training	Training					0							
App Code Directories on Consolidated IIS Server (Virtual)	Infrastructure		ANN		415	0							
Database (5 GB) on Consolidated SQL Instance Server	Infrastructure		ANN		930	0							
Database Instance (125 GB DB) on Consolidated SQL Server	Infrastructure		ANN		2,395	0							
Database SQL Maint Server	Infrastructure		ANN		834	0							
Database SQL Server Physical	Infrastructure		ANN		19,158	0							
DB Maintenance (Annual Cycle $610)	Infrastructure		ANN		610	0							
DB Maintenance (Semi-Annual Cycle $1220)	Infrastructure		ANN		1,220	0							
DB Maintenance (Semi-Annual Cycle $2440)	Infrastructure		ANN		2,440	0							
Dedicated Virtual Server	Infrastructure		ANN		4,150	0							

Oakland County -- FM CAMS Expansion 2023-2024

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
File Space (100GB)	Hardware		ANN		173	0							
Internet Bandwidth per MB	Hardware		ANN		750	0							
DB Instance Setup	Infrastructure				976	0							
DBA MS SQL Database Creation on Exisitng Instance	Infrastructure				366	0							
DBA MS SQL Installation and Instance Creation (10hrs)	Infrastructure				1,220	0							
DBA MS SQL Instance Creation on Consolidated or Existing Server (8hrs)	Infrastructure				976	0							
Server Admin App Code Virtual Directory Setup (1hr)	Infrastructure				122	0							
Server Admin Install Physical Server / Install OS (12hrs)	Infrastructure				1,464	0							
Server Admin Virtual Machine Creation (5hrs)	Infrastructure				610	0							

Oakland County -- FM CAMS Expansion 2023-2024

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	56,925.00					
IT Hours - System Maintenance	Development Svcs						
IT Hours - Customer Support	Development Svcs		1,683.00	1,716.66	1,750.99	1,786.01	1,821.73
IT Hours - Planned Maintenance	Development Svcs		1,346.40	1,373.33	1,400.79	1,428.81	1,457.39
User Hours - New Development	Development Svcs						
User Hours - PTNE/OT	Development Svcs						
Contractor Professional Services	Development Svcs	120,000.00					
PC System - Acquisition	Hardware						
PC System - Maintenance	Hardware						
Notebook - Acquisition	Hardware						
Notebook - Maintenance	Hardware						
Tablet Notebook - Acquisition	Hardware						
Tablet Notebook - Maintenance	Hardware						
Laserprinter - Acquisition	Hardware						
Laserprinter - Maintenance	Hardware						
Image Workstations - Acquisition	Hardware						
Image Workstations - Maintenance	Hardware						
PC Maintenance User Owned	Hardware						
Printer Maintenance User Owned	Hardware						
Package Software - Acquisition	Software						
Package Software - Maintenance	Software						
Business Objects Access	Software						
Term Emulation SFTW-Acquisition	Software						
Term Emulation SFTW-Maintenance	Software						
Server - Acquisition/Upgrade	Infrastructure						
Server - Maintenance	Infrastructure						
Server Sftwre - Acquisition/Upgrade	Infrastructure						
Server Sftwre - Maintenance	Infrastructure						
Server Rack Mount	Infrastructure						
MS SQL Server Standard Per Processor - Includes Year 1 Maintenance	Infrastructure						
MS SQL Server Standard Per Processor - Year 2 and Beyond	Infrastructure						

Oakland County -- FM CAMS Expansion 2023-2024

Return on Investment Analysis

Cost Detail

Cost Description	Project Cost Category	Potential Cost Extensions					
		Y1	Y2	Y3	Y4	Y5	Y6
MS SQL Server Enterprise Per Processor - Includes Year 1 Maintenance	Infrastructure						
MS SQL Server Enterprise Per Processor - Year 2 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						
Internet Access	Infrastructure						
Project Staff Training	Training						
User Training	Training						
App Code Directories on Consolidated IIS Server (Virtual)	Infrastructure						
Database (5 GB) on Consolidated SQL Instance Server	Infrastructure						
Database Instance (125 GB DB) on Consolidated SQL Server	Infrastructure						
Database SQL Maint Server	Infrastructure						
Database SQL Server Physical	Infrastructure						
DB Maintenance (Annual Cycle $610)	Infrastructure						
DB Maintenance (Semi-Annual Cycle $1220)	Infrastructure						
DB Maintenance (Semi-Annual Cycle $2440)	Infrastructure						
Dedicated Virtual Server	Infrastructure						

Oakland County -- FM CAMS Expansion 2023-2024

Return on Investment Analysis

Cost Detail

Cost Description	Project Cost Category	Potential Cost Extensions					
		Y1	Y2	Y3	Y4	Y5	Y6
File Space (100GB)	Hardware						
Internet Bandwidth per MB	Hardware						
DB Instance Setup	Infrastructure						
DBA MS SQL Database Creation on Exisitng Instance	Infrastructure						
DBA MS SQL Installation and Instance Creation (10hrs)	Infrastructure						
DBA MS SQL Instance Creation on Consolidated or Existing Server (8hrs)	Infrastructure						
Server Admin App Code Virtual Directory Setup (1hr)	Infrastructure						
Server Admin Install Physical Server / Install OS (12hrs)	Infrastructure						
Server Admin Virtual Machine Creation (5hrs)	Infrastructure						

Oakland County -- FM CAMS Expansion 2023-2024

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	56,925						56,925
IT Hours - System Maintenance							
IT Hours - Customer Support		1,683	1,717	1,751	1,786	1,822	8,758
IT Hours - Planned Maintenance		1,346	1,373	1,401	1,429	1,457	7,007
User Hours - New Development							
User Hours - PTNE/OT							
Contractor Professional Services	120,000						120,000
Development Services Subtotal:	*176,925*	*3,029*	*3,090*	*3,152*	*3,215*	*3,279*	*192,690*
Hardware:							
Hardware Subtotal:							
Software:							
Software Subtotal:							
Infrastructure:							
Infrastructure Subtotal							
Training:							
Training Subtotal:							
Other:							
Other Subtotal:							
Costs Total:	**176,925**	**3,029**	**3,090**	**3,152**	**3,215**	**3,279**	**192,690**

Oakland County -- FM CAMS Expansion 2023-2024

Return on Investment Analysis

Assumptions

Date	Assumption Description
07-Mar-22	Factilities Storeroom Staff would save 8 hours every quarter reducing time spent performing inventory audits. (8 hours /employee x 2 employees = 16 hrs /quarter x $60 (average employee hourly rate) = $960 /quarter x 4 quarters = $3,840 in total savings per year)
07-Mar-22	FMO staff would save ~600 hours annually by having a more improved preventative maintenance workflow for their building assets (50 employees saving 1 hour a month with an average hourly rate of $60/ hr = 50 hrs x $60 x 12 = $36K annual cost avoidance).
01-Jun-22	Facilities vendor will document, design and build the GIS data collection, perform field data collection and coordinate with OCIT for GIS and/or Cityworks changes.
06-Jun-22	FM is anticipating the vendor to charge $120,000 for their effort with this project.