Oakland County
Department of Information Technology
Project Scope and Approach

Project Name: Land Address Management System (LAMS) Rewrite Project ID: D99182LM

Leadership Group: Land			
Department: Information Technology		**Division:** Application Services	
Project Sponsor: Tammi Shepherd	**Date Requested:** 06/14/2018	**PM Customer No.** 182	
Request Type:	***New Development***	***Enhancement***	***Customer Support***
	Planned System Maintenance or Upgrade		
IT Team Name: Assessing and Taxation		**IT Team No**: 9	
Project Manager/Leader: Wendy Conklin			
Account Number: 17020	**Account Description:** Application Services	**Customer Name:**	Information Technology
Grant Funded? Yes	**No**	**Mandate?**	**Yes** **No**
		Mandate Source:	

Project Goal

To re-write the front end of the Land Address Management System (LAMS) using current Oakland County systems and technologies, so that the maintenance and management of existing land and address data can be performed with increased efficiency while increased utility can be gained from the resulting standardized land and address database.

Business Objective

To provide a consistent and accurate source of information to other applications. With the use newer technology, the application will be easier to maintain, compartmentalize, increased performance and improved automated processes that are needed for Oakland County Departments and Local Municipalities.

Major Deliverables

- Detailed Project Plan
- Functional Requirements Specifications document
- Technical Architecture Diagram
- Technical Design
- Testing
- Implementation Plan
- Training Plan
- User Acceptance Test Plan
- Implementation Plan
- Training/User Manual(s)
- Application Code

- Service Level Agreement
- Disaster Recovery Toolkit & Service Center Knowledge Documents
- New application
- Retirement of existing application

Approach

- Develop Detailed Project Plan
- Review current business process and conduct needs assessment with customer, ensuring current manual processes are refined and automated.
- Document system requirements
- Determine and document system architecture and diagram
- Assess User Hardware and Software Requirements
- Conduct Tech Review
- Order hardware and software if needed
- 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

Research Conducted – Nothing Found.

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Benefits

See Return on Investment (ROI) Analysis Document

Impact

Number of Users >400

Divisions Oakland County Information Technology, Treasurer, Equalization, Road Commission, Register of Deeds, Water Resource Center, Planning, CLEMIS & Local Municipalities

Leadership Groups

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 project plan. Equalization Staffing: clerical and appraiser staff will be available as needed.

Role:	Name	Hours per Day
Project Sponsor:	Tammi Shepherd	As needed

Facilities

- NA
-

Project Name: Land Address Management System (LAMS) Rewrite Project ID: D99182LM

Technical

- Current external interfaces
- The rewrite will focus on the front-end, with changes to the back-end of the application only occurring when necessary for the front end changes.

Funding

- Information Technology

Other

-

Priority

- TBD

Constraints

-
-

Exclusions

- There are opportunities to integrate LAMS with GIS, but those integrations will likely not be part of this initial rewrite, unless the business requirements phase of the detailed project plan determine otherwise.
-

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Project Scope and Approach

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PROJECT PHASE AUTHORIZATION

Phase(s):	
Total Estimated Application Services	**Hours: 3028**
Total Estimated Technical Systems	**Hours: 38**
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: 3066**	
Preliminary Estimated Development for Future Phases	**Hours:**	
Grand Total Estimated Development	**Hours: 3066**	**Cost: $505,890**

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PROJECT COMPLETION AUTHORIZATION

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

Land Address Management System (LAMS) Rewrite - Size Estimate (+/- 10% to 50%)

	Type	ID	Task Name	Estimated	Estimate Notes
2				Hours	
3	**3**	**000000**	**PROJECT MANAGEMENT**	**649**	
4	**Phase**	**200000**	**DEFINE BUSINESS REQUIREMENTS**	**127**	
5	**Phase**	**300000**	**DESIGN SYSTEM ARCHITECTURE**	**64**	
6	**Phase**	**500000**	**DEVELOP APPLICATION**	**2,106**	
7	**Phase**	**600000**	**IMPLEMENTATION PHASE**	**95**	
8	**Phase**	**080000**	**POST IMPLEMENTATION SUPPORT**	**25**	
9				3,066	

Oakland County -- Land Address Management System (LAMS) Rewrite

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:	13,200	13,464	13,733	14,008	14,288	14,574	83,267
Costs:							
Development Services Subtotal:	505,890	0	0	0	0	0	505,890
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	13,200	13,464	13,733	14,008	14,288	14,574	83,267
Annual Total Costs	505,890	0	0	0	0	0	505,890
Annual Return on Investment	(492,690)	13,464	13,733	14,008	14,288	14,574	(422,623)
Annual Costs/Savings Ratio	3832.50%	0.00%	0.00%	0.00%	0.00%	0.00%	
Project Cumulative Statistics:							
Cumulative Total Savings	13,200	26,664	40,397	54,405	68,693	83,267	83,267
Cumulative Total Costs	505,890	505,890	505,890	505,890	505,890	505,890	505,890
Cumulative Return on Investment	(492,690)	(479,226)	(465,493)	(451,485)	(437,197)	(422,623)	(422,623)
Cumulative Cost/Savings Ratio	3832.50%	1897.28%	1252.29%	929.86%	736.45%	607.55%	607.55%
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 -- Land Address Management System (LAMS) Rewrite

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
Savings on unplanned maintenance per year	Cost Avoidance		ANN	70	165	11,550	1.020
Savings for customer support per year (due to older technology)	Cost Avoidance		ANN	10	165	1,650	1.020
Updated technology would benefit other application projects requiring automation and workflow processes to eliminate manual effort and time savings.	Intangible Benefit					0	
Older technology nearing end of life and extensive use of the system requires updates; a rewrite would eliminate performance issues.	Intangible Benefit					0	
Updating the user store brings the LAMS appliction in line with other IT standards.	Intangible Benefit					0	
						0	
						0	
						0	

Oakland County -- Land Address Management System (LAMS) Rewrite

Return on Investment Analysis

Savings Detail

Benefit/Savings Description	Project Savings Category	Affects Project ROI? Y1	Y2	Y3	Y4	Y5	Y6	Potential Savings Extensions Y1	Y2	Y3	Y4	Y5	Y6
Savings on unplanned maintenance per year	Cost Avoidance	x	x	x	x	x	x	11,550.00	11,781.00	12,016.62	12,256.95	12,502.09	12,752
Savings for customer support per year (due to older technology)	Cost Avoidance	x	x	x	x	x	x	1,650.00	1,683.00	1,716.66	1,750.99	1,786.01	1,822
Updated technology would benefit other application projects requiring automation and workflow processes to eliminate manual effort and time savings.	Intangible Benefit												
Older technology nearing end of life and extensive use of the system requires updates; a rewrite would eliminate performance issues.	Intangible Benefit												
Updating the user store brings the LAMS appliction in line with other IT standards.	Intangible Benefit												

Oakland County -- Land Address Management System (LAMS) Rewrite

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:							
Savings on unplanned maintenance per year	11,550	11,781	12,017	12,257	12,502	12,752	72,859
Savings for customer support per year (due to older technology)	1,650	1,683	1,717	1,751	1,786	1,822	10,408
Cost Avoidance Subtotal:	***13,200***	***13,464***	***13,733***	***14,008***	***14,288***	***14,574***	***83,267***
Intangible Benefit:							
Updated technology would benefit other application projects requiring automation and workflow processes to eliminate manual effort and time savings.							
Older technology nearing end of life and extensive use of the system requires updates; a rewrite would eliminate performance issues.							
Updating the user store brings the LAMS appliction in line with other IT standards.							
Savings Total:	***13,200***	***13,464***	***13,733***	***14,008***	***14,288***	***14,574***	***83,267***

Oakland County -- Land Address Management System (LAMS) Rewrite

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			3,066	165	505,890		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				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							
File Space (100GB)	Hardware		ANN		173	0							
Internet Bandwidth per MB	Hardware		ANN		750	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 Per Processor - Includes Year 1 Maintenance	Infrastructure				21,372	0							
Oracle Enterprise Per Processor - Year 2 and Beyond	Infrastructure				3,432	0							

Oakland County -- Land Address Management System (LAMS) Rewrite

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 - Per Processor (4 cores) - Purchased Sept 2016-Aug 2017 - Includes Maintenance thru Aug 2019	Infrastructure				24,533	0							
SQL Server Enterprise - Per Processor (4 cores) - Purchased Sept 2017-Aug 2018 - Includes Maintenance thru Aug 2019	Infrastructure				20,759	0							
SQL Server Enterprise - Per Processor (4 cores) - Purchased Sept 2018-Aug 2019 - Includes Maintenance thru Aug 2019	Infrastructure				16,985	0							
SQL Server Enterprise - Maintenance, Per Processor (4 cores) - Sept 2019 and Beyond	Infrastructure				4,218	0							
SQL Server Standard - Per Processor (4 cores) - Purchased Sept 2016-Aug 2017 - Includes Maintenance thru Aug 2019	Infrastructure				6,398	0							
SQL Server Standard - Per Processor (4 cores) - Purchased Sept 2017-Aug 2018 - Includes Maintenance thru Aug 2019	Infrastructure				5,414	0							
SQL Server Standard - Per Processor (4 cores) - Purchased Sept 2018-Aug 2019 - Includes Maintenance thru Aug 2019	Infrastructure				4,429	0							
SQL Server - Standard Maintenance, Per Processor (4 cores) - Sept 2019 and Beyond	Infrastructure				1,100	0							
Websphere Basic Per Processor Single/Dual Core - Includes Year 1 Maintenance	Infrastructure				3,506	0							

Oakland County -- Land Address Management System (LAMS) Rewrite

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							
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							
DB Instance Setup	Infrastructure				976	0							
DBA MS SQL Database Creation on Exisitng Instance	Infrastructure				366	0							
Extra Small - 2 Core 8GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = $601 On Premise Physical Server = N/A	Infrastructure		ANN			0							

Oakland County -- Land Address Management System (LAMS) Rewrite

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
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							
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 -- Land Address Management System (LAMS) Rewrite

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	505,890.00					
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						
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						
File Space (100GB)	Hardware						
Internet Bandwidth per MB	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 Per Processor - Includes Year 1 Maintenance	Infrastructure						
Oracle Enterprise Per Processor - Year 2 and Beyond	Infrastructure						

Oakland County -- Land Address Management System (LAMS) Rewrite

Return on Investment Analysis

Cost Detail

Cost Description	Project Cost Category	Potential Cost Extensions					
		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 (4 cores) - Purchased Sept 2018-Aug 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						
SQL Server - Standard Maintenance, Per Processor (4 cores) - Sept 2019 and Beyond	Infrastructure						
Websphere Basic Per Processor Single/Dual Core - Includes Year 1 Maintenance	Infrastructure						

Oakland County -- Land Address Management System (LAMS) Rewrite

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						
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						
DB Instance Setup	Infrastructure						
DBA MS SQL Database Creation on Exisitng Instance	Infrastructure						
Extra Small - 2 Core 8GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = $601 On Premise Physical Server = N/A	Infrastructure						

Oakland County -- Land Address Management System (LAMS) Rewrite

Return on Investment Analysis

Cost Detail

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

Oakland County -- Land Address Management System (LAMS) Rewrite

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	505,890						505,890
IT Hours - System Maintenance							
IT Hours - Customer Support							
IT Hours - Planned Maintenance							
User Hours - New Development							
User Hours - PTNE/OT							
Contractor Professional Services							
Development Services Subtotal:	***505,890***						***505,890***
Hardware:							
Hardware Subtotal:							
Software:							
Software Subtotal:							
Infrastructure:							
Infrastructure Subtotal							
Training:							
Training Subtotal:							
Other:							
Other Subtotal:							
Costs Total:	***505,890***						***505,890***

Oakland County -- Land Address Management System (LAMS) Rewrite

Return on Investment Analysis

Assumptions

Date	Assumption Description
05-Jun-18	This is a rewrite of the LAMS front end. It does not include making any changes to the Trillium address validiation service(s) or the back end of the LAMS database.