

Oakland County Department of Information Technology Project Scope and Approach

Project Name: FM CAMS Expansion

Project ID: D10147CE

Leadership Group: Land					
Department: Facilities Management			Division: Facilities Maintenance and Operations		
Project Sponsor: Art Holdsworth / Penny Knope / Jason Warner		Date Requested: 2/1/18		PM Customer No. 147	
Request Type:					
<i>New Development</i>		<i>X</i>		<i>Enhancement</i>	
<i>Planned System Maintenance or Upgrade</i>					
IT Team Name: Infrastructure and GIS			IT Team No: 1		
Project Manager/Leader: Mike Dagle					
Account Number:	75503	Account Description:	FM&O Development	Customer Name:	Facilities Mgmt
Grant Funded?	Yes	<u>No</u>	Mandate?	Yes	<u>No</u>
			Mandate Source:		

Project Goal

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

Business Objective

To improve staff and project reporting to ensure work is correctly allocated, completed on time and within budget. To create a long-term data management strategy to ensure FM data is created and edited with established and documented workflows.

To add additional FM assets into CAMS so that they can be spatially located and tracked in a central location with a standardized data model, providing opportunity for improved reporting and proactive maintenance scheduling.

Add inspection templates to CAMS for FM staff to observe the condition of assets and track information about simple repairs.

To automate time reporting to improve efficiency and accuracy.

Major Deliverables

- Create and document data management strategy
 - Create strategy for maintaining campus utilities
- Create Data models for the following layers:
 - Sidewalks
 - Parking lots
 - Roofing
 - Exterior building signs
 - Fiber

Oakland County

Department of Information Technology

Project Scope and Approach

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Project ID:D10147CE

- Electric
- Gas
- Create data collection application(s)
- Create CAMS Crystal Reports
- Create Inspection templates
- Train staff on new systems and new CAMS work-flows
- Disaster Recovery Toolkit

Approach

- Develop Detailed Project Plan
- Work with customer to create and document data management strategy and workflows
- Work with customer to develop and document data model for new data layers
- Develop data conversion plan for impacted layers
- Perform and QA data conversion
- Develop data collection plan for impacted layers
- Provide data collection mechanism (application)
- Develop Implementation Plan
- Design new and enhance existing reports for CAMS data
- Gather requirements for inspection templates
- Create inspection templates
- Develop User Acceptance Criteria
- Acquire User Acceptance Sign off
- Conduct Change Control
- Develop User Documentation
- Train users on new system and new work flows
- Release new changes/data into production

Research & Analysis

Gartner Research Recommendation

For application leaders seeking improved customer relationship management and customer experience through improved field service management: Use our assessment of the six categories of FSM functionality to inform your decisions as you: Map the likely benefits of each category to your organization, evaluate current and future technology needs for implementation, select those categories with the best returns for your business and evaluate vendors to cover the categories you opt for.

- Analysis and Integration
- Demand Management
- Work Planning
- Technician Enablement (Mobile)
- Work Order Debrief
- Operations

Benefits

See Return on Investment (ROI) Analysis Document

**Oakland County
Department of Information Technology
Project Scope and Approach**

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Impact

Number of Users 200+
Divisions Facilities Management
Leadership Groups Land

Risk

Business Environment HIGH - Project will dramatically change existing business processes or will negatively affect the business environment if implementation is unsuccessful.

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:

<u>Role:</u>	<u>Name</u>	<u>Hours per Day</u>
Project Sponsor:	Art Holdsworth	As needed
FM Data/Content Editors	TBD	As needed

Facilities

- None

Technical

- Cityworks will be used for inspection templates
- AGO will be used for application creation

Funding

- IT

Other

- None

Priority

- TBD

**Oakland County
Department of Information Technology
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Constraints

- None

Exclusions

- None at this time

**Oakland County
Department of Information Technology
Project Scope and Approach**

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PROJECT PHASE AUTHORIZATION

Phase(s):	
Total Estimated Application Services	Hours: 808
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:
Preliminary Estimated Development for Future Phases	Hours:
Grand Total Estimated Development	Hours: 808 Cost: \$133,320

**Oakland County
Department of Information Technology
Project Scope and Approach**

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PROJECT COMPLETION AUTHORIZATION

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

FM CAMS Expansion - Size Estimate (+/- 10% to 50%)

1	Type	ID	Task Name	Estimated	Estimate Notes
2				Hours	
3	3	000000	PROJECT MANAGEMENT	185	
4	Phase	200000	DEFINE BUSINESS REQUIREMENTS	175	
5	Phase	300000	DESIGN SYSTEM ARCHITECTURE	122	
6	Phase	500000	DEVELOP APPLICATION	285	
7	Phase	600000	IMPLEMENTATION PHASE	29	
8	Phase	080000	POST IMPLEMENTATION SUPPORT	12	
9				808	

Oakland County -- FM CAMS Expansion
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:	98,160	99,142	100,133	101,134	102,146	103,167	603,882
Costs:							
Development Services Subtotal:	66,660	73,993	6,733	6,800	6,868	6,937	167,990
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	98,160	99,142	100,133	101,134	102,146	103,167	603,882
Annual Total Costs	66,660	73,993	6,733	6,800	6,868	6,937	167,990
Annual Return on Investment	31,500	25,149	93,400	94,334	95,278	96,230	435,892
Annual Costs/Savings Ratio	67.91%	74.63%	6.72%	6.72%	6.72%	6.72%	
Project Cumulative Statistics:							
Cumulative Total Savings	98,160	197,302	297,435	398,569	500,715	603,882	603,882
Cumulative Total Costs	66,660	140,653	147,385	154,185	161,053	167,990	167,990
Cumulative Return on Investment	31,500	56,649	150,049	244,384	339,661	435,892	435,892
Cumulative Cost/Savings Ratio	67.91%	71.29%	49.55%	38.68%	32.16%	27.82%	27.82%
Year Positive Payback Achieved	Year 1						Year 1
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
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 spent transferring hard copy inspections information into application	Cost Avoidance			736	60	44,160	1.010
Increase the use of the FM data through improved maintenance and access	Cost Avoidance			400	60	24,000	1.010
Creation of new reports will allow faster analysis of FM data	Cost Avoidance			600	50	30,000	1.010
						0	
						0	
						0	
						0	
						0	
						0	

Oakland County -- FM CAMS Expansion
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 spent transferring hard copy inspections information into application	Cost Avoidance	x	x	x	x	x	x	44,160.00	44,601.60	45,047.62	45,498.09	45,953.07	46,412.60
Increase the use of the FM data through improved maintenance and access	Cost Avoidance	x	x	x	x	x	x	24,000.00	24,240.00	24,482.40	24,727.22	24,974.50	25,224.24
Creation of new reports will allow faster analysis of FM data	Cost Avoidance	x	x	x	x	x	x	30,000.00	30,300.00	30,603.00	30,909.03	31,218.12	31,530.30
		x	x	x	x	x	x	0.00	0.00	0.00	0.00	0.00	0.00
		x	x	x	x	x	x	0.00	0.00	0.00	0.00	0.00	0.00
		x	x	x	x	x	x	0.00	0.00	0.00	0.00	0.00	0.00
		x	x	x	x	x	x	0.00	0.00	0.00	0.00	0.00	0.00
		x	x	x	x	x	x	0.00	0.00	0.00	0.00	0.00	0.00

Oakland County -- FM CAMS Expansion

Return on Investment Analysis

Savings Summary

Benefit/Savings Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Tangible Benefit:							
<i>Tangible Benefits Subtotal:</i>							
Cost Avoidance:							
Staff time spent transferring hard copy inspections information into application	44,160	44,602	45,048	45,498	45,953	46,413	271,673
Increase the use of the FM data through improved maintenance and access	24,000	24,240	24,482	24,727	24,974	25,224	147,648
Creation of new reports will allow faster analysis of FM data	30,000	30,300	30,603	30,909	31,218	31,530	184,560
<i>Cost Avoidance Subtotal:</i>	98,160	99,142	100,133	101,134	102,146	103,167	603,882
Intangible Benefit:							
Better decision making through access to infrastructure and inspection data							
Savings Total:	98,160	99,142	100,133	101,134	102,146	103,167	603,882

Oakland County -- FM CAMS Expansion
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			808	165	66,660	1.010	x	x						
IT Hours - System Maintenance	Development Svcs			10	165	1,650	1.010		x	x	x	x	x	x	
IT Hours - Customer Support	Development Svcs			30	165	4,950	1.010		x	x	x	x	x	x	
IT Hours - Planned Maintenance	Development Svcs				165	0	1.010		x	x	x	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				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 -- FM CAMS Expansion
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 -- FM CAMS Expansion
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 Existing 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												

Oakland County -- FM CAMS Expansion
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												
Medium - 8 Core 32GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = \$1,702 On Premise Physical Server = \$9,751	Infrastructure		ANN												
Large - 16 Core 64GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = \$3,167 On Premise Physical Server = \$10,446	Infrastructure		ANN												
Extra Large - 40 Core 160GB RAM, 500GB Drive, 10 GB NIC - Cloud/Virtual = \$7,564 On Premise Physical Server = \$12,906	Infrastructure		ANN												
Project Staff Training	Training														
User Training	Training														

Oakland County -- FM CAMS Expansion
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	66,660.00	67,326.60				
IT Hours - System Maintenance	Development Svcs		1,666.50	1,683.17	1,700.00	1,717.00	1,734.17
IT Hours - Customer Support	Development Svcs		4,999.50	5,049.50	5,099.99	5,150.99	5,202.50
IT Hours - Planned Maintenance	Development Svcs		0.00	0.00	0.00	0.00	0.00
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 -- FM CAMS Expansion
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 -- FM CAMS Expansion
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 Existing 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 -- FM CAMS Expansion
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						
Project Staff Training	Training						
User Training	Training						

Oakland County -- FM CAMS Expansion

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	66,660	67,327					133,987
IT Hours - System Maintenance		1,667	1,683	1,700	1,717	1,734	8,501
IT Hours - Customer Support		5,000	5,049	5,100	5,151	5,202	25,502
IT Hours - Planned Maintenance		0	0	0	0	0	
User Hours - New Development							
User Hours - PTNE/OT							
Contractor Professional Services							
<i>Development Services Subtotal:</i>	66,660	73,993	6,733	6,800	6,868	6,937	167,990
Hardware:							
<i>Hardware Subtotal:</i>							
Software:							
<i>Software Subtotal:</i>							
Infrastructure:							
<i>Infrastructure Subtotal:</i>							
Training:							
<i>Training Subtotal:</i>							
Other:							
<i>Other Subtotal:</i>							
Costs Total:	66,660	73,993	6,733	6,800	6,868	6,937	167,990

