



# Oakland County Department of Information Technology Project Scope and Approach

**Project Name: GIS Enterprise Program (2021-22)**

**Project ID: D11182GB**

- Campus Locator application for citizens to use when navigating the County campus.
- Updated GIS marketing and communication materials and plans.
- Research and evaluation regarding Oakland County's participation in national and regional programs.
- GIS Data Distribution Workflow improvements
  - Create GIS data availability reports.
  - Create workflow, and potentially application, for identification and distribution of sensitive data.

## **Approach**

- Develop Detailed Project Plans, as Needed
- Review Current Business Processes
- Document Business Requirements
- Research New Collaboration Opportunities, and Evaluate their Value
- Document Data Policy Changes
- Assess Hardware and Software Requirements
- Develop Implementation Plans
- Develop New Systems/Data
- Develop User Acceptance Test Plans
- Test New System/Data
- Develop User Training
- Develop User Documentation, SLA, Disaster Recovery Toolkit, Service Center Knowledge Documents
- Train/Notify Users of New System/Data
- Conduct Change Control
- Release New System/Data into Production

## **Business Objective**

To foster a sustainable technological environment for Oakland County location-based services.

To leverage accurate and current location-based data to support decision making in Oakland County.

## **Major Deliverables**

Examples include:

- New products derived from imagery, such as impervious surface or other feature extraction.
- New map caches using vector (rather than raster) tile format.
- Evaluation of new, relevant GIS technologies as they become available.
- Standard Enterprise GIS application templates that can be repurposed for specific department uses, such as:
  - Crowd sourcing
  - Simple editing/markup
  - Notification pushes
- New, or enhanced, enterprise GIS datasets, as they are requested.

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- Expose additional customer data to make it available for analysis and decision-making by a larger group.
- Enhance GIS enterprise data maintenance and publishing workflows, as needed.
- Implement new functionality offered by ArcGIS Online during the scheduled quarterly releases.
- Improved administration of the County's ArcGIS Online account.
  - Create scripts to automate tasks.
  - Document standards and best practices.
  - Create and implement communication plan that will notify users of enhancements and further attract their interest in spatial technologies.
- Consumption of additional Esri Marketplace applications within the County's ArcGIS Online Organization account to further refine administrative functions and end user experience.
- New analysis products related to the Census 2020 data

## **Approach**

- Develop Detailed Project Plans, as Needed
- Document Research Findings
- Share Research Findings at GIS Meetings.
- Review Current Business Process
- Conduct Needs Assessment with Customer
- Document Business Requirements
- Negotiate terms of contracts/SLAs with Vendors and Partners, as Needed
- Create Presentation for Board of Commissioners, as Needed
- Document Data Model Design and System Requirements
- Document System Architecture
- Determine and Document Automation/Conversion
- Assess Hardware and Software Requirements
- Develop Implementation Plan
- Develop New System/Data
- Develop User Acceptance Test Plan
- Test New System/Data
- Acquire User Acceptance Sign-Off
- Develop User Training
- Develop User Documentation, SLA, Disaster Recovery Toolkit, Service Center Knowledge Documents
- Train/Notify Users of New System/Data
- Conduct Change Control
- Release New System/Data into Production

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**Research & Analysis**

Gartner Research - Research Conducted, Nothing Found

**Benefits**

See *Return on Investment (ROI) Analysis Document*

**Impact**

**Number of Users**      Unlimited

**Divisions**              All geospatial data and application consumers

**Leadership Groups**    Land

**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:

<b><u>Role:</u></b>	<b><u>Name</u></b>	<b><u>Hours per Day</u></b>
Project Sponsor:	Mike Timm	As needed.

**Facilities**

- None

**Technical**

- No additional hardware purchases will be required specifically for this work.

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

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**Funding**

- Funded

**Other**

- None

**Priority**

- TBD

**Constraints**

- None

**Exclusions**

- None

# Oakland County Department of Information Technology Project Scope and Approach

**Project Name: GIS Enterprise Program (2021-22)**

**Project ID: D11182GB**

## PROJECT PHASE AUTHORIZATION

<b>Phase(s):</b> All	
<b>Total Estimated Application Services</b>	<b>Hours: 5860</b>
<b>Total Estimated Technical Systems</b>	<b>Hours: 40</b>
<b>Total Estimated CLEMIS</b>	<b>Hours:</b>
<b>Total Estimated Internal Services</b>	<b>Hours:</b>
<b>IT Application Services Division Manager Approval:</b>	<b>Date:</b>
<b>IT Technical Systems Division Manager Approval:</b>	<b>Date:</b>
<b>IT CLEMIS Division Manager Approval:</b>	<b>Date:</b>
<b>IT Internal Services Division Manager Approval:</b>	<b>Date:</b>
<b>IT Management Approval:</b>	
Approved:                      Yes                      No	<b>Date:</b>
Reason:	
<b>Project Sponsor Approval:</b>	
Title:	<b>Date:</b>

## PROJECT SUMMARY

<b>Authorized Development (see above)</b>	<b>Hours: 5900</b>
<b>Preliminary Estimated Development for Future Phases</b>	<b>Hours:</b>
<b>Grand Total Estimated Development</b>	<b>Hours: 5900    Cost: \$973,500</b>

# Oakland County Department of Information Technology Project Scope and Approach

**Project Name: GIS Enterprise Program (2021-22)**

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## PROJECT COMPLETION AUTHORIZATION

<b>Customer Acceptance of Product:</b>	
Title:	Date:
<b>Project Office Review:</b>	Date:

GIS Enterprise Program (2021-22) - Size Estimate (+/- 10% to 50%)

1	Type	ID	Task Name	Estimated
2				Hours
3	Phase	000000	GIS Enterprise Program	5,900
4				5,900

**Oakland County -- GIS Enterprise Program (2021-22)**

Return on Investment Analysis

Project Summary

Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
<b>Benefits/Savings:</b>							
Tangible Benefits Subtotal:	0	0	0	0	0	0	0
Cost Avoidance Subtotal:	7,640	7,716	7,794	7,871	7,950	8,030	47,001
<b>Costs:</b>							
Development Services Subtotal:	519,750	520,080	33,663	34,000	34,340	34,683	1,176,516
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
<b>Annual Statistics:</b>							
Annual Total Savings	7,640	7,716	7,794	7,871	7,950	8,030	47,001
Annual Total Costs	519,750	520,080	33,663	34,000	34,340	34,683	1,176,516
Annual Return on Investment	(512,110)	(512,364)	(25,870)	(26,128)	(26,390)	(26,654)	(1,129,515)
Annual Costs/Savings Ratio	6803.01%	6739.93%	431.94%	431.94%	431.94%	431.94%	
<b>Project Cumulative Statistics:</b>							
Cumulative Total Savings	7,640	15,356	23,150	31,021	38,972	47,001	47,001
Cumulative Total Costs	519,750	1,039,830	1,073,493	1,107,493	1,141,833	1,176,516	1,176,516
Cumulative Return on Investment	(512,110)	(1,024,474)	(1,050,343)	(1,076,472)	(1,102,861)	(1,129,515)	(1,129,515)
Cumulative Cost/Savings Ratio	6803.01%	6771.31%	4637.13%	3570.09%	2929.91%	2503.15%	2503.15%
Year Positive Payback Achieved							NO PAYBACK
State or Federal Mandate?							
<b>Signatures:</b>							
Benefits Reviewed By Project Sponsor	_____			Date:	_____		
Costs (including IT Resources) Reviewed By Information Technology Project Manager	_____			Date:	_____		



**Oakland County -- GIS Enterprise Program (2021-22)**

Return on Investment Analysis

Savings Detail

<b>Benefit/Savings Description</b>	<b>Project Savings Category</b>	<b>Budget Category/Funding Source</b>	<b>Unit Desc</b>	<b>Units</b>	<b>Rate per Unit</b>	<b>Total Savings</b>	<b>Annual Multiplier</b>
Map of the Month program increases public awareness of services and activities provided by Oakland County and local businesses.	Intangible Benefit					0	
Creating Enterprise ArcGIS Server services that can easily be consumed by other applications reduces (or even eliminates) the development time for new applications, which makes the IT Department more responsive to customer needs.	Intangible Benefit					0	
Creating additional Enterprise ArcGIS Server services makes them available to non-programming staff for use within their own AGO maps and applications.	Intangible Benefit					0	
Expanding the user base to even more County departments and CVTs further leverages our current investment of GIS technology and data.	Intangible Benefit					0	
Improved AGO administration facilitates use of the product by providing clear, easy-to-follow guidelines.	Intangible Benefit					0	
Improved data modeling can streamline GIS data maintenance and improve data accuracy.	Intangible Benefit					0	
Having up-to-date marketing and communication plans allows IT to take advantage of the latest technologies and venues to promote our program, both internally and externally.	Intangible Benefit					0	

**Oakland County -- GIS Enterprise Program (2021-22)**

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
Public engagement improves transparency, effectiveness and decision making.	Intangible Benefit					0	
New vector caching format improves user experience with faster panning and the ability to zoom in to a lower level.	Intangible Benefit					0	
Creating opportunities for CVTs and Departments to work together (e.g., "industry parties") encourages collaboration and discussion directly among the relevant staff.	Intangible Benefit					0	
Creating new imagery products such as impervious surface and other feature extraction assists customers such as WRC, EDCA and Health with analysis.	Intangible Benefit					0	
Using the 2020 Census data to develop new products will help County and CVT staff, along with the public, better understand the demographic makeup of our communities, ultimately leading to more informed decision making.	Intangible Benefit					0	
Streamlining our data distribution workflow reduces Business Analyst staff time to answer questions regarding data.	Cost Avoidance		HR	13	80	1,040	1.010
New vector caches reduce the number of a caches we need to maintain.	Cost Avoidance		HR	40	165	6,600	1.010
						0	
						0	
						0	

**Oakland County -- GIS Enterprise Program (2021-22)**

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
Map of the Month program increases public awareness of services and activities provided by Oakland County and local businesses.	Intangible Benefit												
Creating Enterprise ArcGIS Server services that can easily be consumed by other applications reduces (or even eliminates) the development time for new applications, which makes the IT Department more responsive to customer needs.	Intangible Benefit												
Creating additional Enterprise ArcGIS Server services makes them available to non-programming staff for use within their own AGO maps and applications.	Intangible Benefit												
Expanding the user base to even more County departments and CVTs further leverages our current investment of GIS technology and data.	Intangible Benefit												
Improved AGO administration facilitates use of the product by providing clear, easy-to-follow guidelines.	Intangible Benefit												
Improved data modeling can streamline GIS data maintenance and improve data accuracy.	Intangible Benefit												
Having up-to-date marketing and communication plans allows IT to take advantage of the latest technologies and venues to promote our program, both internally and externally.	Intangible Benefit												

**Oakland County -- GIS Enterprise Program (2021-22)**

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	
Public engagement improves transparency, effectiveness and decision making.	Intangible Benefit													
New vector caching format improves user experience with faster panning and the ability to zoom in to a lower level.	Intangible Benefit													
Creating opportunities for CVTs and Departments to work together (e.g., "industry parties") encourages collaboration and discussion directly among the relevant staff.	Intangible Benefit													
Creating new imagery products such as impervious surface and other feature extraction assists customers such as WRC, EDCA and Health with analysis.	Intangible Benefit													
Using the 2020 Census data to develop new products will help County and CVT staff, along with the public, better understand the demographic makeup of our communities, ultimately leading to more informed decision making.	Intangible Benefit													
Streamlining our data distribution workflow reduces Business Analyst staff time to answer questions regarding data.	Cost Avoidance	x	x	x	x	x	x	1,040.00	1,050.40	1,060.90	1,071.51	1,082.23	1,093	
New vector caches reduce the number of a caches we need to maintain.	Cost Avoidance	x	x	x	x	x	x	6,600.00	6,666.00	6,732.66	6,799.99	6,867.99	6,937	

**Oakland County -- GIS Enterprise Program (2021-22)**

Return on Investment Analysis

Savings Summary

Benefit/Savings Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
<b>Tangible Benefit:</b>							
<i>Tangible Benefits Subtotal:</i>							
<b>Cost Avoidance:</b>							
Streamlining our data distribution workflow reduces Business Analyst staff time to answer questions regarding data.	1,040	1,050	1,061	1,072	1,082	1,093	6,398
New vector caches reduce the number of a caches we need to maintain.	6,600	6,666	6,733	6,800	6,868	6,937	40,603
<i>Cost Avoidance Subtotal:</i>	<b>7,640</b>	<b>7,716</b>	<b>7,794</b>	<b>7,871</b>	<b>7,950</b>	<b>8,030</b>	<b>47,001</b>
<b>Intangible Benefit:</b>							
Map of the Month program increases public awareness of services and activities provided by Oakland County and local businesses.							
Creating Enterprise ArcGIS Server services that can easily be consumed by other applications reduces (or even eliminates) the development time for new applications, which makes the IT Department more responsive to customer needs.							
Creating additional Enterprise ArcGIS Server services makes them available to non-programming staff for use within their own AGO maps and applications.							
Expanding the user base to even more County departments and CVTs further leverages our current investment of GIS technology and data.							

**Oakland County -- GIS Enterprise Program (2021-22)**

Return on Investment Analysis

Savings Summary

Benefit/Savings Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Improved AGO administration facilitates use of the product by providing clear, easy-to-follow guidelines.							
Improved data modeling can streamline GIS data maintenance and improve data accuracy.							
Having up-to-date marketing and communication plans allows IT to take advantage of the latest technologies and venues to promote our program, both internally and externally.							
Public engagement improves transparency, effectiveness and decision making.							
New vector caching format improves user experience with faster panning and the ability to zoom in to a lower level.							
Creating opportunities for CVTs and Departments to work together (e.g., "industry parties") encourages collaboration and discussion directly among the relevant staff.							
Creating new imagery products such as impervious surface and other feature extraction assists customers such as WRC, EDCA and Health with analysis.							
Using the 2020 Census data to develop new products will help County and CVT staff, along with the public, better understand the demographic makeup of our communities, ultimately leading to more informed decision making.							
<b>Savings Total:</b>	<b>7,640</b>	<b>7,716</b>	<b>7,794</b>	<b>7,871</b>	<b>7,950</b>	<b>8,030</b>	<b>47,001</b>

**Oakland County -- GIS Enterprise Program (2021-22)**

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			5,900	165	973,500	1.010	x	x						
IT Hours - System Maintenance	Development Svcs			50	165	8,250	1.010	x	x	x	x	x	x		
IT Hours - Customer Support	Development Svcs			100	165	16,500	1.010	x	x	x	x	x	x		
IT Hours - Planned Maintenance	Development Svcs			50	165	8,250	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				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 -- GIS Enterprise Program (2021-22)**

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 -- GIS Enterprise Program (2021-22)**

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									

**Oakland County -- GIS Enterprise Program (2021-22)**

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	486,750.00	486,750.00				
IT Hours - System Maintenance	Development Svcs	8,250.00	8,332.50	8,415.83	8,499.98	8,584.98	8,670.83
IT Hours - Customer Support	Development Svcs	16,500.00	16,665.00	16,831.65	16,999.97	17,169.97	17,341.67
IT Hours - Planned Maintenance	Development Svcs	8,250.00	8,332.50	8,415.83	8,499.98	8,584.98	8,670.83
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 -- GIS Enterprise Program (2021-22)**

Return on Investment Analysis

Cost Detail

Cost Description	Project Cost Category	Potential Cost Extensions					
		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 -- GIS Enterprise Program (2021-22)**

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						

**Oakland County -- GIS Enterprise Program (2021-22)**

Return on Investment Analysis

Cost Summary

Cost Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
<b>Development Services:</b>							
IT Hours - New Development	486,750	486,750					973,500
IT Hours - System Maintenance	8,250	8,333	8,416	8,500	8,585	8,671	50,754
IT Hours - Customer Support	16,500	16,665	16,832	17,000	17,170	17,342	101,508
IT Hours - Planned Maintenance	8,250	8,333	8,416	8,500	8,585	8,671	50,754
User Hours - New Development							
User Hours - PTNE/OT							
Contractor Professional Services							
<i>Development Services Subtotal:</i>	<b>519,750</b>	<b>520,080</b>	<b>33,663</b>	<b>34,000</b>	<b>34,340</b>	<b>34,683</b>	<b>1,176,516</b>
<b>Hardware:</b>							
<i>Hardware Subtotal:</i>							
<b>Software:</b>							
<i>Software Subtotal:</i>							
<b>Infrastructure:</b>							
<i>Infrastructure Subtotal</i>							
<b>Training:</b>							
<i>Training Subtotal:</i>							
<b>Other:</b>							
<i>Other Subtotal:</i>							
<b>Costs Total:</b>	<b>519,750</b>	<b>520,080</b>	<b>33,663</b>	<b>34,000</b>	<b>34,340</b>	<b>34,683</b>	<b>1,176,516</b>

