Project Name: FM GIS Indoors Implementation Project ID: D13148II

Leadership Group:	Land											
Department: Facilitie	pject Sponsor: Ed Joss Date Requested: 3/15/22 Quest Type: New Development Enhancement Planned System Maintenance or Upgrade Team Name: Infrastructure and GIS IT Team No: 1 Diect Manager/Leader: Dennis Faustich Count 21181 Account Description: FM&O Admin Support			acilities	ties Planning and Engineering							
Project Sponsor: Ed	I Joss	Date Requested	d: 3/15/22		PM Custom	er No. 148						
Request Type: New	Development	Eni	hancement		Customer S	Support						
	Planned Syste	em Maintenance	e or Upgrade									
IT Team Name: Infra	, , , , , , , , , , , , , , , , , , , ,											
Project Manager/Le	ader: Dennis Faustio	ch										
Account 21181 Number:		FM&O Admir	n Support		Customer Name:	Facilities Mgmt						
Grant Funded?	Yes <u>No</u>		ndate? ndate Source	Yes :	No							

Project Goal

To implement an automated solution to convert CAD data to GIS data so that Facilities Management staff can easily and accurately report on department space allocations, streamline their data maintenance workflow and provide up to date GIS applications & dashboards to support building maintenance throughout the county campus.

Business Objective

To implement technologies to automate the conversion of CAD data to GIS data so that Facilities Management can easily create and accurately report out Space Allocations to departments and provide up to date GIS applications and dashboards for staff working on the county campus.

Page 1

Major Deliverables

- Business Requirement Documentation
- Standup GIS Indoors Prod Environment
- Install GIS Indoors software
- Implement and support data migration
- Complete UAT
- Contractor Professional services for data conversion
- Go-Live Preparations
- Post Implementation Support

Project Name: FM GIS Indoors Implementation Project ID: D13148II

Approach

- Develop Detailed Project Plan
- Document Business Requirements
- Standup GIS Indoors Prod environment
- Install and configure GIS Indoors software
- Coordinate and support contractor Professional Services for CAD to GIS data conversion
- Perform data migration
- Configure AGO applications & dashboards
- Acquire User Acceptance Sign off
- Conduct Change Control
- Release new changes/data into production
- Post-Implementation Support

Research & Analysis

Gartner Research Recommendation - No Results Found

Benefits

See Return on Investment (ROI) Analysis Document

<u>Impact</u>

Number of Users 65+

Divisions FM Staff & County Department Leads

Leadership Groups Land

<u>Risk</u>

Business Environment Medium – Project requires some changes to existing business

processes

Technical Environment Medium – Previously implemented technologies with new aspects

and/or new requirements.

Project Name: FM GIS Indoors Implementation Project ID: D13148II

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 As Needed

Jason Warner As Needed

FM Data/Content Editors Rob Mabe As Needed

Facilities

None

Technical

•

Funding

- FM will fund the OCIT labor hours for this project
- FM is responsible for the GIS Indoors annual license fee
- FM is responsible for any professional services to convert County CAD data to GIS data

Other

None

Priority

Constraints

GIS Indoors is compatible with Cityworks v15.6 and higher

Exclusions

•

Project Name: FM GIS Indoors Implementation Project ID: D13148II

PROJECT PH	ASE AUTHORIZATION	
Phase(s):		
Total Estimated Application Services	Hours: 382	
Total Estimated Technical Systems	Hours: 30	
Total Estimated CLEMIS	Hours:	
Total Estimated Internal Services	Hours:	
IT Application Services Division Manager App	roval:	Date:
IT Technical Systems Division Manager Appro	val:	Date:
IT CLEMIS Division Manager Approval:		Date:
IT Internal Services Division Manager Approva	ıl:	Date:
IT Management Approval:		
Approved:	Yes No	Date:
Reason:		
Project Sponsor Approval:		
Title:		Date:
PROJI	ECT SUMMARY	
Authorized Development (see above)	Hours:	
Previously Authorized Development	Hours:	
Dualization on a Fatimenta d David a manufact for Future	Dhasa Hawai	

Authorized Development (see above)	Hours:	
Previously Authorized Development	Hours:	
Preliminary Estimated Development for Future Phases	Hours:	
Grand Total Estimated Development	Hours: 412	Cost: \$67,980

Project Name: FM GIS Indoors Implementation Project ID: D13148II

PROJECT COMPLETION AUTHORIZATION

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

FM GIS Indoors Implementation - Size Estimate (+/- 10% to 50%)

1	Туре	ID	Task Name	Estimated
2				Hours
3	3	000000	PROJECT MANAGEMENT	122
4	Phase	200000	DEFINE BUSINESS REQUIREMENTS	46
5	Phase	300000	DESIGN SYSTEM ARCHITECTURE	4
6	Phase	500000	DEVELOP APPLICATION	104
7	Phase	600000	IMPLEMENTATION PHASE	99
8	Phase	800000	POST IMPLEMENTATION SUPPORT	37
9				412

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:	0	28,730	28,730	28,730	28,730	28,730	143,650
Costs:							
Development Services Subtotal:	52,140	70,775	5,775	5,775	5,775	5,775	146,015
Hardware Subtotal:	0	0	0	0	0	0	0
Software Subtotal:	20,000	20,200	20,402	20,606	20,812	21,020	123,040
Infrastructure Subtotal	0	0	0	0	0	0	0
Training Subtotal:	20,000	0	0	0	0	0	20,000
Other Subtotal:	0	0	0	0	0	0	0
Annual Statistics:							
Annual Total Savings	0	28,730	28,730	28,730	28,730	28,730	143,650
Annual Total Costs	92,140	90,975	26,177	26,381	26,587	26,795	289,055
Annual Return on Investment	(92,140)	(62,245)	2,553	2,349	2,143	1,935	(145,405)
Annual Costs/Savings Ratio	0.00%	316.66%		91.82%	92.54%	93.27%	(-,,
Project Cumulative Statistics:							
Cumulative Total Savings	0	28,730	57,460	86,190	114,920	143,650	143,650
Cumulative Total Costs	92,140	183,115	209,292	235,673	262,260	289,055	289,055
Communications Destroyee and Insurantee and	(00.440)	(454.205)	(454.000)	(4.40, 402)	(4.47.2.40)	(4.45.405)	(4.45.405)
Cumulative Return on Investment	(92,140)	(154,385)	(151,832)	(149,483)	(147,340)	(145,405)	(145,405)
Cumulative Cost/Savings Ratio	0.00%	637.37%	364.24%	273.43%	228.21%	201.22%	201.22%
Year Positive Payback Achieved							NO PAYBACK
State or Federal Mandate?							
Signatures:							
Benefits Reviewed By Project Sponsor				Date:			
Costs (including IT Resources) Reviewed By Information Technology Project Manager				Date:			
				24.0.			

As Of: 5/12/2022

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 editing GIS features in							
ArcMap	Cost Avoidance			390	34	13,260	1.000
Staff time saved updating and							
preparing Space Allocation							
documentation for departments	Cost Avoidance			350	34	11,900	1.000
Staff time saved not updating and							
configuring AGO Applications	Cost Avoidance			105	34	3,570	1.000
						0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	
						0	

Oakland County -- FM GIS Indoors Implementation Return on Investment Analysis

Savings Detail

		Af	x x <th></th>												
Benefit/Savings Description	Project Savings Category	Y1	Y2	Υ3	Υ	′ 4	Y5	Ye	6	Y1	Y2	Y3	Y4	Y5	Y6
Staff time saved editing GIS features in			į	į	Ī	T		İ	T						
ArcMap	Cost Avoidance		х	Х	х	1	Χ	Х			13,260.00	13,260.00	13,260.00	13,260.00	13,260.00
Staff time saved updating and			İ	İ	Ī	Ī		İ							
preparing Space Allocation			į		ı	ı	į	İ							
documentation for departments	Cost Avoidance		х	Х	х	ŀ	Х	Х			11,900.00	11,900.00	11,900.00	11,900.00	11,900.00
Staff time saved not updating and					İ			1							
configuring AGO Applications	Cost Avoidance		Х	Х	Х	ŀ	Χ	Х		ļ	3,570.00	3,570.00	3,570.00	3,570.00	3,570.00
					Ī	Ī									
					İ	T		į							
						T									
					i	T		İ							
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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 editing GIS features in							
ArcMap		13,260	13,260	13,260	13,260	13,260	66,300
Staff time saved updating and preparing Space		10,200	10,200	,	10,200	10,200	
Allocation documentation for departments		11,900	11,900	11,900	11,900	11,900	59,500
Staff time saved not updating and configuring		,	,		,	,	,
AGO Applications		3,570	3,570	3,570	3,570	3,570	17,850
Cost Avoidance Subtotal:		28,730	28,730	28,730	28,730	28,730	143,650
Intangible Benefit:							
Savings Total:		28,730	28,730	28,730	28,730	28,730	143,650

As Of: 5/12/2022

								Af	fect	s Pr	oiec	ct RC	OI?
		Budget Category/Funding	Unit		Rate per		Annual			Ī	.,		
Cost Description	Project Cost Category	Source	Desc	Units	Unit	Total Cost	Multiplier	Y1	Y2	Y3	Y 4	Y5	Y6
IT Development Hours - Phase 1	Development Svcs		HR	316	165	52,140		Х	!	!	1	<u> </u>	\Box
IT Development Hours - Phase 2	Development Svcs		HR	412	165	67,980			Х	İ			
Esri GIS Indoors Annual Software License	Software		ANN	1	20,000	20,000	1.010	Х	Х	Х	Х	Х	Х
Esri GIS Indoors Workshop	Training		EA	1	20,000	20,000		Х		Į .			
Contractor Professional Services	Development Svcs		EA	1	65,000	65,000			Х	İ		İ	
IT Hours - System Maintenance	Development Svcs		HR	10	165	1,650	1.000		Х	Х	Х	Х	Х
IT Hours - Customer Support	Development Svcs			25	165	4,125	1.000		Х	Х	Х	Х	Х
IT Hours - Planned Maintenance	Development Svcs				165	0	1.000			İ		į	
User Hours - New Development	Development Svcs					0				İ		İ	
User Hours - PTNE/OT	Development Svcs					0				1			
PC System - Acquisition	Hardware				814	0				Į .			
PC System - Maintenance	Hardware				2,304	0				İ		İ	
Notebook - Acquisition	Hardware				1,223	0				Ī			
Notebook - Maintenance	Hardware				2,372	0				i			
Tablet Notebook - Acquisition	Hardware				2,012	0				İ			
Tablet Notebook - Maintenance	Hardware					0				İ		Ī	
Laserprinter - Acquisition	Hardware				1,432	0				Î		1	
Laserprinter - Maintenance	Hardware				1,104	0				İ			
Image Workstations - Acquisition	Hardware					0				İ		į	
Image Workstations - Maintenance	Hardware				3,496	0				-		1	
PC Maintenance User Owned	Hardware				2,304	0				İ			
Printer Maintenance User Owned	Hardware				1,072	0				Ī		Ī	
File Space (100GB)	Hardware		ANN		173	0							
Internet Bandwidth per MB	Hardware		ANN		750	0				ĺ		1	
Package Software - Acquisition	Software					0							
Package Software - Maintenance	Software					0				İ		į	
Business Objects Access	Software					0				1		1	
Term Emulation SFTW-Acquisition	Software					0				İ			
Term Emulation SFTW-Maintenance	Software					0							
Server - Acquisition/Upgrade	Infrastructure				8,000	0				Ì		1	ĺ
Server - Maintenance	Infrastructure				360	0				1			
Server Sftwre - Acquisition/Upgrade	Infrastructure				335	0				İ		I	
Server Sftwre - Maintenance	Infrastructure					0				İ		[ĺ
Server Rack Mount	Infrastructure				400	0							

Return on Investment Analysis

								Af	fect	s Pro	oject	RO	?
		Budget Category/Funding	Unit		Rate per		Annual			İ			
Cost Description	Project Cost Category	Source	Desc	Units	Unit	Total Cost	Multiplier	Y1	Y2	Y3	Y4	Y5	Y 6
Oracle Enterprise Per Processor - Includes										İ		Ŧ	
Year 1 Maintenance	Infrastructure				21,372	0					- 1	I	
Oracle Enterprise Per Processor - Year 2													
and Beyond	Infrastructure				3,432	0					- 1	ı	
SQL Server Enterprise - Per Processor (4													
cores) - Purchased Sept 2016-Aug 2017 -											- 1	- 1	
Includes Maintenance thru Aug 2019	Infrastructure				24,533	0					I	į	
SQL Server Enterprise - Per Processor (4													
cores) - Purchased Sept 2017-Aug 2018 -										i	i	İ	
Includes Maintenance thru Aug 2019	Infrastructure				20,759	0					I	į	
SQL Server Enterprise - Per Processor (4													
cores) - Purchased Sept 2018-Aug 2019 -										į	ı	į	
Includes Maintenance thru Aug 2019	Infrastructure				16,985	0					- 1	- 1	
SQL Server Enterprise - Maintenance, Per													
Processor (4 cores) - Sept 2019 and											į	İ	
Beyond	Infrastructure				4,218	0					ı	į	
SQL Server Standard - Per Processor (4													
cores) - Purchased Sept 2016-Aug 2017 -											į	İ	
Includes Maintenance thru Aug 2019	Infrastructure				6,398	0					ı	į	
SQL Server Standard - Per Processor (4										: :		-	
cores) - Purchased Sept 2017-Aug 2018 -											ļ	- 1	
Includes Maintenance thru Aug 2019	Infrastructure				5,414	0					- 1	- 1	
SQL Server Standard - Per Processor (4													
cores) - Purchased Sept 2018-Aug 2019 -											ŀ	ļ	
Includes Maintenance thru Aug 2019	Infrastructure				4,429	0				!!	- !	ŀ	
SQL Server - Standard Maintenance, Per													
Processor (4 cores) - Sept 2019 and										•	- 1	Ì	
Beyond	Infrastructure				1,100	0					ļ	- 1	
Websphere Basic Per Processor													
Single/Dual Core - Includes Year 1										i	İ	İ	
Maintenance	Infrastructure				3,506	0					I	Ī	
Websphere Basic Per Processor													
Single/Dual Core - Year 2 and Beyond	Infrastructure				701	0				<u> </u>	_ !	_ !	
Websphere ND Per Processor Single/Dual										ĺ			
Core - Includes Year 1 Maintenance	Infrastructure				13,180	0						<u> </u>	

								Aff	fect	s Pro	iect	RO	?
		Budget Category/Funding	Unit		Rate per		Annual	i			1		
Cost Description	Project Cost Category	Source	Desc	Units	Unit	Total Cost	Multiplier	Y1	Y2	Y3	Y4	Y5	Y 6
Websphere ND Per Processor Single/Dual							-	i		i	Ī	Ŧ	
Core - Year 2 and Beyond	Infrastructure				2,635	0					- 1	-	
SSL Certificate	Infrastructure				845	0		ĺ			1		-
Internet Access	Infrastructure				180	0		i			I		-
Imperva Web Application Firewall											Ī		
(External Web Applications Only)	Infrastructure		ANN		500	0		li			ı	İ	
App Code Directories on Consolidated IIS								i			I		
Server (Virtual)	Infrastructure		ANN		415	0		li			ı	į	
Database (5 GB) on Consolidated SQL								li			Ī		
Instance Server	Infrastructure		ANN		930	0					ŀ	İ	
Database Instance (125 GB DB) on								l			I		
Consolidated SQL Server	Infrastructure		ANN		2,395	0		li			- 1	- 1	
Database SQL Maint Server	Infrastructure		ANN		834	0					1		
Database SQL Server Physical	Infrastructure		ANN		19,158	0		į		i	I		
DB Maintenance (Annual Cycle \$610)	Infrastructure		ANN		610	0		l			Ī		
DB Maintenance (Semi-Annual Cycle											Ī		
\$1220)	Infrastructure		ANN		1,220	0		li			į	ļ	
DB Maintenance (Semi-Annual Cycle											- 1		
\$2440)	Infrastructure		ANN		2,440	0		į					
Dedicated Virtual Server	Infrastructure		ANN		4,150	0					ł	ŀ	
DB Instance Setup	Infrastructure			1	976	976		Х					
DBA MS SQL Database Creation on								li			į	į	
Exisitng Instance	Infrastructure				366	0						Ĺ	
Extra Small - 2 Core 8GB RAM, 500GB											- 1		
Drive, 10 GB NIC - Cloud/Virtual = \$601											į	- 1	
On Premise Physical Server = N/A	Infrastructure		ANN										
Small - 4 Core 16GB RAM, 500GB Drive,											- 1		
10 GB NIC - Cloud/Virtual = \$951 On											- 1	ı	
Premise Physical Server = \$9,288	Infrastructure		ANN		951			Î					
Medium - 8 Core 32GB RAM, 500GB										I	Ī		_
Drive, 10 GB NIC - Cloud/Virtual = \$1,702											ļ	- [
On Premise Physical Server = \$9,751	Infrastructure		ANN										
Large - 16 Core 64GB RAM, 500GB Drive,										[[
10 GB NIC - Cloud/Virtual = \$3,167 On											ļ	- [
Premise Physical Server = \$10,446	Infrastructure		ANN								į	į	

As Of: 5/12/2022

Return on Investment Analysis

								Affe	cts Pro	ject R	OI?
		Budget Category/Funding	Unit		Rate per		Annual			i	
Cost Description	Project Cost Category	Source	Desc	Units	Unit	Total Cost	Multiplier	Y1 Y	2 Y3	Y4 Y5	Y6
Extra Large - 40 Core 160GB RAM, 500GB									1 1	1	Ī
Drive, 10 GB NIC - Cloud/Virtual = \$7,564										I	
On Premise Physical Server = \$12,906	Infrastructure		ANN							İ	
Project Staff Training	Training									İ	
User Training	Training										
										İ	
										į	
									1 1	i	

	Potential Cost Extensions								
Cost Description	Project Cost Category	Y1	Y2	Y 3	Y 4	Y5	Y6		
IT Development Hours - Phase 1	Development Svcs	52,140.00							
IT Development Hours - Phase 2	Development Svcs		67,980.00						
Esri GIS Indoors Annual Software License	Software	20,000.00	20,200.00	20,402.00	20,606.02	20,812.08	21,020.20		
Esri GIS Indoors Workshop	Training	20,000.00							
Contractor Professional Services	Development Svcs		65,000.00						
IT Hours - System Maintenance	Development Svcs		1,650.00	1,650.00	1,650.00	1,650.00	1,650.00		
IT Hours - Customer Support	Development Svcs	ľ	4,125.00	4,125.00	4,125.00	4,125.00	4,125.00		
IT Hours - Planned Maintenance	Development Svcs								
User Hours - New Development	Development Svcs								
User Hours - PTNE/OT	Development Svcs								
PC System - Acquisition	Hardware								
PC System - Maintenance	Hardware	İ							
Notebook - Acquisition	Hardware								
Notebook - Maintenance	Hardware	İ							
Tablet Notebook - Acquisition	Hardware								
Tablet Notebook - Maintenance	Hardware								
Laserprinter - Acquisition	Hardware								
Laserprinter - Maintenance	Hardware								
Image Workstations - Acquisition	Hardware	į							
Image Workstations - Maintenance	Hardware	1							
PC Maintenance User Owned	Hardware	İ							
Printer Maintenance User Owned	Hardware								
File Space (100GB)	Hardware								
Internet Bandwidth per MB	Hardware								
Package Software - Acquisition	Software								
Package Software - Maintenance	Software	İ							
Business Objects Access	Software	1							
Term Emulation SFTW-Acquisition	Software	Ĭ							
Term Emulation SFTW-Maintenance	Software								
Server - Acquisition/Upgrade	Infrastructure	į							
Server - Maintenance	Infrastructure								
Server Sftwre - Acquisition/Upgrade	Infrastructure	İ							
Server Sftwre - Maintenance	Infrastructure								
Server Rack Mount	Infrastructure	Î					_		

Return on Investment Analysis

		Potential Cost Extensions							
Cost Description	Project Cost Category	Y1	Y2	Y3	Y4	Y5	Y6		
Oracle Enterprise Per Processor - Includes			İ	į	İ				
Year 1 Maintenance	Infrastructure		•						
Oracle Enterprise Per Processor - Year 2				İ					
and Beyond	Infrastructure								
SQL Server Enterprise - Per Processor (4									
cores) - Purchased Sept 2016-Aug 2017 -			•						
Includes Maintenance thru Aug 2019	Infrastructure								
SQL Server Enterprise - Per Processor (4				!	!				
cores) - Purchased Sept 2017-Aug 2018 -									
Includes Maintenance thru Aug 2019	Infrastructure		İ						
SQL Server Enterprise - Per Processor (4				i					
cores) - Purchased Sept 2018-Aug 2019 -									
Includes Maintenance thru Aug 2019	Infrastructure								
SQL Server Enterprise - Maintenance, Per				İ					
Processor (4 cores) - Sept 2019 and				Ì					
Beyond	Infrastructure								
SQL Server Standard - Per Processor (4			:	i	ĺ				
cores) - Purchased Sept 2016-Aug 2017 -				Ì					
Includes Maintenance thru Aug 2019	Infrastructure								
SQL Server Standard - Per Processor (4				!					
cores) - Purchased Sept 2017-Aug 2018 -			İ		İ				
Includes Maintenance thru Aug 2019	Infrastructure			-					
SQL Server Standard - Per Processor (4									
cores) - Purchased Sept 2018-Aug 2019 -			•						
Includes Maintenance thru Aug 2019	Infrastructure		ļ	į	į				
SQL Server - Standard Maintenance, Per									
Processor (4 cores) - Sept 2019 and									
Beyond	Infrastructure								
Websphere Basic Per Processor		-							
Single/Dual Core - Includes Year 1				į					
Maintenance	Infrastructure			İ	İ				
Websphere Basic Per Processor									
Single/Dual Core - Year 2 and Beyond	Infrastructure								
Websphere ND Per Processor Single/Dual			!	1	<u> </u>				
Core - Includes Year 1 Maintenance	Infrastructure		i ! !		i ! !				

Return on Investment Analysis

		Potential Cost Extensions						
Cost Description	Project Cost Category	Y1	Y2	Y3	Y4	Y5	Y6	
Websphere ND Per Processor Single/Dual	i	i		i			İ	
Core - Year 2 and Beyond	Infrastructure			ļ			!	
SSL Certificate	Infrastructure			ĺ			<u>;</u>	
Internet Access	Infrastructure			İ				
Imperva Web Application Firewall								
(External Web Applications Only)	Infrastructure			•			•	
App Code Directories on Consolidated IIS				İ			İ	
Server (Virtual)	Infrastructure	ļ		!				
Database (5 GB) on Consolidated SQL								
Instance Server	Infrastructure						İ	
Database Instance (125 GB DB) on				İ				
Consolidated SQL Server	Infrastructure							
Database SQL Maint Server	Infrastructure							
Database SQL Server Physical	Infrastructure			İ			İ	
DB Maintenance (Annual Cycle \$610)	Infrastructure	į		!			!	
DB Maintenance (Semi-Annual Cycle				į				
\$1220)	Infrastructure	İ		İ			İ	
DB Maintenance (Semi-Annual Cycle							!	
\$2440)	Infrastructure						İ	
Dedicated Virtual Server	Infrastructure			1			<u> </u>	
DB Instance Setup	Infrastructure	976.00		Ĭ				
DBA MS SQL Database Creation on								
Exisitng Instance	Infrastructure	į		ĺ			•	
Extra Small - 2 Core 8GB RAM, 500GB				ĺ				
Drive, 10 GB NIC - Cloud/Virtual = \$601								
On Premise Physical Server = N/A	Infrastructure			•			•	
Small - 4 Core 16GB RAM, 500GB Drive,				İ				
10 GB NIC - Cloud/Virtual = \$951 On								
Premise Physical Server = \$9,288	Infrastructure							
Medium - 8 Core 32GB RAM, 500GB				İ			<u> </u>	
Drive, 10 GB NIC - Cloud/Virtual = \$1,702		İ		İ			İ	
On Premise Physical Server = \$9,751	Infrastructure	į		!			•	
Large - 16 Core 64GB RAM, 500GB Drive,				İ				
10 GB NIC - Cloud/Virtual = \$3,167 On		į						
Premise Physical Server = \$10,446	Infrastructure			<u> </u>			<u> </u>	

		Potential Cost Extensions								
Cost Description	Project Cost Category	Y1	Y2	Y3	Y4	Y5	Y6			
Extra Large - 40 Core 160GB RAM, 500GB										
Drive, 10 GB NIC - Cloud/Virtual = \$7,564										
On Premise Physical Server = \$12,906	Infrastructure									
Project Staff Training	Training									
User Training	Training									

Oakland County -- FM GIS Indoors Implementation Return on Investment Analysis

Cost Summary

Cost Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Development Services:							
IT Development Hours - Phase 1	52,140	0	0	0	0	0	52,140
IT Hours - System Maintenance		1,650	1,650	1,650	1,650	1,650	8,250
IT Hours - Customer Support		4,125	4,125	4,125	4,125	4,125	20,625
IT Hours - Planned Maintenance							
User Hours - New Development							
User Hours - PTNE/OT							
Contractor Professional Services		65,000					65,000
Development Services Subtotal:	52,140	70,775	5,775	5,775	5,775	5,775	146,015
Hardware:							
Hardware Subtotal:							
Software:							
Esri GIS Indoors Annual Software License	20,000	20,200	20,402	20,606	20,812	21,020	123,040
Software Subtotal:	20,000	20,200	20,402	20,606	20,812	21,020	123,040
Infrastructure:	•		,			,	
Infrastructure Subtotal							
Training:							
Esri GIS Indoors Workshop	20,000.00						20,000
Training Subtotal:	20,000						20,000
Other:							
Other Subtotal:							
Costs Total:	92,140	90,975	26,177	26,381	26,587	26,795	289,055

As Of: 5/12/2022

Return on Investment Analysis

Assumptions

0.8.1 or higher
vith Cityworks due to data collection needs (i.e. Z-level coordinates).
6 or higher
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