Oakland County
Department of Information Technology
Project Scope and Approach

Project Name: Satellite Communication Backup System **Project ID: D59166SC**

Leadership Group: Finance/Admin			
Department: Health and Human Services Technology		**Division: Homeland Security**	
Project Sponsor: Thomas Hardesty	**Date Requested: 02/15/08**	**PM Customer No. 166**	
Request Type:	***XX New Development*** ***Enhancement*** ***Customer Support*** ***Planned System Maintenance or Upgrade***		
IT Team Name: Public and Environmental Services		**IT Team No: 5**	
Project Manager/Leader: Stu Smith			
Account Number: 98990	**Account Description:** Homeland Security	**Customer Name:** Homeland Security	
Grant Funded? Yes **No XX**		**Mandate?** **Yes** **No XX** **Mandate Source:**	

Project Goal

To implement a satellite communication system to the Homeland Security department so that they can share data, voice, and image communications with other agencies and emergency responders in the field as well as switch to the satellite system for backup voice and data communication system in case primary systems fail during an emergency.

Business Objective

The main business objective of the satellite communication system project is to provide the Homeland Security Department voice, data, and image communication with field resources and an option to failover to the backup system in case the primary system goes down during an emergency situation.

Major Deliverables

- Detailed Project Plan
- Implementation Plan
- Application and/or System Requirements
- RFP Distributed to Vendors
- Vendor Selection via Vendor Demos and RFP Scoring Matrix
- Completed and Signed Vendor Contract
- Technical Architecture Diagram(s)
- User Acceptance Test Plan
- Disaster Recovery Toolkit
- Service Level Agreement
- Service Center Knowledge Documents
- Training/User Manuals

Approach

- Develop Detailed Project Plan
- Document system requirements
- Determine and document system architecture and diagram
- Develop and distribute RFP to potential vendors
- Conduct vendor demos and complete vendor selection via RFP Scoring Matrix
- Conduct contract negotiations with selected vendor
- 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

To build and sustain a dependable, resilient networking infrastructure, I&O leaders should:

- Mitigate the risk of terrestrial WAN outages in high risk locations by including satellite VSAT or mobile infrastructure.
- Match business-critical enterprise voice and data applications requirements with the appropriate fixed or mobile satellite technology.
- Plan to incorporate emerging low earth orbit satellite services matching them against requirements for high throughput speeds.

Oakland County
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Benefits

See Return on Investment (ROI) Analysis Document

Impact

Number of Users 25+

Divisions Homeland Security

Leadership Groups Finance/Admin

Risk

Business Environment Medium – Project will require some changes to existing business processes.

Technical Environment Medium – Previously implemented technologies with new aspects and/or new requirements.

Assumptions

Staffing IT Staffing: resources will be available for the hours indicated per the attached project plan.

Other Staffing: additional staffing will be available as follows:

Role:	Name	Hours per Day
Sponsor	Thomas Hardesty	As Needed
Business Lead	Kevin Scheid	As Needed
Subject Matter Expert	Tracey McGee	As Needed

Oakland County
Department of Information Technology
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Facilities

-

Technical

- Interaction between OCIT Network/Telecom Teams and Homeland Security.
- Automatic Transfer Switch capability for phone and data communication in the event of failure.

Funding

- Information Technology/Grants

Other

- Satellite Technology upgrades may occur frequently
- If Homeland Security Building is not functional, hardware shall be transferable

Priority TBD

Constraints

- Licensing Rules related to Satellite frequencies
- Potential governmental regulations – transmitting areas
- Contract related issues during down time.

Exclusions

- Does not anticipate redundant power needs

Oakland County
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PROJECT PHASE AUTHORIZATION

Phase(s):	
Total Estimated Application Services **Hours: 648**	
Total Estimated Technical Systems **Hours: 70**	
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: 718**	**Cost: $118,470**

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:

Satellite Communication Backup System - Size Estimate (+/- 10% to 50%

	Type	ID	Task Name	Estimated Hours
3	**3**	**000000**	**PROJECT MANAGEMENT**	**171**
4	**Phase**	**200000**	**DEFINE BUSINESS REQUIREMENTS**	**206**
5	**Phase**	**300000**	**DESIGN SYSTEM ARCHITECTURE**	**133**
6	**Phase**	**500000**	**DEVELOP APPLICATION**	**120**
7	**Phase**	**600000**	**IMPLEMENTATION PHASE**	**55**
8	**Phase**	**080000**	**POST IMPLEMENTATION SUPPORT**	**33**
9				718

D59166SC

Oakland County -- Satellite Communication Backup System

Return on Investment Analysis

As Of: 2/15/18

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:	1,625	1,658	1,691	1,724	1,759	1,794	10,251
Costs:							
Development Services Subtotal:	118,470	6,600	6,600	6,600	6,600	6,600	151,470
Hardware Subtotal:	5,134	0	0	0	0	0	5,134
Software Subtotal:	2,400	2,400	2,400	2,400	2,400	2,400	14,400
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	1,625	1,658	1,691	1,724	1,759	1,794	10,251
Annual Total Costs	126,004	9,000	9,000	9,000	9,000	9,000	171,004
Annual Return on Investment	(124,379)	(7,343)	(7,309)	(7,276)	(7,241)	(7,206)	(160,753)
Annual Costs/Savings Ratio	7754.09%	542.99%	532.34%	521.90%	511.67%	501.64%	
Project Cumulative Statistics:							
Cumulative Total Savings	1,625	3,283	4,973	6,698	8,457	10,251	10,251
Cumulative Total Costs	126,004	135,004	144,004	153,004	162,004	171,004	171,004
Cumulative Return on Investment	(124,379)	(131,722)	(139,031)	(146,306)	(153,547)	(160,753)	(160,753)
Cumulative Cost/Savings Ratio	7754.09%	4112.84%	2895.63%	2284.46%	1915.72%	1668.22%	1668.22%
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:			

REV: January 22, 2018

Oakland County -- Satellite Communication Backup System

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
Time spent working outside of the sytem to get around the system limitations related to reporting needs.	Cost Avoidance		HR	25	65	1,625	1.020
Reallocation of time management spent on working around the inefficiencies of the current system to other duties.	Intangible Benefit					0	
Integration of information sharing and resource request processing between the EOC and emergency responders in the field	Intangible Benefit					0	
Ensuring the availability of multiple redundant communications systems	Intangible Benefit					0	
						0	
						0	
						0	

Oakland County -- Satellite Communication Backup System

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
Time spent working outside of the sytem to get around the system limitations related to reporting needs.	Cost Avoidance	x	x	x	x	x	x	1,625	1,658	1,691	1,724	1,759	1,794
Reallocation of time management spent on working around the inefficiencies of the current system to other duties.	Intangible Benefit												
Integration of information sharing and resource request processing between the EOC and emergency responders in the field	Intangible Benefit												
Ensuring the availability of multiple redundant communications systems	Intangible Benefit												

Oakland County -- Satellite Communication Backup System

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:							
Time spent working outside of the sytem to get around the system limitations related to reporting needs.	1,625	1,658	1,691	1,724	1,759	1,794	10,251
Cost Avoidance Subtotal:	***1,625***	***1,658***	***1,691***	***1,724***	***1,759***	***1,794***	***10,251***
Intangible Benefit:							
Reallocation of time management spent on working around the inefficiencies of the current system to other duties.							
Integration of information sharing and resource request processing between the EOC and emergency responders in the field							
Ensuring the availability of multiple redundant communications systems							
Savings Total:	***1,625***	***1,658***	***1,691***	***1,724***	***1,759***	***1,794***	***10,251***

Oakland County -- Satellite Communication Backup System

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			718	165	118,470		x					
IT Hours - System Maintenance	Development Svcs			20	165	3,300			x	x	x	x	x
IT Hours - Customer Support	Development Svcs			20	165	3,300			x	x	x	x	x
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							
Skyware 1.8 Meter Dish	Hardware			1	4,659	4,659		x					
10 Watt Power Inserter	Hardware			1	475	475		x					
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			10	240	2,400		x	x	x	x	x	x
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							

Oakland County -- Satellite Communication Backup System

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
Oracle Enterprise Per Processor - Year 2 and Beyond	Infrastructure				3,432	0							
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 -- Satellite Communication Backup System

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							
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 -- Satellite Communication Backup System

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 -- Satellite Communication Backup System

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	118,470.00					
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		3,300.00	3,300.00	3,300.00	3,300.00	3,300.00
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						
Skyware 1.8 Meter Dish	Hardware	4,659.00					
10 Watt Power Inserter	Hardware	475.00					
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	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
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						

Oakland County -- Satellite Communication Backup System

Return on Investment Analysis

Cost Detail

Cost Description	Project Cost Category	Potential Cost Extensions					
		Y1	Y2	Y3	Y4	Y5	Y6
Oracle Enterprise Per Processor - Year 2 and Beyond	Infrastructure						
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 -- Satellite Communication Backup System

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						
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 -- Satellite Communication Backup System

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 -- Satellite Communication Backup System

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	118,470						118,470
IT Hours - System Maintenance		3,300	3,300	3,300	3,300	3,300	16,500
IT Hours - Customer Support		3,300	3,300	3,300	3,300	3,300	16,500
IT Hours - Planned Maintenance							
User Hours - New Development							
User Hours - PTNE/OT							
Contractor Professional Services							
Development Services Subtotal:	***118,470***	***6,600***	***6,600***	***6,600***	***6,600***	***6,600***	***151,470***
Hardware:							
Skyware 1.8 Meter Dish	4,659						4,659
10 Watt Power Inserter	475						475
Hardware Subtotal:	***5,134***						***5,134***
Software:							
Package Software - Maintenance	2,400	2,400	2,400	2,400	2,400	2,400	14,400
Software Subtotal:	***2,400***	***2,400***	***2,400***	***2,400***	***2,400***	***2,400***	***14,400***
Infrastructure:							
Infrastructure Subtotal							
Training:							
Training Subtotal:							
Other:							
Other Subtotal:							
Costs Total:	***126,004***	***9,000***	***9,000***	***9,000***	***9,000***	***9,000***	***171,004***

Oakland County -- Satellite Communication Backup System

Return on Investment Analysis

Assumptions

Date	Assumption Description
31-May-18	10 "users" refers to the individual lines required during a separation of connectivity to the county network
04-Jun-18	Hardware and phone line subscription costs make up the monthly spend. No Application to be purchased.