

Oakland County Department of Information Technology Project Scope and Approach

Project Name: Campus Wireless Enhancement

Project ID: TP8186LR

Leadership Group: Information Technology Steering Committee			
Department: Information Technology		Division: Technical Systems and Networking	
Project Sponsor: David Veit	Date Requested: 1/25/08	PM Customer No. 186	
Request Type:	<i>New Development</i>	Enhancement	<i>Customer Support</i>
<i>Planned System Maintenance or Upgrade</i>			
IT Team Name: Network Services		IT Team No: P	
Project Manager/Leader: David Bates			
Account Number: 17030	Account Description: Technical Systems and Networking	Customer Name:	Information Technology
Grant Funded? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Mandate? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Mandate Source:	

Project Goal

To replace the legacy wireless infrastructure within Oakland County Campus buildings and the airport, so that the Internet access capacity, reliability, and throughput is increased.

Business Objective

To perform project management activities, so that project execution is timely with appropriate quality and cost controls.

Major Deliverables

- Updated Project Plan
- Project Issues Log
- Project Scope Management Log

Approach

To utilize Technical Systems and Networking staff to perform the following activities:

- Develop Initial Project Documents, and
- Develop and Maintain Project Data.

IT management will provide expertise and approval of project documentation requiring management approval.

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Business Objective

To redesign wireless Internet access at key locations throughout the main Oakland County Campus and airport (below), so that visitor and employee wireless Internet access is improved.

Major Deliverables

- Wireless network design developed
- EOC wireless network design developed
- EOC support model developed
- Wireless network components procured
- Pilot site installed and tested
- Remaining wireless network components installed
- (24) Legacy wireless access points decommissioned
- FirstSpot portal decommissioned

Bldg Name	Bldg No	Room
Administrative Annex I Conference	47 West	Conference Room C100
Court Tower Complex	12 East	1st Floor Cafeteria
Court Tower Complex Commissioners	12 East	Commissioners Auditorium (AU01)
Court Tower Complex	12 East	Committee Room A (AU24)
Court Tower Complex	12 East	Court Room 2B 2nd Floor Tower
Court Tower Complex	12 East	Court Room 2H 2nd Floor East Wing
Court Tower Complex	12 East	Jury Room
Court Tower Complex	12 East	Legislative Study Conference Room (W20C)
Court Tower Complex	12 East	Outside Elections Room 1st Floor West Wing
Court Tower Complex	12 East	Pernick-Aaron Conference Room
Executive Office Building	41 West	All
Health Division	36 East	Land and Water Team Area Room 153
Information Technology	49 West	Administration Conference Room
Information Technology	49 West	Lecture Hall
Information Technology	49 West	Lobby
Jail & Law Enforcement Complex	10 East	Lower Level Conference Room
North Health Center	34 East	Budget Conference Room 216
North Health Center	34 East	Conference Room 210
North Health Center	34 East	One Stop Shop (Public Area)
Oakland International Airport	47 West	Terminal
Oakland Pointe	36 East	Conference Room 1022W
Public Works Drain	95 West	Conference Room 232
Public Works	95 West	North Wing
West Wing Extension	14 East	Circuit Court Administration Office Room 230
West Wing Extension	14 East	Court Room W2

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Approach

To utilize internal Technical Systems and Networking staff supplemented by contracted services to perform the following activities:

- Develop network design,
- Procure network components,
- Install network components,
- Test network components, design, and pilot site,
- Decommission First Spot portal and Linksys wireless access points, and
- Develop and maintain project data.

Utilize Facilities to implement any power outlets, network drops, and ceiling mounting for the wireless access points as needed.

Utilize Thumb Communications to relocate network drops, and implement ceiling mounting for wireless access points as needed.

IT management will provide expertise and approval of plans and project documentation requiring management approval as needed.

Benefits

See Return on Investment (ROI) Analysis Document

Intangible

Improved Service

- Increased total maximum number of concurrent users from 256 to 4096.

Product/Service Accuracy

- None identified.

Product/Service Productivity

- Faster Internet access by increasing network bandwidth capacity by switching from a shared DSL link to the OakNet ISP link.
- Reduced number users unable to connect to the Internet by failing to obtain an IP address by implementing centrally managed DHCP services.

Impact

Number of Users Approximately 300+ users per day.

Divisions Board of Commissioners, Courthouse, County Administration,
Information Technology, Drain Commission, Planning and

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Economic Development, Equalization and Health, Library, Airport,
Sheriff, EOC

Leadership Groups

Courts, Finance/Admin, Land, Internal Services, Technical
Systems and Networking, Airport, CLEMIS

Risk

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

Technical Environment **Low** - Proven and previously implemented technologies.

Assumptions

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

Other Staffing: additional staffing will be available as follows:

<u>Role:</u>	<u>Name</u>	<u>Hours per Day</u>
Project Sponsor:	David Veit	As Needed.

Facilities

- The project staff requires access to all buildings with Linksys devices for the duration of the project. (Building's 49 West, 47 West, Sheriff's Dept., 12 East, 34 East, 95 West, 26 East, Oakland Point – Bldg. 1, Airport, Drain Commission, and Library).
- Backboards, antennae boards and power will be provided by Facilities for ceiling mounted Wireless Access Point devices.

Technical

- Cisco Aironet wireless access points will be used.
- Redesigning the system to use the centrally managed DHCP will increase number of users from 256 to 4096 by increasing the available number of IP addresses.
- Once all Linksys wireless access points have been decommissioned, the FirstSpot Portal will be decommissioned.
- No coverage study will be conducted to determine Wireless Access Point device

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placement.

- IEEE 802.11 b/g technology will be utilized for connection.
- Implementation is 'fully' broadcast (SSID's will be broadcast) with no additional security requirements. (No Firewall, Anti-Virus, Anti-Spam).
- To provide the increased Internet access bandwidth, the current OakNet ISP connection will be used.

Funding

- IT

Other

- Visibility of receiver devices in rooms is not an issue.
- Support hours for the identified rooms are 8:30am – 5:00pm, Monday thru Friday.

Priority TBD

Constraints

- This effort addresses Internet access only.
- Design must not require users to change IP addresses.

Exclusions

- Locations with Cisco wireless access points already implemented.
- Oakland County will not support non-County devices.
- Hallways will not be covered; except as coincidence to other rooms covered.
- Wireless Access Points will not have automated network or security monitoring.

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PROJECT PHASE AUTHORIZATION

Phase(s): All	
Total Estimated Application Services	Hours: 16 Cost: \$1,952
Total Estimated Technical Systems	Hours: 531 Cost: \$22,204
Total Estimated eGovernment Services	Hours: Cost:
Total Estimated CLEMIS	Hours: Cost:
Total Estimated Internal Services	Hours: Cost:
IT Application Services Division Manager Approval:	Date:
IT Technical Systems Division Manager Approval:	Date:
IT eGovernment Services 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: 547 Cost: \$24,156
Preliminary Estimated Development for Future Phases	Hours: Cost:
Grand Total Estimated Development	Hours: 547 Cost: \$24,156

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PROJECT COMPLETION AUTHORIZATION

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

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[Campus Wireless Enhancement - Size Estimate (+/- 10% to 50%) (Read-Only)]

ools Window Help

(All Resources)

Type	ID	Task Name	Estimated Hours	Estimated Cost	Estimate Notes
Phase	000000	PROJECT MANAGEMENT	124	\$15,128.	
Phase	100000	SOLUTION DEVELOPMENT	56	\$2,805.9	
Phase	200000	PRE-IMPLEMENTATION	55	\$1,830.0	
Phase	300000	IMPLEMENTATION	264	\$1,830.0	
Phase	400000	POST IMPLEMENTATION	48	\$2,561.9	
			547	\$24,155.98	

Oakland County -- Campus Wireless Enhancement
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:	0	0	0	0	0	0	0
Costs:							
Development Services Subtotal:	38,820	0	0	0	0	0	38,820
Hardware Subtotal:	25,692	2,375	2,494	2,619	2,749	2,887	38,816
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	0	0	0	0	0	0	0
Annual Total Costs	64,512	2,375	2,494	2,619	2,749	2,887	77,636
Annual Return on Investment	(64,512)	(2,375)	(2,494)	(2,619)	(2,749)	(2,887)	(77,636)
Annual Costs/Savings Ratio	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Project Cumulative Statistics:							
Cumulative Total Savings	0	0	0	0	0	0	0
Cumulative Total Costs	64,512	66,887	69,381	72,000	74,749	77,636	77,636
Cumulative Return on Investment	(64,512)	(66,887)	(69,381)	(72,000)	(74,749)	(77,636)	(77,636)
Cumulative Cost/Savings Ratio	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
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: _____						
Costs (including IT Resources) Reviewed By Technical Services Manager	Date: _____						

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Savings Detail

Benefit/Savings Description	Project Savings Category	Budget Category/Funding Source	Unit Desc	Units	Rate per Unit	Total Savings	Annual Multiplier
Increased total maximum number of concurrent users from 256 to 4096	Cost Avoidance					0	
Faster Internet access by increasing network bandwidth capacity by switching from a shared DSL link to the OakNet ISP link	Cost Avoidance					0	
Reduced number users unable to connect to the Internet by failing to obtain an IP address by implementing centrally managed DHCP services.	Cost Avoidance					0	
						0	
						0	

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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		
Increased total maximum number of concurrent users from 256 to 4096	Cost Avoidance														
Faster Internet access by increasing network bandwidth capacity by switching from a shared DSL link to the OakNet ISP link	Cost Avoidance														
Reduced number users unable to connect to the Internet by failing to obtain an IP address by implementing centrally managed DHCP services.	Cost Avoidance														

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Savings Detail

Benefit/Savings Description	Project Savings Category					Savings Categories	Unit Desc Entries
Increased total maximum number of concurrent users from 256 to 4096	Cost Avoidance					Tangible Benefit	ANN
Faster Internet access by increasing network bandwidth capacity by switching from a shared DSL link to the OakNet ISP link	Cost Avoidance					Cost Avoidance	EA
Reduced number users unable to connect to the Internet by failing to obtain an IP address by implementing centrally managed DHCP services.	Cost Avoidance						HR

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Cost Detail

Cost Description	Project Cost Category	Budget Category/Funding Source	Unit Desc	Units	Rate per Unit	Total Cost	Annual Multiplier	Affects Project				
								Y1	Y2	Y3	Y4	
IT Hours - New Development	Development Svcs	IT - Information Technology / 17030	HR	547	60	32,820		x				
Thumb Communications Data Jack Insta	Development Svcs	IT - Information Technology / 17030	EA	24	250	6,000		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					0						
PC System - Maintenance	Hardware					0						
Notebook - Acquisition	Hardware					0						
Notebook - Maintenance	Hardware					0						
Mini Notebook - Acquisition	Hardware					0						
Mini Notebook - Maintenance	Hardware					0						
Cisco Aironet Wireless Access Point	Hardware	IT - Information Technology / 17030	EA	25	\$ 779.40	19,485		x				
2.4-GHz 2.2 dBi Dipole Straight Antenna	Hardware	IT - Information Technology / 17030	EA	75	\$ 11.40	855		x				
5-GHz 3.5 dBi Dipole Straight Antenna	Hardware	IT - Information Technology / 17030	EA	75	\$ 11.40	855		x				
Power Injector - 1250 Series	Hardware	IT - Information Technology / 17030	EA	25	\$ 89.40	2,235		x				
Cisco Aironet Wireless Access Point - Ma	Hardware	IT - Information Technology / 17030	EA	25	\$ 90.48	2,262	1.050	x	x	x	x	
Laserprinter 3 - Maintenance	Hardware				1,860	0						
Image Workstations - Acquisition	Hardware					0						
Image Workstations - Maintenance	Hardware				3,496	0						
Terminals - Acquisition	Hardware					0						
Terminals - Maintenance	Hardware				644	0						
PRTR w/TERM ID - Acquisition	Hardware					0						
PRTR w/TERM ID - Maintenance	Hardware				1,072	0						
PRTR w/o TERM ID - Acquisition	Hardware					0						
PRTR w/o TERM ID - Maintenance	Hardware				1,072	0						
PC Maintenance User Owned	Hardware				2,304	0						
Printer Maintenance User Owned	Hardware				1,072	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					0						
Server - Maintenance	Infrastructure					0						
Server Sftwre - Acquisition/Upgrade	Infrastructure					0						

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Cost Detail

Cost Description	Project Cost Category	Budget Category/Funding Source	Unit Desc	Units	Rate per Unit	Total Cost	Annual Multiplier	Affects Project			
								Y1	Y2	Y3	Y4
Server Sftwre - Maintenance	Infrastructure					0					
TBD	Infrastructure					0					
TBD	Infrastructure					0					
TBD	Infrastructure					0					
TBD	Infrastructure					0					
Internet Access	Infrastructure				180	0					
Project Staff Training	Training					0					
User Training	Training					0					
						0					
						0					
						0					
						0					
						0					

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Cost Detail

Cost Description	Project Cost Category	t ROI?		Potential Cost Extensions					
		Y5	Y6	Y1	Y2	Y3	Y4	Y5	Y6
IT Hours - New Development	Development Svcs			32,820					
Thumb Communications Data Jack Insta	Development Svcs			6,000					
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								
Mini Notebook - Acquisition	Hardware								
Mini Notebook - Maintenance	Hardware								
Cisco Aironet Wireless Access Point	Hardware			19,485					
2.4-GHz 2.2 dBi Dipole Straight Antenna	Hardware			855					
5-GHz 3.5 dBi Dipole Straight Antenna	Hardware			855					
Power Injector - 1250 Series	Hardware			2,235					
Cisco Aironet Wireless Access Point - Ma	Hardware	x	x	2,262	2,375	2,494	2,619	2,749	2,887
Laserprinter 3 - Maintenance	Hardware								
Image Workstations - Acquisition	Hardware								
Image Workstations - Maintenance	Hardware								
Terminals - Acquisition	Hardware								
Terminals - Maintenance	Hardware								
PRTR w/TERM ID - Acquisition	Hardware								
PRTR w/TERM ID - Maintenance	Hardware								
PRTR w/o TERM ID - Acquisition	Hardware								
PRTR w/o TERM ID - Maintenance	Hardware								
PC Maintenance User Owned	Hardware								
Printer Maintenance User Owned	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								

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Cost Detail

Cost Description	Project Cost Category	ROI?		Potential Cost Extensions					
		Y5	Y6	Y1	Y2	Y3	Y4	Y5	Y6
Server Sftwre - Maintenance	Infrastructure								
TBD	Infrastructure								
TBD	Infrastructure								
TBD	Infrastructure								
TBD	Infrastructure								
Internet Access	Infrastructure								
Project Staff Training	Training								
User Training	Training								

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Cost Summary

Cost Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Development Services:							
IT Hours - New Development	32,820						32,820
Thumb Communications Data Jack Install	6,000						6,000
User Hours - New Development							
User Hours - PTNE/OT							
Contractor Professional Services							
<i>Development Services Subtotal:</i>	38,820						38,820
Hardware:							
Cisco Aironet Wireless Access Point	19,485						19,485
2.4-GHz 2.2 dBi Dipole Straight Antenna	855						855
5-GHz 3.5 dBi Dipole Straight Antenna	855						855
Power Injector - 1250 Series	2,235						2,235
Cisco Aironet Wireless Access Point - Maintenance	2,262	2,375	2,494	2,619	2,749	2,887	15,386
<i>Hardware Subtotal:</i>	25,692	2,375	2,494	2,619	2,749	2,887	38,816
Software:							
<i>Software Subtotal:</i>							
Infrastructure:							
<i>Infrastructure Subtotal</i>							
Training:							
<i>Training Subtotal:</i>							
Other:							
<i>Other Subtotal:</i>							

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Cost Summary

Cost Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Costs Total:	64,512	2,375	2,494	2,619	2,749	2,887	77,636

