Project Name: CLEMIS Citations Conversion Program Project ID: DF9183CV

Leadership Group: CLEMIS				
Department: IT		Division: CLEMIS	S	
Project Sponsor: Jeff Nesmith	Date Requeste	d: 05/28/2018	PM Custom	er No. 183
Request Type: New Development				
IT Team Name: Public Safety Application	ons	IT Team No: F		
Project Manager/Leader: Brian Smith				
Account 63500 Account Number: Description	CLEMIS Fur	nd	Customer Name:	CLEMIS
Grant Funded? No	Ma	ndate? No		
	Ма	ndate Source:		

Project Goal

To convert the CLEMIS Citations system from MS SQL to Oracle so that the CLEMIS Citation system will be on the same platform as CLEAR permitting easier and more streamlined system administration and improved data sharing among the other CLEMIS reporting applications.

Business Objective

Improve data sharing among CLEMIS reporting applications allowing for more effective and efficient reports through the use of a standardized database.

Major Deliverables

- Convert applications from MS SQL to Oracle DB
- CLEMIS global administrator maintenance module enhancements
- Data migration planning
- Data Migration script/app preparation and testing
- Data migration from MS SQL on local drives to Oracle on the CLEMIS SAN
- o Implementation Support

Approach

CLEMIS will convert this system in-house using existing programming staff and contractual services.

- The current MS SQL system will be evaluated to determine changes required for conversion to Oracle.
- Data migration will be planned and scripts/apps written and tested.
- o Build Oracle development DB and created backup/restore processes
- o Convert and test the CLEMIS Citation application from MS SQL to Oracle.
- Migrate production MS SQL DB to Oracle DB
- Implement the production Oracle CLEMIS Citations system

Project Name: CLEMIS Citations Conversion Program Project ID: DF9183CV

Research & Analysis

Gartner Research Recommendation

Research Conducted: Nothing Found

Benefits

See Return on Investment (ROI) Analysis Document

Impact

Number of Users 7,000+

Divisions CLEMIS

Leadership Groups CLEMIS

Risk

Business Environment Low - Little or no impact to existing business processes.

Technical Environment Low - Proven and previously implemented technologies.

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

• Dependent on the implementation of the second CLEMIS SAN.

Project Name: CLEMIS Citations Conversion Program Project ID: DF9183CV

Technical

None

Funding

• CLEMIS Fund

Other

• None

Priority

Constraints

• Dependent on implementation of the second CLEMIS SAN

Exclusions

Nothing new.

Project Name: CLEMIS Citations Conversion Program Project ID: DF9183CV

PROJECT PHASE AUTHORIZATION

Phase(s): All			
Total Estimated Application Services	Hours:		
Total Estimated Technical Systems	Hours:	230	
Total Estimated CLEMIS	Hours:	6,275	
Total Estimated Internal Services	Hours:		
IT Application Services Division Manager A	pproval:		Date:
IT Technical Systems Division Manager Ap	proval:		Date:
IT CLEMIS Division Manager Approval:			Date:
IT Internal Services Division Manager Appr	oval:		Date:
IT Management Approval:			
Approved:	Yes	No	Date:
Reason:			
Project Sponsor Approval:			
Title:			Date:
DR	DIECT SUMMARY	,	

Authorized Development (see above)	Hours:		
Preliminary Estimated Development for Future Phases	Hours:		
Grand Total Estimated Development	Hours: 6,506	Cost:	\$1,073,490

Project Name: CLEMIS Citations Conversion Program Project ID: DF9183CV

PROJECT COMPLETION AUTHORIZATION

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

CLEMIS Citations Conversion Program - Size Estimate (+/- 10% to 50%)

1	Туре	ID	Task Name	Estimated	Estimate Notes
2				Hours	
3	3	000000	PROJECT MANAGEMENT	1,502	
4	Phase	100000	DEVELOPMENT PROGRAM	5,004	
5				6,506	

Return on Investment Analysis

Summary Year 3 Description Year 1 Year 2 Year 4 Year 5 Year 6 Total Benefits/Savings: Tangible Benefits Subtotal: 0 0 0 Cost Avoidance Subtotal: 98,000 99,960 101,959 103,998 106,078 108,200 618,196 Costs: Development Services Subtotal: 1,073,490 16,500 9.900 16,500 9,900 16,500 1,142,790 Hardware Subtotal: 0 0 0 0 0 Software Subtotal: 0 0 0 0 0 0 Infrastructure Subtotal 0 0 0 0 0 Training Subtotal: 0 0 Other Subtotal: 0 0 0 0 0 **Annual Statistics: Annual Total Savings** 98.000 99.960 101,959 103,998 106.078 108.200 618,196 Annual Total Costs 1.073.490 16.500 9.900 16.500 9.900 16.500 1.142.790 Annual Return on Investment (975,490)83.460 92.059 87,498 96.178 91,700 (524,594)Annual Costs/Savings Ratio 1095.40% 16.51% 9.71% 15.87% 9.33% 15.25% Project Cumulative Statistics: Cumulative Total Savings 98,000 197,960 299,919 403,918 509,996 618,196 618,196 1,142,790 1,142,790 Cumulative Total Costs 1,073,490 1.089.990 1,099,890 1,116,390 1.126.290 (524,594) (524,594 Cumulative Return on Investment (975,490)(892,030)(799.971)(712,472)(616, 294)Cumulative Cost/Savings Ratio 1095.40% 550.61% 366.73% 276.39% 220.84% 184.86% 184.86% 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:

As Of: 8/30/2018

Oakland County --CLEMIS Citations Conversion Program

Return on Investment Analysis

Savings Detail

	Due la et Cauda de		1124		D-4		A
Benefit/Savings Description	Project Savings Category	Budget Category/Funding Source	Unit Desc	Units	Rate per Unit	Total Savings	Annual Multiplier
	Category	Budget Category/r unding Source	Desc	Ullits	Offic	Total Savings	Widitiplie
Cost savings by eliminating the existing dedicated servers and SQL enterprise							
licenses.	Cost Avoidance			4	24,500	98,000	1.020
Simplify and improve space	Cost Avoidance			7	24,500	90,000	1.020
management and backup/archive							
activities by being on the CLEMIS SAN							
with other CLEMIS applications.	Intangible Benefit					0	
mar carer ceeimo applicationo.	mangible Berleit						
With the application being rewritten in							
Oracle this will streamline the							
applications to work more seamlessly							
and possible improve performance.	Intangible Benefit					0	
Officer benefits include improved safety	,						
due to faster issuance of the ticket and							
less exposure to a potentially dangerous							
defendant. Information about the							
defendant can be searched							
electronically in the CLEMIS							
investigative database.	Intangible Benefit					0	
Improved system performance will allow							
improved user satisfaction. Citations is							
used by Courts to download and print							
tickets. After a citation is issued							
Citizens have the option to make online							
payments.	Intangible Benefit					0	
Increased performance and efficiency of							
the CLEMIS Citations system increases							
the safety of the roadways for both the							
officers and citizens.	Intangible Benefit					0	
omeere and ouzero.	mangible bellent					0	
						0	
						0	
						0	
						0	

Oakland County --CLEMIS Citations Conversion Program

Return on Investment Analysis

Savings Detail

	Savings Detail Affects Project ROI? Potential Savings Extensions												
	Project Savings	71	!	.311		!	!			otentiai Savi	ings Exterision	13	
Benefit/Savings Description	Category	Y1	Y2	Y 3	Y4	Y5	Y6	Y1	Y2	Y3	Y4	Y5	Y6
Cost savings by eliminating the existing													
dedicated servers and SQL enterprise			•	•	İ	į					i !		
	Cost Avoidance	Х	Х	Х	Х	Х	Х	98,000.00	99,960.00	101,959.20	103,998.38	106,078.35	108,200
Simplify and improve space			ĺ	ĺ	ĺ	İ							
management and backup/archive						ļ							
activities by being on the CLEMIS SAN			•	ļ	ļ	į							
with other CLEMIS applications.	Intangible Benefit		<u> </u>	<u> </u>	<u> </u>								
With the application being rewritten in													
Oracle this will streamline the			İ	İ	İ	•							
applications to work more seamlessly			1	ļ	1	ļ					! ! !		
	Intangible Benefit		į	į	İ	İ							
Officer benefits include improved safety	mangiolo Bolloni		i –	i –	į –	1							
due to faster issuance of the ticket and			İ	ĺ	İ	İ	•						
less exposure to a potentially dangerous						ļ							
defendant. Information about the			İ	į	İ	į							
defendant can be searched			İ	İ	İ	•							
electronically in the CLEMIS				•		ļ							
investigative database.	Intangible Benefit		İ	į	İ	į							
Improved system performance will allow	J		İ	İ	İ	!							
improved user satisfaction. Citations is			1	ļ	1	ļ					! ! !		
used by Courts to download and print			1	İ		į							
tickets. After a citation is issued			1	1	1	ļ							
Citizens have the option to make online			1	ļ	1	ļ					! !		
payments.	Intangible Benefit		<u> </u>	<u> </u>		<u> </u>							
Increased performance and efficiency of						İ							
the CLEMIS Citations system increases													
the safety of the roadways for both the				-									
officers and citizens.	Intangible Benefit												
omosio and onizono.	mangible beliefit		 	 	 	<u> </u>							
			į	į	į								
			<u> </u>	<u> </u>	<u> </u>	<u> </u>							
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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:							
3							
Tangible Benefits Subtotal:							
Cost Avoidance:							
Cost savings by eliminating the existing							
dedicated servers and SQL enterprise							
licenses.	98,000	99,960	101,959	103,998	106,078	108,200	619 10
licerises.	96,000	99,900	101,939	103,996	100,076	100,200	618,196
Cost Avoidance Subtotal:	00.000	00.000	404.050	402.000	400.070	400 000	C40 400
Cost Avoidance Subtotal:	98,000	99,960	101,959	103,998	106,078	108,200	618,196
ntangible Benefit:							
Simplify and improve space management							
and backup/archive activities by being on the							
CLEMIS SAN with other CLEMIS							
applications.							
With the application being rewritten in Oracle							
this will streamline the applications to work							
more seamlessly and possible improve							
performance. Officer benefits include improved safety due							
to faster issuance of the ticket and less							
exposure to a potentially dangerous							
defendant. Information about the defendant							
can be searched electronically in the							
CLEMIS investigative database.							

CLEMIS Citations Conversion Program

Return on Investment Analysis

Savings Summary

Benefit/Savings Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Improved system performance will allow improved user satisfaction. Citations is used by Courts to download and print tickets. After a citation is issued Citizens have the option to make online payments.							
Increased performance and efficiency of the CLEMIS Citations system increases the safety of the roadways for both the officers and citizens.							
Savings Total:	98,000	99,960	101,959	103,998	106,078	108,200	618,196

Return on Investment Analysis

		Cost Detai	<u>'</u>					Af	fects	s Pro	oiec	t RC) <u> </u> ?
	Project Cost	Budget Category/Funding	Unit		Rate per		Annual				.,		
Cost Description	Category	Source	Desc	Units	Unit	Total Cost	Multiplier	Y1	Y2	Y3	Y4	Y5	Y6
IT Hours - New Development	Development Svcs			6,506	165	1,073,490		Х				ī	
IT Hours - System Maintenance	Development Svcs			20	165	3,300			Х	Х	Х	Х	Х
IT Hours - Customer Support	Development Svcs			40	165	6,600			Х	Х	Χ	Х	Х
IT Hours - Planned Maintenance	Development Svcs			40	165	6,600			Х		Х	Ī	Х
User Hours - New Development	Development Svcs					0							
User Hours - PTNE/OT	Development Svcs					0							
Contractor Professional Services	Development Svcs					0			į	i		•	1
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			į	i		•	1
Tablet Notebook - Acquisition	Hardware				1,421	0						Ī	
Tablet Notebook - Maintenance	Hardware				2,800	0							
Laserprinter - Acquisition	Hardware				1,432	0							
Laserprinter - Maintenance	Hardware				1,408	0						j	
PC Maintenance User Owned	Hardware				2,720	0							!
Printer Maintenance User Owned	Hardware				1,264	0							
File Space (100GB)	Hardware		ANN		23	0							1
Package Software - Acquisition	Software					0							!
Package Software - Maintenance	Software					0							!
Business Objects Access	Software					0						ļ	
Term Emulation SFTW-Acquisition	Software					0							
Term Emulation SFTW-Maintenance	Software					0							!
Server - Acquisition/Upgrade	Infrastructure				8,000	0						į	!
Server - Maintenance	Infrastructure				360	0						į	
Server Sftwre - Acquisition/Upgrade	Infrastructure				335	0						. ;	ı
Server Sftwre - Maintenance	Infrastructure					0							!
Server Rack Mount	Infrastructure				400	0							!
Oracle Enterprise Per Processor -													
Includes Year 1 Maintenance	Infrastructure				21,372	0						į	.
Oracle Enterprise Per Processor - Year													. 1
2 and Beyond	Infrastructure				3,432	0							

Return on Investment Analysis

		Cost Detail						Aff	ects	Pro	iect	ROI?
	Project Cost	Budget Category/Funding	Unit		Rate per		Annual	1		Ī	,	
Cost Description	Category	Source	Desc	Units	Unit	Total Cost	Multiplier	Y1	Y2	Y3 '	۲4 Y	/5 Y6
SQL Server Enterprise - Per Processor									į	- [ŀ	
(4 cores) - Purchased Sept 2016-Aug									ļ		I	
2017 - Includes Maintenance thru Aug									į	ı	į	
2019	Infrastructure				24,533	0		li	į	- [į	
SQL Server Enterprise - Per Processor									ĺ			
(4 cores) - Purchased Sept 2017-Aug									ŀ	- 1	į	1
2018 - Includes Maintenance thru Aug									į	ļ	į	
2019	Infrastructure				20,759	0			į		- 1	
SQL Server Enterprise - Per Processor								l	Ī		i	
(4 cores) - Purchased Sept 2018-Aug									ŀ	- 1	į	1
2019 - Includes Maintenance thru Aug									į	ļ	į	
2019	Infrastructure				16,985	0			į		- 1	
SQL Server Enterprise - Maintenance,									Ī			
Per Processor (4 cores) - Sept 2019									ŀ	- 1	ĺ	
and Beyond	Infrastructure				4,218	0			į		ı	
SQL Server Standard - Per Processor									Ī			
(4 cores) - Purchased Sept 2016-Aug								li	i	i	İ	
2017 - Includes Maintenance thru Aug									ŀ	- 1	į	1
2019	Infrastructure				6,398	0			į	ļ	į	
SQL Server Standard - Per Processor									į			
(4 cores) - Purchased Sept 2017-Aug								li	İ		į	
2018 - Includes Maintenance thru Aug									ŀ	- 1	ĺ	
2019	Infrastructure				5,414	0			į	ļ	į	
SQL Server Standard - Per Processor									į			
(4 cores) - Purchased Sept 2018-Aug									İ	ĺ	į	į
2019 - Includes Maintenance thru Aug									į		- 1	
2019	Infrastructure				4,429	0			į	ı	į	
SQL Server - Standard Maintenance,									į		į	
Per Processor (4 cores) - Sept 2019								1 1	Ì		ĺ	
and Beyond	Infrastructure				1,100	0			į	- 1	ŀ	
Websphere Basic Per Processor									į	I	ŀ	
Single/Dual Core - Includes Year 1									į	- 1	į	į l
Maintenance	Infrastructure				3,506	0		Li	i			

Return on Investment Analysis

		Cost Deta						Aff	ects	Pro	ject	ROI?
	Project Cost	Budget Category/Funding	Unit		Rate per		Annual		Ì	Ì		
Cost Description	Category	Source	Desc	Units	Unit	Total Cost	Multiplier	Y1	Y2	Y3	Y4 `	Y5 Y6
Websphere Basic Per Processor											į	
Single/Dual Core - Year 2 and Beyond	Infrastructure				701	0		li	į	į	i	
Websphere ND Per Processor	IIIIIasiiuciuie				701	U				- 1		-
Single/Dual Core - Includes Year 1								li	į	į	į	
Maintenance	Infrastructure				13,180	0		li	į	į	į	
ivialiteriance	iiiiasiiuciuie				13,100	U		Hi	_i	- i	- i	
Websphere ND Per Processor									į		ĺ	
Single/Dual Core - Year 2 and Beyond	Infrastructure				2,635	0		li	ļ	į	ŀ	
SSL Certificate	Infrastructure				845	0			i			
Internet Access	Infrastructure				180	0			İ	Ī	İ	
Imperva Web Application Firewall									į			
(External Web Applications Only)	Infrastructure		ANN		500	0		li		į		
App Code Directories on Consolidated									Î	Î		
IIS Server (Virtual)	Infrastructure		ANN		415	0			İ	İ	Ì	l
Database (5 GB) on Consolidated SQL										į		
Instance Server	Infrastructure		ANN		930	0		li	i	i	i	
Database Instance (125 GB DB) on									:			
Consolidated SQL Server	Infrastructure		ANN		2,395	0			ļ			
Database SQL Maint Server	Infrastructure		ANN		834	0					Ī	
Database SQL Server Physical	Infrastructure		ANN		19,158	0			Ī			
DB Maintenance (Annual Cycle \$610)	Infrastructure		ANN		610	0			ĺ	- 1	- 1	
DB Maintenance (Semi-Annual Cycle										į	I	
\$1220)	Infrastructure		ANN		1,220	0		į	į	į		
DB Maintenance (Semi-Annual Cycle									İ	İ	Ī	l
\$2440)	Infrastructure		ANN		2,440	0			ļ			
Dedicated Virtual Server	Infrastructure		ANN		4,150	0						
DB Instance Setup	Infrastructure				976	0		į	i	į		
DBA MS SQL Database Creation on									Ī		Ī	Ī
Exisitng Instance	Infrastructure				366	0			ļ	ļ		
										T	Ţ	
Extra Small - 2 Core 8GB RAM, 500GB								li	į	İ	ĺ	İ
Drive, 10 GB NIC - Cloud/Virtual = \$601									į	ļ	ļ	
On Premise Physical Server = N/A	Infrastructure		ANN			0				į		<u> </u>

Oakland County --CLEMIS Citations Conversion Program

Return on Investment Analysis

								Aff	ects	Pro	ject	ROI?
	Project Cost	Budget Category/Funding	Unit		Rate per		Annual		I			
Cost Description	Category	Source	Desc	Units	Unit	Total Cost	Multiplier	Y1	Y2	Y3	Y4 `	Y5 Y6
								ŀ	į	ŀ	I	
Small - 4 Core 16GB RAM, 500GB									į	- 1		
Drive, 10 GB NIC - Cloud/Virtual = \$951									į	į		
On Premise Physical Server = \$9,288	Infrastructure		ANN			0		1 !	į	į	- 1	
Medium - 8 Core 32GB RAM, 500GB								li	Ī	i		
Drive, 10 GB NIC - Cloud/Virtual =								1 1	Ì	- 1	- 1	1 1
\$1,702 On Premise Physical Server =									ŀ	į	l	1 1
\$9,751	Infrastructure		ANN			0			į	- 1	- 1	- []
Large - 16 Core 64GB RAM, 500GB									İ	i	Ī	
Drive, 10 GB NIC - Cloud/Virtual =									ŀ	į	l	1 1
\$3,167 On Premise Physical Server =									ļ	- 1		
\$10,446	Infrastructure		ANN			0		1 !	į	į	- 1	
Extra Large - 40 Core 160GB RAM,									Ī	İ		
500GB Drive, 10 GB NIC - Cloud/Virtual								li	ł	ı	- 1	1
= \$7,564 On Premise Physical Server =										į		
\$12,906	Infrastructure		ANN			0			į	į	- [

Return on Investment Analysis

		Cost Detail	Pot	tential Cost	Extensions		
	Project Cost		į	ĺ	ĺ	į	
Cost Description	Category	Y1	Y2	Y3	Y4	Y5	Y6
IT Hours - New Development	Development Svcs	1,073,490.00	i			;	
IT Hours - System Maintenance	Development Svcs		3,300.00	3,300.00	3,300.00	3,300.00	3,300.00
IT Hours - Customer Support	Development Svcs		6,600.00	6,600.00	6,600.00	6,600.00	6,600.00
IT Hours - Planned Maintenance	Development Svcs		6,600.00		6,600.00		6,600.00
User Hours - New Development	Development Svcs						
User Hours - PTNE/OT	Development Svcs		ĺ				
Contractor Professional Services	Development Svcs		į			į	
PC System - Acquisition	Hardware						
PC System - Maintenance	Hardware						
Notebook - Acquisition	Hardware		ĺ				
Notebook - Maintenance	Hardware		į			į	
Tablet Notebook - Acquisition	Hardware						
Tablet Notebook - Maintenance	Hardware						
Laserprinter - Acquisition	Hardware						
Laserprinter - Maintenance	Hardware		į			:	
PC Maintenance User Owned	Hardware						
Printer Maintenance User Owned	Hardware						
File Space (100GB)	Hardware						
Package Software - Acquisition	Software		į			Ī	
Package Software - Maintenance	Software					!	
Business Objects Access	Software						
Term Emulation SFTW-Acquisition	Software		:				
Term Emulation SFTW-Maintenance	Software		į			Ī	
Server - Acquisition/Upgrade	Infrastructure						
Server - Maintenance	Infrastructure		į				
Server Sftwre - Acquisition/Upgrade	Infrastructure		:				
Server Sftwre - Maintenance	Infrastructure		i				
Server Rack Mount	Infrastructure		į			ļ	
Oracle Enterprise Per Processor -							
Includes Year 1 Maintenance	Infrastructure		İ			ļ	
Oracle Enterprise Per Processor - Year			į			į	
2 and Beyond	Infrastructure		į			ļ	

Return on Investment Analysis

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

Return on Investment Analysis

	Cost Detail Potential Cost Extensions						
	Project Cost						
Cost Description	Category	Y1	Y2	Y3	Y4	Y5	Y6
			ļ	ļ	!	!	
Websphere Basic Per Processor				i I !	i !	i ! !	ļ
Single/Dual Core - Year 2 and Beyond	Infrastructure						ļ
Websphere ND Per Processor			į		!		
Single/Dual Core - Includes Year 1							İ
Maintenance	Infrastructure			! ! !	 	! ! !	<u> </u>
Websphere ND Per Processor			İ	! ! !		! ! !	
Single/Dual Core - Year 2 and Beyond	Infrastructure						
SSL Certificate	Infrastructure		1	<u> </u>	1	<u> </u>	<u> </u>
Internet Access	Infrastructure						
Imperva Web Application Firewall	iiiiasiiuciuie		-		<u> </u>		
(External Web Applications Only)	Infrastructure						ļ
App Code Directories on Consolidated	iiiiasiiuciule				<u> </u>	1	<u> </u>
IIS Server (Virtual)	Infrastructure						İ
Database (5 GB) on Consolidated SQL	iiiiasiiuciule		-		!	!	-
Instance Server	Infrastructure		į				•
Database Instance (125 GB DB) on	iiiiasiiuciuic		i i	i		<u> </u>	<u>i</u> !
Consolidated SQL Server	Infrastructure		ļ				
Database SQL Maint Server	Infrastructure		<u> </u>		!		
Database SQL Server Physical	Infrastructure		•				<u> </u>
DB Maintenance (Annual Cycle \$610)	Infrastructure		<u> </u>	<u> </u>	<u>!</u>	!	<u> </u>
DB Maintenance (Semi-Annual Cycle			•				
\$1220)	Infrastructure						į
DB Maintenance (Semi-Annual Cycle			į				
\$2440)	Infrastructure						İ
Dedicated Virtual Server	Infrastructure		i i	1 1 1	1 !		
DB Instance Setup	Infrastructure						
DBA MS SQL Database Creation on			1				
Exisitng Instance	Infrastructure						
				İ	İ		
Extra Small - 2 Core 8GB RAM, 500GB			ļ	1 1 1	!	<u> </u>	
Drive, 10 GB NIC - Cloud/Virtual = \$601							
On Premise Physical Server = N/A	Infrastructure		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

Oakland County --CLEMIS Citations Conversion Program

Return on Investment Analysis

			Po	tential Cost	Extensions		
Cost Description	Project Cost Category	Y1	Y2	Y3	Y4	Y5	Y6
Small - 4 Core 16GB RAM, 500GB					İ	İ	
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 =				I I I			
\$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						
Extra Large - 40 Core 160GB RAM,							
500GB Drive, 10 GB NIC - Cloud/Virtual							
= \$7,564 On Premise Physical Server =				 			
\$12,906	Infrastructure						

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	1,073,490						1,073,490
IT Hours - System Maintenance		3,300	3,300	3,300	3,300	3,300	16,500
IT Hours - Customer Support		6,600	6,600	6,600	6,600	6,600	33,000
IT Hours - Planned Maintenance		6,600		6,600		6,600	19,800
User Hours - New Development							
User Hours - PTNE/OT							
Contractor Professional Services							
Development Services Subtotal:	1,073,490	16,500	9,900	16,500	9,900	16,500	1,142,790
Hardware:		,			·	ŕ	
Hardware Subtotal:							
Software:							
Software Subtotal:							
Infrastructure:							
Infrastructure Subtotal							
Training:							
Training Subtotal:							
Other:							
Other Subtotal:							
Costs Total:	1,073,490	16,500	9,900	16,500	9,900	16,500	1,142,790

As Of: 8/30/2018

Return on Investment Analysis

Date	Assumpigon Description
01-Jun-18	Assuming core work of 4,500 hours.
01-Jun-18	Using the PMO standard calculations: 20% for Project Management, 15% for Contingency, and 7% for Scope Change Management.
16-Aug-18	Assuming 2 physical servers 8 core each will no longer be needed.

REV: May 21, 2018

As Of: 8/30/2018