Oakland County
Department of Information Technology
Project Scope and Approach

Project Name: CAD MDC over the Internet   **Project ID: DF1183CM**

Leadership Group: CLEMIS		
Department: Information Technology	**Division:** CLEMIS	
Project Sponsor: Jeff Nesmith	**Date Requested:** 6/12/20	**PM Customer No.** 183
Request Type: _**New Development**_ **Enhancement** **Customer Support** **Planned System Maintenance or Upgrade**		
IT Team Name: Public Safety Applications	**IT Team No:** F	
Project Manager/Leader: Brian Smith / Deb Nolen		
Account Number: 63500 **Account Description:** CLEMIS Fund		**Customer Name:** CLEMIS
Grant Funded? Yes **No**	**Mandate?** Yes **No** **Mandate Source:**	

Project Goal

To evaluate and implement new CAD delivery methods so that CLEMIS can move away from requiring a dedicated circuit and networking equipment, options include VDI or rewriting for HTTPS usage.

Business Objective

Improve user productivity and efficiency of CLEMIS members by implementing an application that can be delivered over the internet allowing the use of mobile devices and tablets so that CLEMIS technology can evolve and stay relevant, such as to have all mapping access go out directly via the internet.

Major Deliverables
- Detailed Project Plan with WBS
- Business Requirements Documents
- Functional testing
- Implementation Plan
- Training/User Manual
- Service Level Agreement
- Disaster Recovery Toolkit
- Service Center Knowledge Documents
- Rewrite Application

Project Name: CAD MDC over the Internet   **Project ID: DF1183CM**

Approach
- Develop Detailed Project Plan
- Document system requirements
- Assess User Hardware and Software Requirements
- Conduct Tech Review
- Develop Implementation Plan
- Develop new system
- Develop User Acceptance Test Plan
- Test new system
- Acquire User Acceptance Sign off
- Conduct Change Control
- Develop User Documentation, SLA, Disaster Recovery Toolkit, Service Center Knowledge Documents
- Train users on new system
- Release new system into production

Research & Analysis

Gartner Research Recommendation

Nothing found

Benefits

See Return on Investment (ROI) Analysis Document

Impact

Number of Users   Over 5000+ users

Divisions   CLEMIS

Leadership Groups   CLEMIS

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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:

Role:	Name	Hours per Day
Project Sponsor:	Jeff Nesmith	As Needed

Facilities

-
-

Technical

-
-

Funding

-

Other

-

Priority　　TBD

Project Name: CAD MDC over the Internet   **Project ID: DF1183CM**

Constraints

-

Exclusions

-
-

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PROJECT PHASE AUTHORIZATION

Phase(s):			
Total Estimated Application Services	**Hours:**		
Total Estimated Technical Systems	**Hours:** 160		
Total Estimated CLEMIS	**Hours:** 1,329		
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:**		
Preliminary Estimated Development for Future Phases	**Hours:**		
Grand Total Estimated Development	**Hours: 1,489**	**Cost: $245,685**	

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PROJECT COMPLETION AUTHORIZATION

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

CAD MDC over the Internet - Size Estimate (+/- 10% to 50%)

	Type	ID	Task Name	Estimated Hours	Estimate Notes
3	3	000000	PROJECT MANAGEMENT	415	
4	Phase	200000	DEFINE BUSINESS REQUIREMENTS	236	
5	Phase	300000	DESIGN SYSTEM ARCHITECTURE	206	
6	Phase	500000	DEVELOP APPLICATION	506	
7	Phase	600000	IMPLEMENTATION PHASE	107	
8	Phase	800000	POST IMPLEMENTATION SUPPORT	19	
9				1,489	

Oakland County -- CAD MDC over the Internet

Date: 06/012/2020

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	0	0	0	0	0	0
Costs:							
Development Services Subtotal:	247,170	26,928	20,600	28,016	21,432	29,148	373,294
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	0	0	0	0	0	0	0
Annual Total Costs	247,170	26,928	20,600	28,016	21,432	29,148	373,294
Annual Return on Investment	(247,170)	(26,928)	(20,600)	(28,016)	(21,432)	(29,148)	(373,294)
Annual Costs/Savings Ratio	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Project Cumulative Statistics:							
Cumulative Total Savings	0	0	0	0	0	0	0
Cumulative Total Costs	247,170	274,098	294,698	322,714	344,146	373,294	373,294
Cumulative Return on Investment	(247,170)	(274,098)	(294,698)	(322,714)	(344,146)	(373,294)	(373,294)
Cumulative Cost/Savings Ratio	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
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:			

Oakland County -- CAD MDC over the Internet

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
Improve CLEMIS memeber experience by providing a web based application.	Intangible Benefit					0	
Ability to enter / fill out CAD modules from a mobile device.	Intangible Benefit					0	
Improve MDC mapping experience and capabilites by allowing all mapping access to go out directly via the Internet.	Intangible Benefit					0	
						0	
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						0	

Oakland County -- CAD MDC over the Internet

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
Improve CLEMIS memeber experience by providing a web based application.	Intangible Benefit												
Ability to enter / fill out CAD modules from a mobile device.	Intangible Benefit												
Improve MDC mapping experience and capabilites by allowing all mapping access to go out directly via the Internet.	Intangible Benefit												

Oakland County -- CAD MDC over the Internet

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:							
Cost Avoidance Subtotal:							
Intangible Benefit:							
Improve CLEMIS memeber experience by providing a web based application.							
Ability to enter / fill out CAD modules from a mobile device.							
Improve MDC mapping experience and capabilites by allowing all mapping access to go out directly via the Internet.							
Savings Total:							

Oakland County -- CAD MDC over the Internet

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	Y1	Y2	Y3	Y4	Y5	Y6
								Affects Project ROI?					
IT Hours - New Development	Development Svcs			1,498	165	247,170	1.020	x					
IT Hours - System Maintenance	Development Svcs			40	165	6,600	1.020		x	x	x	x	x
IT Hours - Customer Support	Development Svcs			80	165	13,200	1.020		x	x	x	x	x
IT Hours - Planned Maintenance	Development Svcs			40	165	6,600	1.020		x		x		x
User Hours - New Development	Development Svcs					0							
User Hours - PTNE/OT	Development Svcs					0							
Contractor Professional Services	Development Svcs					0							
PC System - Acquisition	Hardware				687	0							
PC System - Maintenance	Hardware				2,936	0							
Notebook - Acquisition	Hardware				1,115	0							
Notebook - Maintenance	Hardware				3,024	0							
Tablet Notebook - Acquisition	Hardware				1,421	0							
Tablet Notebook - Maintenance	Hardware				2,800	0							
Laserprinter - Acquisition	Hardware				1,432	0							
Laserprinter - Maintenance	Hardware				1,408	0							
PC Maintenance User Owned	Hardware				2,720	0							
Printer Maintenance User Owned	Hardware				1,264	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							
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							
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						

Oakland County -- CAD MDC over the Internet

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 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							
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				3,506	0							

Oakland County -- CAD MDC over the Internet

Date: 06/012/2020

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
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							
Imperva Web Application Firewall (External Web Applications Only)	Infrastructure		ANN		500	0							
App Code Directories on Consolidated IIS Server (Virtual)	Infrastructure		ANN		415	0							
Dedicated Virtual Server	Infrastructure		ANN		4,150	0							
Extra Small - 2 Core 8GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = $601 On Premise Physical Server = N/A	Infrastructure		ANN			0							
Small - 4 Core 16GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = $951 On Premise Physical Server = $9,288	Infrastructure		ANN			0							
Medium - 8 Core 32GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = $1,702 On Premise Physical Server = $9,751	Infrastructure		ANN			0							
Large - 16 Core 64GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = $3,167 On Premise Physical Server = $10,446	Infrastructure		ANN			0							

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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
Extra Large - 40 Core 160GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = $7,564 On Premise Physical Server = $12,906	Infrastructure		ANN			0							

Oakland County -- CAD MDC over the Internet

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	247,170.00					
IT Hours - System Maintenance	Development Svcs		6,732.00	6,866.64	7,003.97	7,144.05	7,286.93
IT Hours - Customer Support	Development Svcs		13,464.00	13,733.28	14,007.95	14,288.10	14,573.87
IT Hours - Planned Maintenance	Development Svcs		6,732.00		7,003.97		7,286.93
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						
Notebook - Acquisition	Hardware						
Notebook - Maintenance	Hardware						
Tablet Notebook - Acquisition	Hardware						
Tablet Notebook - Maintenance	Hardware						
Laserprinter - Acquisition	Hardware						
Laserprinter - Maintenance	Hardware						
PC Maintenance User Owned	Hardware						
Printer Maintenance User Owned	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						
Server - Acquisition/Upgrade	Infrastructure						
Server - Maintenance	Infrastructure						
Server Sftwre - Acquisition/Upgrade	Infrastructure						
Server Sftwre - Maintenance	Infrastructure						
Server Rack Mount	Infrastructure						
Oracle Enterprise Software Purchase - Per Processor (4 Cores) - Requires Annual Support Below	Infrastructure						
Oracle Enterprise Software Support - Per Processor (4 Cores)	Infrastructure						

Oakland County -- CAD MDC over the Internet

Return on Investment Analysis

Cost Detail

		Potential Cost Extensions					
Cost Description	Project Cost Category	Y1	Y2	Y3	Y4	Y5	Y6
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						
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						

Oakland County -- CAD MDC over the Internet

Return on Investment Analysis

Cost Detail

Cost Description	Project Cost Category	Potential Cost Extensions					
		Y1	Y2	Y3	Y4	Y5	Y6
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						
Imperva Web Application Firewall (External Web Applications Only)	Infrastructure						
App Code Directories on Consolidated IIS Server (Virtual)	Infrastructure						
Dedicated Virtual Server	Infrastructure						
Extra Small - 2 Core 8GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = $601 On Premise Physical Server = N/A	Infrastructure						
Small - 4 Core 16GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = $951 On Premise Physical Server = $9,288	Infrastructure						
Medium - 8 Core 32GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = $1,702 On Premise Physical Server = $9,751	Infrastructure						
Large - 16 Core 64GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = $3,167 On Premise Physical Server = $10,446	Infrastructure						

Oakland County -- CAD MDC over the Internet

Return on Investment Analysis

Cost Detail

Cost Description	Project Cost Category	Potential Cost Extensions					
		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						

Oakland County -- CAD MDC over the Internet

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	247,170						247,170
IT Hours - System Maintenance		6,732	6,867	7,004	7,144	7,287	35,034
IT Hours - Customer Support		13,464	13,733	14,008	14,288	14,574	70,067
IT Hours - Planned Maintenance		6,732		7,004		7,287	21,023
User Hours - New Development							
User Hours - PTNE/OT							
Contractor Professional Services							
Development Services Subtotal:	**247,170**	**26,928**	**20,600**	**28,016**	**21,432**	**29,148**	**373,294**
Hardware:							
Hardware Subtotal:							
Software:							
Software Subtotal:							
Infrastructure:							
Infrastructure Subtotal							
Training:							
Training Subtotal:							
Other:							

Oakland County -- CAD MDC over the Internet

Return on Investment Analysis

Cost Summary

Cost Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Other Subtotal:							
Costs Total:	**247,170**	**26,928**	**20,600**	**28,016**	**21,432**	**29,148**	**373,294**

REV: March 27, 2020

Assumptions

Date	Assumption Description
10-Jun-20	Assuming this project will allow MDCs to access the internet directly in order to allow all mapping access to go out directly via the Internet