IT463

Risk Management Plan

And

EVA

GradBird Consultants

CONTENTS:

PROJECT NAME: IT Strategic plan, City of Mequon

TEAM NAME: GradBird Consultants

Project Leader: Eric Agyemang

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Broker: [redacted]

Mentor: [redacted]

PROJECT DESCRIPTION:

The City of Mequon, WI, is the largest city in Ozaukee County and the third largest city in land area in the state of Wisconsin. The City of Mequon provides public and information services to the citizens that enhance the quality of life in the community. The city has 4 primary facilities, namely City Hall, Public Safety Building, East Side Fire Station, and Public Works Safety. These facilities have various departments which include City Administrator's Office, City Clerk's Office, Finance, Public Works, Community Development, Police Department, and Fire Department.

This project is started in request to the City of Mequon seeking assistance in developing the ICT Infrastructure Plan. The proposed plan focuses on developing an Information Technology Plan that guides the organization in planning, designing, implementing, and maintaining the present and future technology requirements, so the city will have a more reliable, available, secure, and improved usability in a cost-effective way over the next 3-4 years. As a result, citizens and employees will be able to enjoy and use the system more effectively.

The budget for this project has been reduced from $110,000 to $88,000. An IT Security Consultant has been added to enhance system security. The addition of the IT Security Consultant has brought the project over budget and over schedule. The project includes a proposed solution that will bring the project back within the requested schedule and under the revised budget.

MEASURABLE ORGANIZATIONAL VALUE (MOV):

The City of Mequon is striving to improve and maintain the current IT technologies used by the city. The project will focus upon creating a cost-effective plan with the highest benefits. A cost-effective plan will efficiently use the city resources to improve and maintain the existing IT technologies during the next 4 years. Incremental changes to the buildings Wi-Fi routers and network switches will upgrade the wireless and wired networks resulting in higher wireless network speed and while also maintaining wired network stability. To ensure reliability, the workstations and laptops will be incrementally replaced with newer and more powerful workstations. All backup data will be relocated from the backup servers to the cloud to ensure that it is always available, free of viruses, threats, and more secure (AWS guarantees 100% security). Relocating the backup data to the cloud is also a very cost-effective move. A software security company will be added to improve on-premises systems security. The servers will be replaced to ensure highly operational servers with continued reliability. All current software licenses will be renewed. The purpose of these cost-effective upgrades is to provide a highly beneficial system so that the city can continue to provide cost-effective services to the citizens of Mequon.

The table below describes the Desired Areas of Impact:

Organizational Impact	Value	Metric	Time Frame
Customer	Provide a better IT System to the city so the citizens can continue having low-cost services	Fewer complaints from citizens. 10% reduction (current count- 200 complaints estimated)	Annual Survey
		Improving citizen satisfaction with website access and interaction (increased annual survey satisfaction numbers)	Annual Survey

Financial	Effectively spending the city resources to improve or maintain the current IT system	Within Budget $110,000 with possible savings of 10%	Annual Budget
Operational	A more efficient IT system that is more available, reliable, secure and faster.	Reduced downtimes by 10%, improved performance (2x faster), higher usability (increase in citizen usage by 10% and increased staff satisfaction), better security (AWS guarantees 100% security)	Annual Survey

The City of Mequon serves more than 24,000 citizens. The city strives to provide quality services to the citizens while maintaining low tax rates. The plan focuses upon implementing upgrades and improvements that will be cost-effective while improving efficiency, security, and reliability during the next 4 years. The plan includes considerations for anticipated city growth and unanticipated changes.

DESIRED VALUE OF IMPACT:

The planned IT system changes will decrease the number of IT help desk complaints because the upgraded and improved systems will be easier to use and more stable. The upgraded system will be more secure, which will reduce security threats and improve reliability. The project team anticipates an improved IT system will increase user satisfaction, which means more citizens will utilize online resources. The success of the plan will be validated by annual surveys of citizens and city employees verifying satisfaction with the IT system changes.

ORIGINAL PROJECT SUMMARY REPORT (BASELINE REPORT)

The following table presents the original (Baseline) project summary report with details of project attributes obtained from the Microsoft Project.

Dates			
Start	09/02/21	Finish	12/16/21
Baseline start	09/02/21	Baseline finish	12/16/21
Actual start	NA	Actual finish	NA
Variance	0 days	Finish Variance	0 days

Duration			
Schedule	74 days	Remaining	74 days
Baseline	74 days	Actual	0 days
Variance	0 days	Percent complete	0%

Work			
Schedule	1,216 hours	Remaining	1,216 hours
Baseline	1,216 hours	Actual	0 hours
Variance	0 hours	Percent complete	0%

Costs			
Schedule	$86,375	Remaining	$86,375
Baseline	$86,375	Actual	$0
Variance	$0		

Task status		**Resources status**	
Tasks not yet started	60	Work resources	7
In progress	0	Over allocated work resources	0
Completed	0	Material resources	6
Total tasks	60		

The total duration for the tasks is 74 days and the expected budget is $86,375.

BASELINE TOTAL COST OF OWNERSHIP (TCO):

The following table lists the baseline Total Cost of Ownership:

Total Cost of Ownership (TCO)		
Resource	**Description**	**Proposed Plan Cost**
Salaries Personnel	Project Manager (1 person*$48/hr. *420 hrs.) Tech Team (3 people*$32/hr. Tech 1 for 180 hrs. Tech 2 for 205 hrs. Tech 3 for 210 hrs.) TOTAL (**t1**)	$20,160 $5,760 $6,560 $6,720 $19,040 **$39,200**
IT Dept Salaries:	City Dept Salaries: 1 full time IT coordinator (2 weeks, 80 hrs. * $30) Public safety IT specialist (2 weeks, 80 hrs. * $23) TOTAL(**t2**)	$2,400 $1,840 **$4,240** **$43,440**
Server	Replacing 8 servers, servers 2 per year $1,780 per server	$3,560
Workstation Desktops	Replacing 5 per year, $1,274 per desktop workstation	$6,370
Workstation Laptops	Replacing 5 per year, $1,309 per laptop workstation	$6,545
Wireless Network	Replacing facilities routers 1 facility per year, 5 per year, $224 per router	$1,120
Wired Network	Replacing 2 switches per year, $442 per switch	$884

Storage	Replacing backup servers to store data into cloud, 1TB/ month	$48
Software	Maintaining current software licensing	$11,984
Training	2 days on site training, $500 per day (every year)	$1,000
Maintenance and Support	1 week, 40 hrs. * $30 per hour TOTAL(**t3**)	$1,200 **$32,711**
GRAND TOTAL	**t1+t2+t3**	**$76,151**

From the TCO table above, the total amount of $76,151 is within the budgeted amount of $110,000. Each resource cost is listed and the per unit cost of each resource is supported by a source link shown in the cost of resources table below the budget. The cost overview given by the WBS has exactly allocated hours to the personnel, but the TCO also has extra padding hours for the personnel which is the reason for the discrepancy in the values.

BASELINE BUDGET:

Below is the table that shows the baseline budget from the first year to the fourth year.

	Year 1	**Year 2**	**Year 3**	**Year 4**
Funds	$110,000	$110,000	$110,000	$110,000
Project Team Salaries	($39,200)	($39,200)	($39,200)	($39,200)
IT Dept Salaries	($4,240)	($4,240)	($4,240)	($4,240)
Office Supplies	($2,000)	($2,000)	($2,000)	($2,000
Proposed Plan	($32,711)	($32,711)	($32,711)	($32,711)
Contingency	($10,000)	($10,000)	($10,000)	($10,000)
Total Surplus	$22,249	$22,249	$22,249	$22,249

From the budget table above, a yearly fund of $110,000 was allocated for the project, out of which all costs for each year were deducted, which includes the contingency amount of $10,000. The total surplus for each year was ascertained by deducting the total annual costs from the annual fund. A surplus of $22,249 was obtained for each year.

BASELINE WBS: (WORK BREAKDOWN STRUCTURE-ORIGINAL PROJECT PLAN):

The deliverable structure chart was built based on the Project Life Cycle. Each phase of Project Life Cycle is assigned as a Task in our Work Breakdown Structure, along with the duration required to complete the task. We have created the subtasks by taking MOV into consideration so that the project can adhere to the MOV. The Schedule includes the standard 8-hour work time and excludes special holidays and weekends. The resources are assigned to each task, and the cost is calculated based on the number of days the task would take to complete.

The WBS includes tasks with subtasks and the milestones. Each task includes the duration in days required to complete the task and the necessary resources. Some of the tasks have dependencies with listed predecessors. Every task is Start-to-Finish.

Below is the illustrated baseline WBS.

	Task Name	Duration	Start	Finish	Predec	Resource Names	Cost
1	**PROJECT INITIALIZATION**	**13 days**	**Thu 9/2/21**	**Mon 9/20/21**			**$7,034.00**
2	Identify MOV	3 days	Thu 9/2/21	Mon 9/6/21		PROJECT MANAGER	$1,152.00
3	DEFINING ALTERNATIVES	4 days	Tue 9/7/21	Fri 9/10/21	2	TECH 2,TECH 3	$2,048.00
4	TOTAL COST OF OWNERSHIP	3 days	Mon 9/13/21	Wed 9/15/21	3	PROJECT MANAGER,TECH 2	$1,920.00
5	TOTAL BENEFIT OF OWNERSHIP	2 days	Thu 9/16/21	Fri 9/17/21	4	PROJECT MANAGER,TECH 2	$1,280.00
6	BUSINESS CASE DELIVERABLE	1 day	Mon 9/20/21	Mon 9/20/21	5	PROJECT MANAGER,OfficeSupplies[1]	$634.00
7	MILESTONE : CLIENT APPROVAL OF BUSINESS CASE	1 day	Tue 9/21/21	Tue 9/21/21	1	PROJECT SPONSOR	$0.00
8	**PROJECT CHARTER**	**2 days**	**Wed 9/22/21**	**Thu 9/23/21**	**7,1**		**$1,018.00**
9	CREATING PROJECT CHARTER	2 days	Wed 9/22/21	Thu 9/23/21	7	PROJECT MANAGER,OfficeSupplies[1]	$1,018.00
10	MILESTONE:PROJECT CHARTER APPROVAL	1 day	Fri 9/24/21	Fri 9/24/21	8	PROJECT SPONSOR	$0.00
11	**PROJECT PLANNING**	**9 days**	**Mon 9/27/21**	**Thu 10/7/21**	**10**		**$5,370.00**
12	IDENTIFY SCOPE OF PROJECT	2 days	Mon 9/27/21	Tue 9/28/21	10	PROJECT MANAGER,TECH 2,PROJECT SPONSOR	$1,280.00
13	DESIGNING THE STRUCTURE CHART	1 day	Wed 9/29/21	Wed 9/29/21	12	TECH 2	$256.00
14	CREATING THE WORK BREAKDOWN STRUCTURE	2 days	Thu 9/30/21	Fri 10/1/21	13	PROJECT MANAGER,TECH 3	$1,280.00
15	IDENTIFY AND ALLOCATE RESOURCES	1 day	Mon 10/4/21	Mon 10/4/21	14	PROJECT MANAGER	$384.00
16	ESTIMATING THE BUDGET	2 days	Tue 10/5/21	Wed 10/6/21	15	PROJECT MANAGER,TECH 3	$1,280.00
17	DELIVARABLE : SCOPE MANGEMENT PLAN	1 day	Thu 10/7/21	Thu 10/7/21	16	PROJECT MANAGER,TECH 2,OfficeSupplies[1]	$890.00
18	MILESTONE: SCOPE MANAGEMENT PLAN APPROVAL	1 day	Fri 10/8/21	Fri 10/8/21	11	PROJECT SPONSOR	$0.00
19	**EXECUTE**	**44 days**	**Mon 10/11/2**	**Mon 12/13/2**	**18**		**$68,271.00**
20	**ANALYSIS**	**7 days**	**Mon 10/11/2**	**Tue 10/19/21**	**18**		**$4,352.00**
21	ANALYZING THE CURRENT SYSTEM	2 days	Mon 10/11/21	Tue 10/12/21	18,11	PROJECT MANAGER,TECH 1,TECH 2,TECH 3	$2,304.00
22	REQUIREMENT GATHERING	2 days	Wed 10/13/21	Thu 10/14/21	21	TECH 1,TECH 3	$1,024.00
23	ANALYZE THE REQUIREMENTS	2 days	Fri 10/15/21	Mon 10/18/21	22	TECH 1,TECH 3	$1,024.00
24	CLIENT APPROVAL	1 day	Tue 10/19/21	Tue 10/19/21	23	PROJECT SPONSOR	$0.00

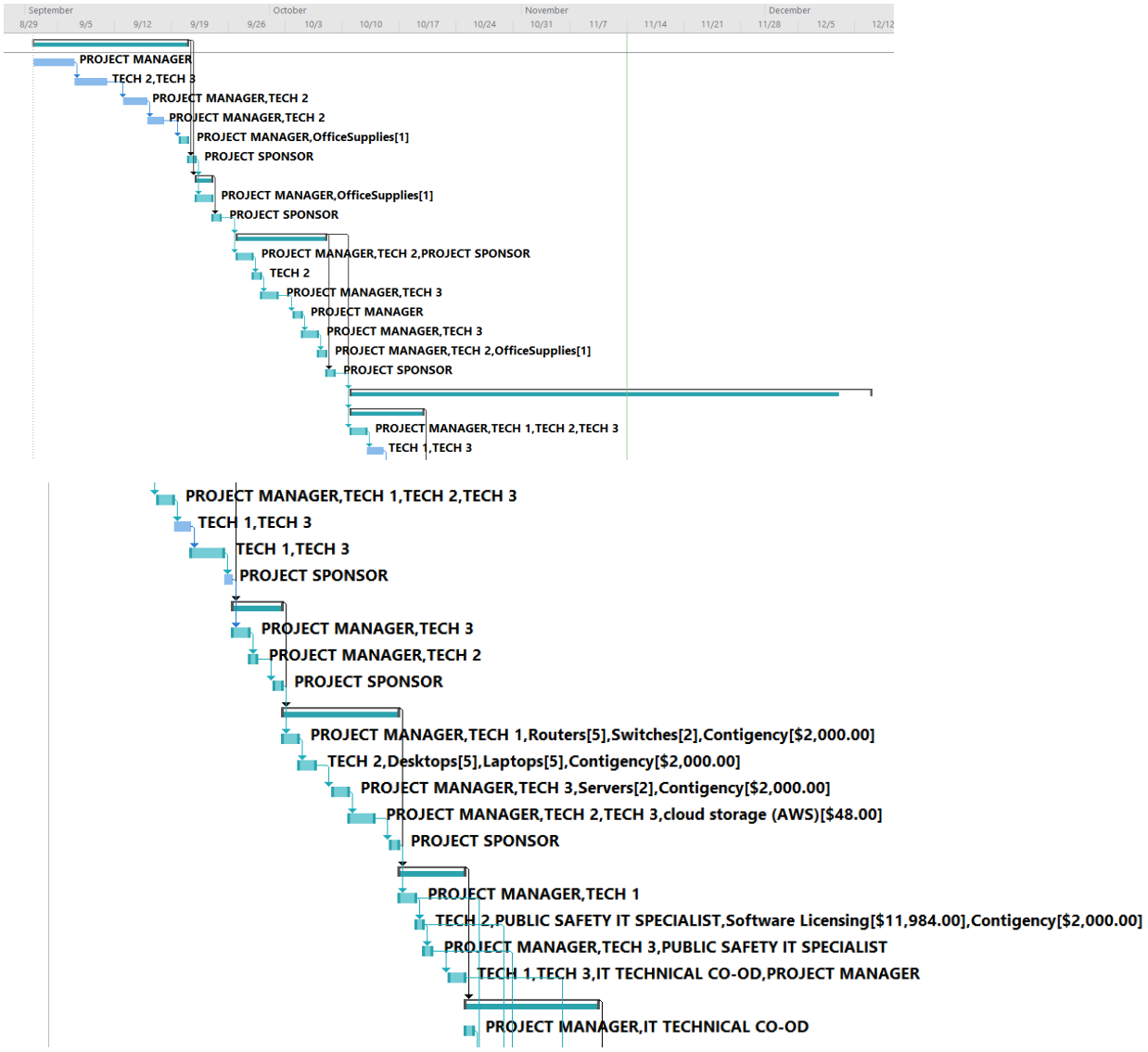
	Task Name	Duration	Start	Finish	Predec	Resource Names	Cost
25	**DESIGN**	**4 days**	**Wed 10/20/2**	**Mon 10/25/2**	**20**		**$1,920.00**
26	DEVELOPING ICT DIAGRAM	2 days	Wed 10/20/21	Thu 10/21/21	24,20	PROJECT MANAGER,TECH 3	$1,280.00
27	ARCHITECTURAL DESIGN	1 day	Fri 10/22/21	Fri 10/22/21	26	PROJECT MANAGER,TECH 2	$640.00
28	CLIENT APPROVAL	1 day	Mon 10/25/21	Mon 10/25/21	27	PROJECT SPONSOR	$0.00
29	**CONSTRUCTION**	**10 days**	**Tue 10/26/21**	**Mon 11/8/21**	**25**		**$30,287.00**
30	UPGRADING NETWORKS	2 days	Tue 10/26/21	Wed 10/27/21	28	PROJECT MANAGER,TECH 1,Routers[5],Switches[2],Contigency[$2,000.00]	$5,284.00
31	REPLACING WORKSTATIONS	2 days	Thu 10/28/21	Fri 10/29/21	30	TECH 2,Desktops[5],Laptops[5],Contigency[$2,000.00]	$15,427.00
32	REPLACING SERVERS	2 days	Mon 11/1/21	Tue 11/2/21	31	PROJECT MANAGER,TECH 3,Servers[2],Contigency[$2,000.00]	$6,840.00
33	MIGRATING BACKUP STORAGE FROM ONPREMISE TO CLOUD	3 days	Wed 11/3/21	Fri 11/5/21	32	PROJECT MANAGER,TECH 2,TECH 3,cloud storage (AWS)[$48.00]	$2,736.00
34	CLIENT APPROVAL	1 day	Mon 11/8/21	Mon 11/8/21	33	PROJECT SPONSOR	$0.00
35	**INTEGRATION**	**6 days**	**Tue 11/9/21**	**Tue 11/16/21**	**29**		**$18,800.00**
36	CONFIGURING NETWORKS	2 days	Tue 11/9/21	Wed 11/10/21	34	PROJECT MANAGER,TECH 1	$1,280.00
37	INSTALLING SOFTWARES IN WORKSTATIONS	1 day	Thu 11/11/21	Thu 11/11/21	36	TECH 2,PUBLIC SAFETY IT SPECIALIST,Software Licensing[$11,984.00],Contigency[$2,000.00]	$14,424.00
38	SERVER MIGRATION	1 day	Fri 11/12/21	Fri 11/12/21	37	PROJECT MANAGER,TECH 3,PUBLIC SAFETY IT SPECIALIST	$824.00
39	BACKUP STORAGE MIGRATION TO CLOUD	2 days	Mon 11/15/21	Tue 11/16/21	38	TECH 1,TECH 3,IT TECHNICAL CO-OD,PROJECT MANAGER	$2,272.00
40	**TESTING**	**10 days**	**Wed 11/17/2**	**Thu 12/2/21**	**35**		**$7,346.00**
41	DEVELOP A TEST PLAN	1 day	Wed 11/17/21	Wed 11/17/21		PROJECT MANAGER,IT TECHNICAL CO-OD	$624.00
42	DEFINE TEST CASES	1 day	Thu 11/18/21	Thu 11/18/21	41	PROJECT MANAGER,TECH 1,IT TECHNICAL CO-OD	$880.00
43	**HARDWARE AND SOFTWARE TESTING**	**6 days**	**Fri 11/19/21**	**Tue 11/30/21**	**42**		**$4,712.00**
44	TESTING THE NETWORKS CONNECTIVITY	1 day	Fri 11/19/21	Fri 11/19/21	36	IT TECHNICAL CO-OD,TECH 1,PROJECT MANAGER	$880.00
45	TESTING NEW WORKSTATIONS	1 day	Mon 11/22/21	Mon 11/22/21	37	PROJECT MANAGER,PUBLIC SAFETY IT SPECIALIST	$568.00
46	TESTING SERVERS	2 days	Tue 11/23/21	Wed 11/24/21	38	IT TECHNICAL CO-OD,PROJECT MANAGER,PUBLIC SAFETY IT SPECIALIST	$1,616.00
47	PERFORM TESTING FOR BACKUP DATA ON CLOUD	2 days	Mon 11/29/21	Tue 11/30/21	39	PROJECT MANAGER,PUBLIC SAFETY IT SPECIALIST,TECH 1	$1,648.00
48	**SYSTEM TESTING**	**2 days**	**Wed 12/1/21**	**Thu 12/2/21**	**43**		**$1,130.00**
49	ANALYZING THE TEST RESULTS	1 day	Wed 12/1/21	Wed 12/1/21	42	IT TECHNICAL CO-OD,PROJECT MANAGER,TECH 1,OfficeSupplies[1]	$1,130.00
50	CLIENT APPROVAL	1 day	Thu 12/2/21	Thu 12/2/21	49	PROJECT SPONSOR	$0.00

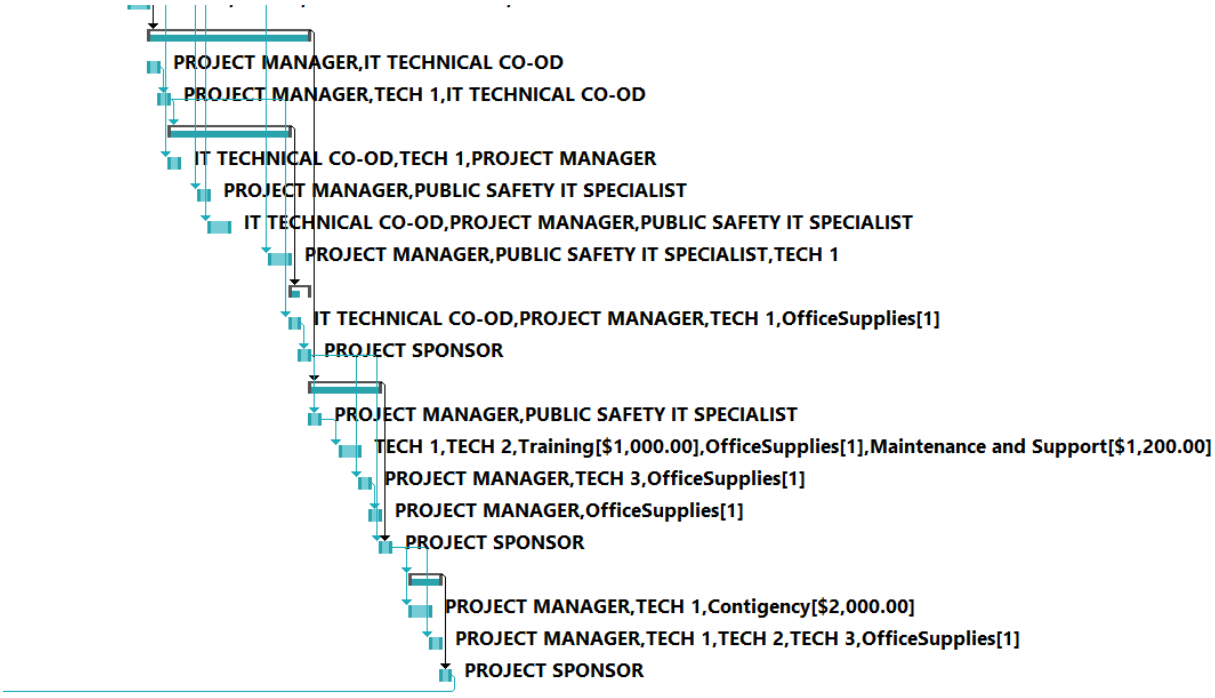
51	**IMPLEMENTATION**	**5 days**	**Fri 12/3/21**	**Thu 12/9/21**	**40**		**$5,566.00**
52	PLANNING A TRAINING PROGRAM	1 day	Fri 12/3/21	Fri 12/3/21	50	PROJECT MANAGER,PUBLIC SAFETY IT SPECIALIST	$568.00
53	CONDUCTING THE TRAININGS	2 days	Mon 12/6/21	Tue 12/7/21	52	TECH 1,TECH 2,Training[$1,000.00],OfficeSupplies[1],Maintenance and Support[$1,200.00]	$3,474.00
54	DOCUMENTATION	1 day	Wed 12/8/21	Wed 12/8/21	50	PROJECT MANAGER,TECH 3,OfficeSupplies[1]	$890.00
55	DELIVERABLE : PROJECT EXECUTION	1 day	Thu 12/9/21	Thu 12/9/21	54	PROJECT MANAGER,OfficeSupplies[1]	$634.00
56	MILESTONE - APPROVAL OF PROJECT EXECUTION	1 day	Fri 12/10/21	Fri 12/10/21	51,50	PROJECT SPONSOR	$0.00
57	**PROJECT CLOSURE**	**3 days**	**Mon 12/13/2**	**Wed 12/15/2**	**56**		**$4,682.00**
58	PREPARE PROJECT REPORT AND PRESENTATION	2 days	Mon 12/13/21	Tue 12/14/21	56	PROJECT MANAGER,TECH 1,Contigency[$2,000.00]	$3,280.00
59	PREPARE ANNUAL REPORT	1 day	Wed 12/15/21	Wed 12/15/21	56	PROJECT MANAGER,TECH 1,TECH 2,TECH 3,OfficeSupplies[1]	$1,402.00
60	MILESTONE - APPROVAL OF PROJECT REPORT	1 day	Thu 12/16/21	Thu 12/16/21	57	PROJECT SPONSOR	$0.00
61	**PROJECT EVALUATION**				**60**	PROJECT SPONSOR	**$0.00**

The above WBS has no over-allocated resources as the resources were scheduled accordingly to avoid any conflicts and to balance the workload among the team. This serves as the baseline for revising the original project plan.

BASELINE GANTT CHART:

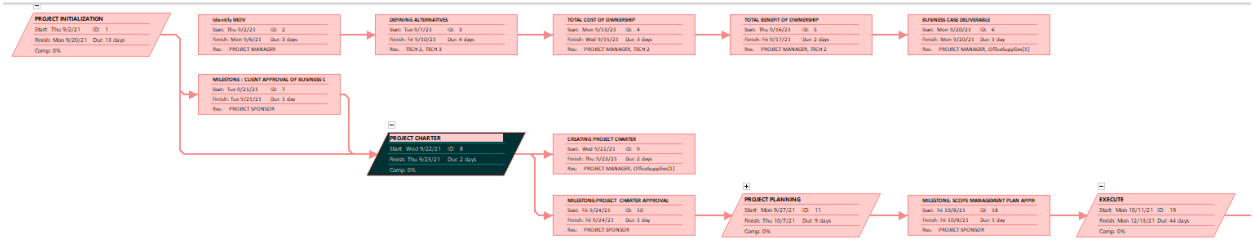
The baseline Gantt Chart illustrates the annual phases of the 4-year original project.

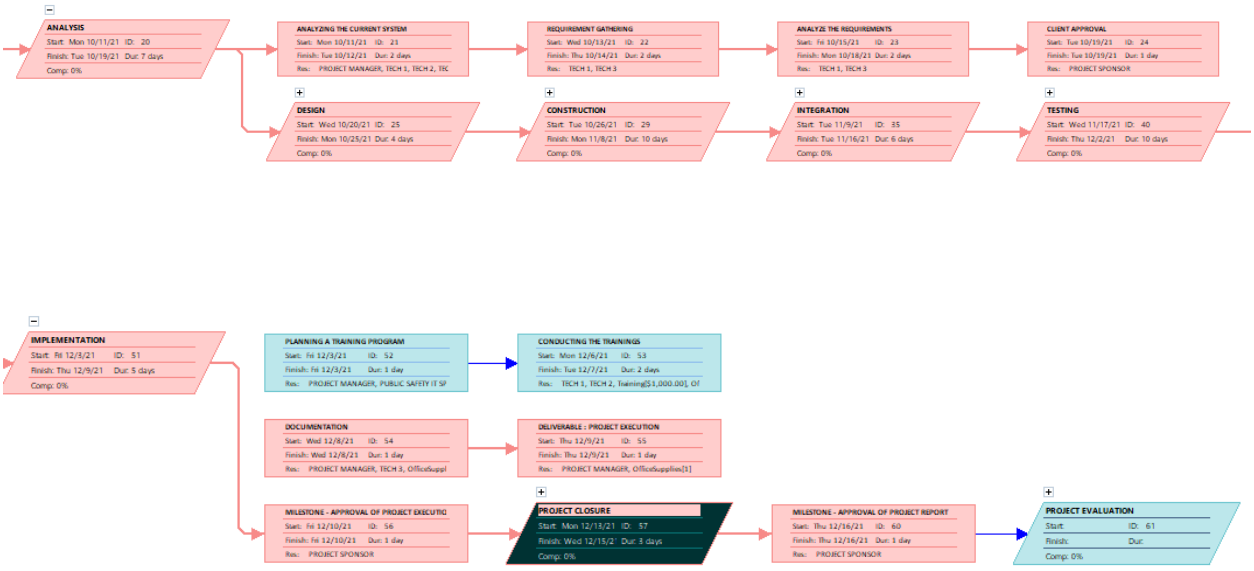




BASELINE CRITICAL PATH:

The original project has multiple critical paths shown below. Each of those paths (except the major critical path) starts but does not finish at Project Evaluation phase. The critical path is important because it represents the longest path and the shortest period in which the project may be completed.





BASELINE COST OF RESOURCES:

Below is the table that describes the cost of resources for the original project.

Resource	Cost	Source
Project Manager	**$48 per hour**	**https://www.zippia.com/software-project-manager-jobs/salary/**
Tech Team (Tech 1, Tech 2 , Tech 3)	**$32 per hour**	**https://www.salary.com/research/salary/recruiting/tech-analyst-hourly-wages**
IT Co-Ordinator	**$30 per hour**	**https://www.zippia.com/technology-coordinator-jobs/salary/**
Public Safety IT Specialist	**$23 per hour**	**https://www.governmentjobs.com/jobs/3256500-0/public-safety-specialist-ft**

Resource	Cost	Source
WIRELESS NETWORK **AX3600 Wi-Fi 6 Access Point (WAX218PA)**	$180 per Router	https://www.netgear.com/business/wifi/access-points/listing-filter/multigig-2/under-275/ax3600/
WIRED NETWORK **Cisco® Catalyst® Digital Building Series Switch PoE**	$442 per device	https://networkdevicesinc.com/products/cdb-8p?variant=32781089570919 https://www.cisco.com/c/en/us/products/collateral/switches/catalyst-digital-building-series-switches/datasheet-c78-738206.html
WORKSTATIONS **-HP Z2 Tower G5 Workstation** **-Dell Latitude 5400 Chromebook Workstation Laptops**	$1,274 per workstation $1,309 per laptop	https://www.hp.com/us-en/shop/pdp/hp-z2-tower-g5-workstation https://www.dell.com/en-us/work/shop/dell-laptops-and-notebooks/latitude-5400-chromebook-enterprise/spd/latitude-14-5400-chrome-laptop/xctolc540014us3
SERVER **HP ProLiant ML350 Gen10 Server**	$1,780 per server	Specs HPE ProLiant ML350 Gen10 Server (Quick Specs/a00021852enw.pdf) Cost HPE ProLiant ML350 Gen10 server | HPE Store US
BACKUP STORAGE **Cloud (AWS- Glacier)**	Glacier $0.004/ GB Per month	https://aws.amazon.com/s3/pricing/
Microsoft Office 365	$580 per year	https://www.mychoicesoftware.com/products/microsoft-office-professional-plus-2019-open-government

MS Windows Server (OS) **MS Windows 10 pro**	$1,500 per year $199 per year	https://www.microsoft.com/en-ie/windows-server/pricing https://www.microsoft.com/en-us/d/windows-10-pro/df77x4d43rkt?activetab=pivot:overviewtab
Municode	$350 per year	https://www.municode.com/documents
Arc GIS	$2,600 per year	https://www.esri.com/en-us/arcgis/products/arcgis-desktop-subscription
AutoCAD Civil 3D **AutoCAD LT**	$2,315 per year $440 per year	https://www.autodesk.ae/products/civil-3d/overview#:~:text=The%20price%20of%20an%20annual,3D%20subscription%20is%20US%246%2C250%20 https://www.autodesk.com/products/autocad-lt/overview
Watchguard	$500 per year	https://www.cdw.com/product/watchguard-total-security-suite-subscription-license-renewal-upgrade-li/4242815
Others (Accela, Black Bear, Prophoenix, Hypercaster, Infoview)	$3,500	Estimation based on existing software prices
Office Supplies	$2,000 per year	https://www.officedepot.com/a/products/563024/Office-Depot-Brand-EnviroCopy-Paper-Letter/ https://www.walmart.com/ip/SKILCRAFT-NSN4936006-Employee-Start-up-Office-Kit-1-Kit/34911380?wmlspartner=wlpa&selectedSellerId=0

NOTE: The MS Project File of the Baseline plan is attached along with this document.

Quoted prices might change with time depending on the vendor.

PROJECT RISK ANALYSIS AND PLAN

The Risks were identified for each of the PLC phases.

Risk Identification Framework

RISK	RISK DESCRIPTION	STRATEGY DESCRIPTION	OWNER
PHASE 1 *Project Initialization* Budget Changes	Budget reductions will reduce the scope and time. If budget increases, scope and time increases accordingly. It is unknown-known. The source is internal and emerges from people (the project sponsor and project manager)	The project team will initialize the project under budget. If the budget decreases, then hours of work will be decreased, and costs will be decreased. If the budget increases, the surplus will be applied to increase the scope proportionally. The budget will also include a considerable contingency amount to offset minor budget changes.	Project Sponsor and Project Manager
PHASE 2 *Project Charter and Scope Management Plan* Changed Scope	If the project sponsor widens or narrows the scope during the project charter and scope management phase, the scope management plan will have to be adjusted. It is unknown-known. The source is internal and emerges from people (the project sponsor)	Having timely meetings with the stakeholder to discuss any possible changes will allow our team to have time to manage changes.	Project Manager
PHASE 3 *Project Execution and Control* Key Personnel Leaves Project (IT Security Consultant)	If the IT Security Consultant leaves the project, the project's security aspects might be compromised and difficult to complete within schedule. It is unknown-known. The source is internal and emerges from people (IT Security Consultant, project sponsor)	The project team will be in agile mode to offset the IT Security Consultant absence. Schedule and tasks will be reassigned to meet security needs.	Project Manager, Project Team

PHASE 4 *Close Project* Failure to Meet Schedule	If the project team fails to meet schedule, the closure milestone might be delayed in completion. This may lead to a delay in the subsequent phases. It is known-unknown. The source is internal/external and emerges from people, organizational, process and technology.	The team will schedule plans carefully with slacks and prioritize maintaining the schedule.	Project Team and Stakeholder
PHASE 5 *Evaluating the Project Success* Survey Process Failures	Our project evaluation is dependent on the successful survey process. Delayed surveys and inaccurate responses will adversely affect the evaluated results. It is known-known. The source is internal/external and it emerges from people, process.	The project team will send follow up emails for clarification on responses and notifications to non-responses. These will ensure more accurate responses and a better evaluation.	Project Team

REVISED PROJECT SUMMARY REPORT

The following table presents the revised (over budget) project summary report with details of project attributes obtained from the Microsoft Project.

Dates			
Start	09/02/21	Finish	12/30/21
Baseline start	09/02/21	Baseline finish	12/16/21
Actual start	NA	Actual finish	NA
Variance	0 days	Finish Variance	10 days

Duration			
Schedule	84 days	Remaining	84 days
Baseline	74 days	Actual	0 days
Variance	10 days	Percent complete	0%

Work			
Schedule	1,296 hours	Remaining	1,296 hours
Baseline	1,216 hours	Actual	0 hours
Variance	80 hours	Percent complete	0%

Costs			
Schedule	$89,655	Remaining	$89,655
Baseline	$86,375	Actual	$0
Variance	$3,280		

Task status		**Resources status**	
Tasks not yet started	68	Work resources	8
In progress	0	Over allocated work resources	0
Completed	0	Material resources	6

The total duration for the tasks is 84 days and the expected budget is $89,655.

REVISED TOTAL COST OF OWNERSHIP (TCO):

The following table lists the revised TCO:

Total Cost of Ownership (TCO)

Resource	Description	Proposed Plan Cost	
Salaries Personnel	Project Manager (1 person*$48/hr *420 hrs)	$20,160	
	Tech Team (3 people*$32/hr	$5,760	
	Tech 1 for 180 hrs	$6,560	
	Tech 2 for 205 hrs	$6,720	
	Tech 3 for 210 hrs)	$19,040	
	TOTAL (**t1**)		**$39,200**
IT Dept Salaries:	City Dept Salaries:		
	1 full time IT coordinator (2 weeks, 80 hrs * $30)	$2,400	
	Public safety IT specialist (2 weeks, 80 hrs * $23)	$1,840 $4,240	**$4,240**
IT Security Consultant:	Security Analyst (12 days, 96 hrs * $41)	$3,936	**$3,936**
	TOTAL (**t2**)		**$47,376**
Server	Replacing 8 servers, servers 2 per year $1780 per server	$3,560	
Workstation Desktops	Replacing 5 per year, $1274 per desktop workstation	$6,370	
Workstation Laptops	Replacing 5 per year, $1309 per laptop workstation	$6,545	
Wireless Network	Replacing facilities routers	$1,120	

	1 facility per year, 5 per year, $224 per router	
Wired Network	Replacing 2 switches per year, $442 per switch	$884
Storage	Replacing backup servers to store data into cloud, 1TB/ month	$48
Software	Maintaining current software licensing	$11,984
Training	2 days on site training, $500 per day (every year)	$1,000
Maintenance and Support	1 week, 40 hrs * $30 per hour TOTAL (**t3**)	$1,200 **$32,711**
GRAND TOTAL	**t1+t2+t3**	**$80,087**

From the TCO table above, the IT Security Consultant is assigned 96 hours of work which is approximately 12 days of work excluding weekends and holidays. His average hourly salary is $41 and a yearly salary of 3,936. The Grand Total amount of $80,087 is within the budgeted amount of $88,000 (Thus 20% reduction of $110,000). Each resource cost is listed and the per unit cost of each resource is supported by a source link shown in the cost of resources table below the budget. The cost overview given by the WBS has exactly allocated hours to the personnel, but the TCO also has extra padding hours for the personnel which is the reason for the discrepancy in the values.

REVISED BUDGET:

Below is the table that shows the revised budget from the first year to the fourth year.

	Year 1	Year 2	Year 3	Year 4
Funds	$88,000	$88,000	$88,000	$88,000
Project Team Salaries	($39,200)	($39,200)	($39,200)	($39,200)
IT Dept Salaries	($4,240)	($4,240)	($4,240)	($4,240)
IT Security Consultant	($3,936)	($3,936)	($3,936)	($3,936)
Office Supplies	($2,000)	($2,000)	($2,000)	($2,000)
Proposed Plan	($32,711)	($32,711)	($32,711)	($32,711)
Contingency	($10,000)	($10,000)	($10,000)	($10,000)
Total Deficit	($4,087)	($4,087)	($4,087)	($4,087)

From the budget table above, a yearly fund of $88,000 is allocated for the project out of which all costs for each year are deducted, which includes the contingency amount of $10,000. The total deficit for each year is ascertained by deducting the total annual costs from the annual fund. A deficit of $4,087 is obtained for each year.

REVISED WORK BREAKDOWN STRUCTURE:

The revised WBS illustrates the annual phases of the 4-year Revised project.

	Task Name	Duration	Start	Finish	Predece	Resource Names	Cost
1	**PROJECT INITIALIZATION**	**13 days**	**Thu 9/2/21**	**Mon 9/20/21**			**$7,034.00**
2	Identify MOV	3 days	Thu 9/2/21	Mon 9/6/21		PROJECT MANAGER	$1,152.00
3	DEFINING ALTERNATIVES	4 days	Tue 9/7/21	Fri 9/10/21	2	TECH 2,TECH 3	$2,048.00
4	TOTAL COST OF OWNERSHIP	3 days	Mon 9/13/21	Wed 9/15/21	3	PROJECT MANAGER,TECH 2	$1,920.00
5	TOTAL BENEFIT OF OWNERSHIP	2 days	Thu 9/16/21	Fri 9/17/21	4	PROJECT MANAGER,TECH 2	$1,280.00
6	BUSINESS CASE DELIVERABLE	1 day	Mon 9/20/21	Mon 9/20/21	5	PROJECT MANAGER,OfficeSupplies[1]	$634.00
7	MILESTONE : CLIENT APPROVAL OF BUSINESS CASE	1 day	Tue 9/21/21	Tue 9/21/21	1	PROJECT SPONSOR	$0.00
8	**PROJECT CHARTER**	**2 days**	**Wed 9/22/21**	**Thu 9/23/21**	**7,1**		**$1,018.00**
9	CREATING PROJECT CHARTER	2 days	Wed 9/22/21	Thu 9/23/21	7	PROJECT MANAGER,OfficeSupplies[1]	$1,018.00
10	MILESTONE:PROJECT CHARTER APPROVAL	1 day	Fri 9/24/21	Fri 9/24/21	8	PROJECT SPONSOR	$0.00
11	**PROJECT PLANNING**	**10 days**	**Mon 9/27/21**	**Fri 10/8/21**	**10**		**$6,026.00**
12	IDENTIFY SCOPE OF PROJECT	2 days	Mon 9/27/21	Tue 9/28/21	10	PROJECT MANAGER,TECH 2,PROJECT SPONSOR	$1,280.00
13	DESIGNING THE STRUCTURE CHART	1 day	Wed 9/29/21	Wed 9/29/21	12	TECH 2	$256.00
14	CREATING THE WORK BREAKDOWN STRUCTURE	2 days	Thu 9/30/21	Fri 10/1/21	13	PROJECT MANAGER,TECH 3	$1,280.00
15	IDENTIFY AND ALLOCATE RESOURCES	1 day	Mon 10/4/21	Mon 10/4/21	14	PROJECT MANAGER	$384.00
16	SECURITY PLANNING	2 days	Mon 10/4/21	Tue 10/5/21	15SS	IT SECURITY CONSULTANT	$656.00
17	ESTIMATING THE BUDGET	2 days	Wed 10/6/21	Thu 10/7/21	15	PROJECT MANAGER,TECH 3	$1,280.00
18	DELIVARABLE : SCOPE MANGEMENT PLAN	1 day	Fri 10/8/21	Fri 10/8/21	17	PROJECT MANAGER,TECH 2,OfficeSupplies[1]	$890.00
19	MILESTONE: SCOPE MANAGEMENT PLAN APPROVAL	1 day	Mon 10/11/21	Mon 10/11/21	11	PROJECT SPONSOR	$0.00
20	**EXECUTE**	**49 days**	**Tue 10/12/21**	**Tue 12/21/21**	**19**		**$70,895.00**
21	**ANALYSIS**	**8 days**	**Tue 10/12/21**	**Thu 10/21/21**	**19**		**$5,008.00**
22	ANALYZING THE CURRENT SYSTEM	2 days	Tue 10/12/21	Wed 10/13/21	19,11	PROJECT MANAGER,TECH 1,TECH 2,TECH 3	$2,304.00
23	CURRENT SYSTEM SECURITY ANALYSIS	1 day	Tue 10/12/21	Tue 10/12/21	19	IT SECURITY CONSULTANT	$328.00
24	REQUIREMENT GATHERING	2 days	Thu 10/14/21	Fri 10/15/21	22,23	TECH 1,TECH 3	$1,024.00

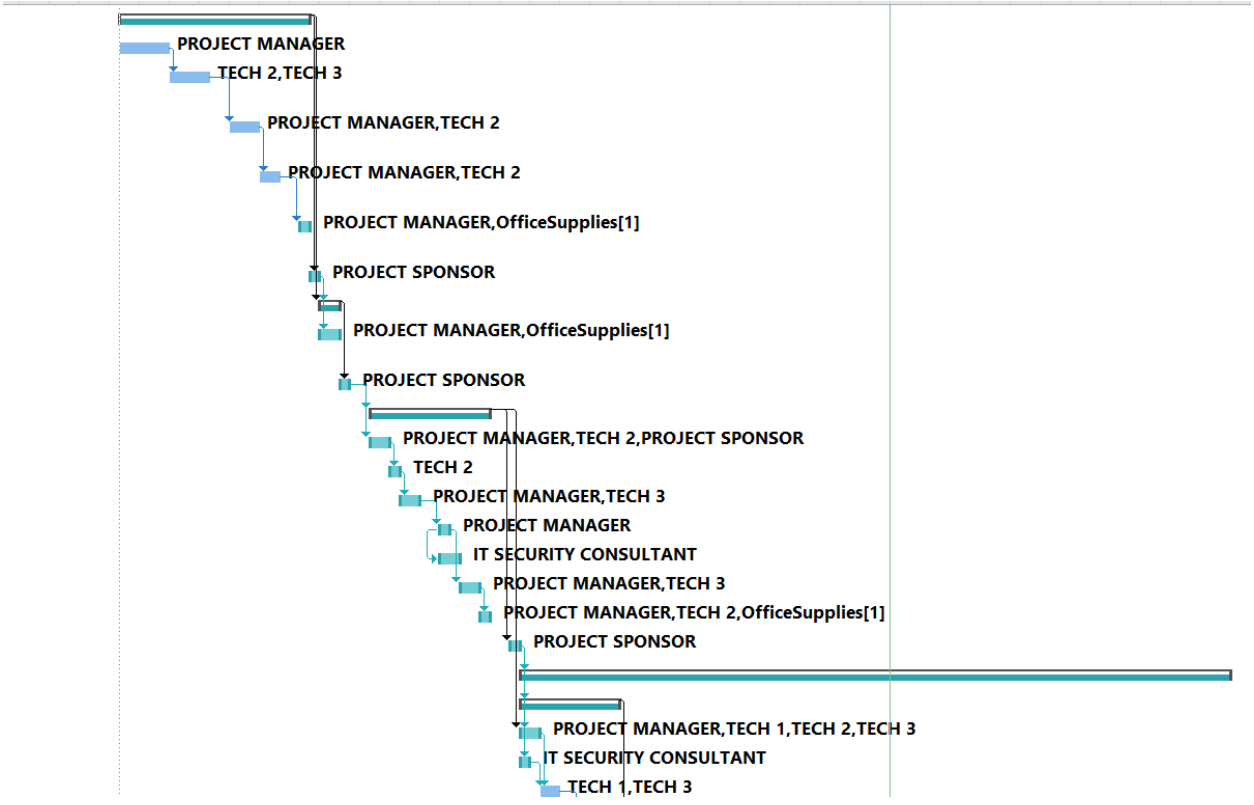
	Task Name	Duration	Start	Finish	Predece	Resource Names	Cost
25	ANALYZE THE REQUIREMENTS	2 days	Mon 10/18/21	Tue 10/19/21	24	TECH 1,TECH 3	$1,024.00
26	SECURITY REQUIREMENTS ANALYSIS	1 day	Wed 10/20/21	Wed 10/20/21	25	IT SECURITY CONSULTANT	$328.00
27	CLIENT APPROVAL	1 day	Thu 10/21/21	Thu 10/21/21	25,26	PROJECT SPONSOR	$0.00
28	**DESIGN**	**5 days**	**Fri 10/22/21**	**Thu 10/28/21**	**21**		**$2,248.00**
29	DEVELOPING ICT DIAGRAM	2 days	Fri 10/22/21	Mon 10/25/21	27,21	PROJECT MANAGER,TECH 3	$1,280.00
30	ARCHITECTURAL DESIGN	1 day	Tue 10/26/21	Tue 10/26/21	29	PROJECT MANAGER,TECH 2	$640.00
31	IT SECURITY DESIGN	1 day	Wed 10/27/21	Wed 10/27/21	30	IT SECURITY CONSULTANT	$328.00
32	CLIENT APPROVAL	1 day	Thu 10/28/21	Thu 10/28/21	30,31	PROJECT SPONSOR	$0.00
33	**CONSTRUCTION**	**11 days**	**Fri 10/29/21**	**Fri 11/12/21**	**28**		**$30,615.00**
34	UPGRADING NETWORKS	2 days	Fri 10/29/21	Mon 11/1/21	32	PROJECT MANAGER,TECH 1,Routers[5],Switches[2],Contigency[$2,000.00]	$5,284.00
35	REPLACING WORKSTATIONS	2 days	Tue 11/2/21	Wed 11/3/21	34	TECH 2,Desktops[5],Laptops[5],Contigency[$2,000.00]	$15,427.00
36	REPLACING SERVERS	2 days	Thu 11/4/21	Fri 11/5/21	35	PROJECT MANAGER,TECH 3,Servers[2],Contigency[$2,000.00]	$6,840.00
37	MIGRATING BACKUP STORAGE FROM ONPREMISE TO CLOUD	3 days	Mon 11/8/21	Wed 11/10/21	36	PROJECT MANAGER,TECH 2,TECH 3,cloud storage (AWS)[$48.00]	$2,736.00
38	VERIFYING THE SECURITY REQUIREMENTS OF BACKUP STORAGE	1 day	Thu 11/11/21	Thu 11/11/21	37	IT SECURITY CONSULTANT	$328.00
39	CLIENT APPROVAL	1 day	Fri 11/12/21	Fri 11/12/21	37,38	PROJECT SPONSOR	$0.00
40	**INTEGRATION**	**8 days**	**Mon 11/15/2**	**Wed 11/24/2**	**33**		**$19,456.00**
41	CONFIGURING NETWORKS	2 days	Mon 11/15/21	Tue 11/16/21	39	PROJECT MANAGER,TECH 1	$1,280.00
42	INSTALLING SOFTWARES IN WORKSTATIONS	1 day	Wed 11/17/21	Wed 11/17/21	41	TECH 2,PUBLIC SAFETY IT SPECIALIST,Software Licensing[$11,984.00],Conti	$14,424.00
43	SERVER MIGRATION	1 day	Thu 11/18/21	Thu 11/18/21	42	PROJECT MANAGER,TECH 3,PUBLIC SAFETY IT SPECIALIST	$824.00
44	SECURITY CHECKS FOR N/W,WORKSTATIONS AND SERVERS	2 days	Fri 11/19/21	Mon 11/22/21	41,42,43	IT SECURITY CONSULTANT	$656.00
45	BACKUP STORAGE MIGRATION TO CLOUD	2 days	Tue 11/23/21	Wed 11/24/21	43,44	TECH 1,TECH 3,IT TECHNICAL CO-OD,PROJECT MANAGER	$2,272.00
46	**TESTING**	**12 days**	**Mon 11/29/2**	**Tue 12/14/21**	**40**		**$8,002.00**
47	DEVELOP A TEST PLAN	1 day	Mon 11/29/21	Mon 11/29/21	40	PROJECT MANAGER,IT TECHNICAL CO-OD	$624.00
48	DEFINE TEST CASES	1 day	Tue 11/30/21	Tue 11/30/21	47	PROJECT MANAGER,TECH 1,IT TECHNICAL CO-OD	$880.00
49	**HARDWARE AND SOFTWARE TESTING**	**6 days**	**Wed 12/1/21**	**Wed 12/8/21**	**48**		**$4,712.00**
50	TESTING THE NETWORKS CONNECTIVITY	1 day	Wed 12/1/21	Wed 12/1/21	41	IT TECHNICAL CO-OD,TECH 1,PROJECT MANAGER	$880.00
51	TESTING NEW WORKSTATIONS	1 day	Thu 12/2/21	Thu 12/2/21	42	PROJECT MANAGER,PUBLIC SAFETY IT SPECIALIST	$568.00

51	TESTING NEW WORKSTATIONS	1 day	Thu 12/2/21	Thu 12/2/21	42	PROJECT MANAGER,PUBLIC SAFETY IT SPECIALIST	$568.00
52	TESTING SERVERS	2 days	Fri 12/3/21	Mon 12/6/21	43	IT TECHNICAL CO-OD,PROJECT MANAGER,PUBLIC SAFETY IT SPECIALIST	$1,616.00
53	PERFORM TESTING FOR BACKUP DATA ON CLOUD	2 days	Tue 12/7/21	Wed 12/8/21	45	PROJECT MANAGER,PUBLIC SAFETY IT SPECIALIST,TECH 1	$1,648.00
54	**SYSTEM TESTING**	**1 day**	**Thu 12/9/21**	**Thu 12/9/21**	**49**		**$1,130.00**
55	ANALYZING THE TEST RESULTS	1 day	Thu 12/9/21	Thu 12/9/21	48	IT TECHNICAL CO-OD,PROJECT MANAGER,TECH 1,OfficeSupplies[1]	$1,130.00
56	SECURITY TESTING	2 days	Fri 12/10/21	Mon 12/13/21	49,54	IT SECURITY CONSULTANT	$656.00
57	CLIENT APPROVAL	1 day	Tue 12/14/21	Tue 12/14/21	55,56	PROJECT SPONSOR	$0.00
58	**IMPLEMENTATION**	**5 days**	**Wed 12/15/2**	**Tue 12/21/21**	**46**		**$5,566.00**
59	PLANNING A TRAINING PROGRAM	1 day	Wed 12/15/21	Wed 12/15/21	57	PROJECT MANAGER,PUBLIC SAFETY IT SPECIALIST	$568.00
60	CONDUCTING THE TRAININGS	2 days	Thu 12/16/21	Fri 12/17/21	59	TECH 1,TECH 2,Training[$1,000.00],OfficeSupplies[1],Maintenance and Supp	$3,474.00
61	DOCUMENTATION	1 day	Mon 12/20/21	Mon 12/20/21	57	PROJECT MANAGER,TECH 3,OfficeSupplies[1]	$890.00
62	DELIVERABLE : PROJECT EXECUTION	1 day	Tue 12/21/21	Tue 12/21/21	61	PROJECT MANAGER,OfficeSupplies[1]	$634.00
63	MILESTONE - APPROVAL OF PROJECT EXECUTION	1 day	Wed 12/22/21	Wed 12/22/21	58,62	PROJECT SPONSOR	$0.00
64	**PROJECT CLOSURE**	**3 days**	**Mon 12/27/2**	**Wed 12/29/2**	**63**		**$4,682.00**
65	PREPARE PROJECT REPORT AND PRESENTATION	2 days	Thu 12/23/21	Fri 12/24/21	63,58	PROJECT MANAGER,TECH 1,Contigency[$2,000.00]	$3,280.00
66	PREPARE ANNUAL REPORT	1 day	Mon 12/27/21	Mon 12/27/21	63,65	PROJECT MANAGER,TECH 1,TECH 2,TECH 3,OfficeSupplies[1]	$1,402.00
67	MILESTONE - APPROVAL OF PROJECT REPORT	1 day	Thu 12/30/21	Thu 12/30/21	64	PROJECT SPONSOR	$0.00
68	**PROJECT EVALUATION**				**67**	PROJECT SPONSOR	**$0.00**

The above revised WBS has no over-allocated resources as the resources were scheduled accordingly to avoid any conflicts and to balance the workload among the team. The IT Security Consultant was scheduled 80 hours annually. The addition of the IT Security Consultant made the schedule late by approximately 10 days and over budget as the new security tasks were added.

REVISED GANTT CHART:

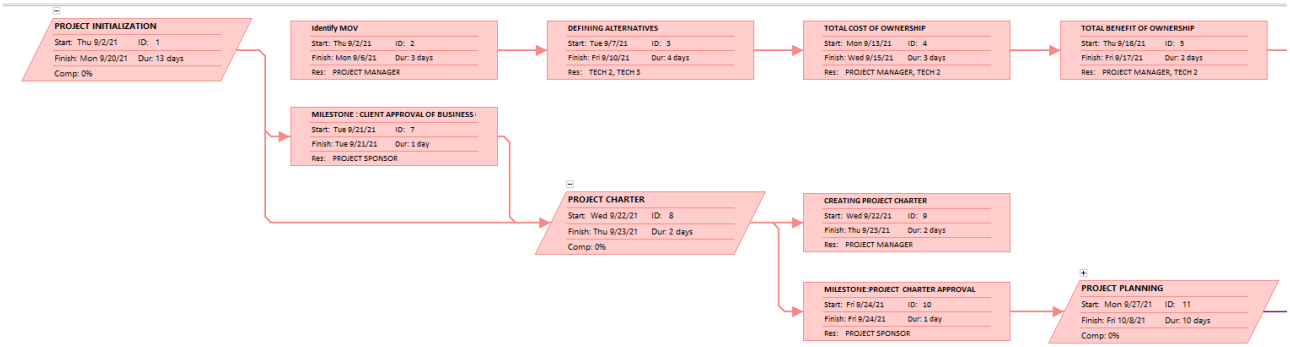
The Gantt Chart illustrates the annual phases of the 4-year revised project.

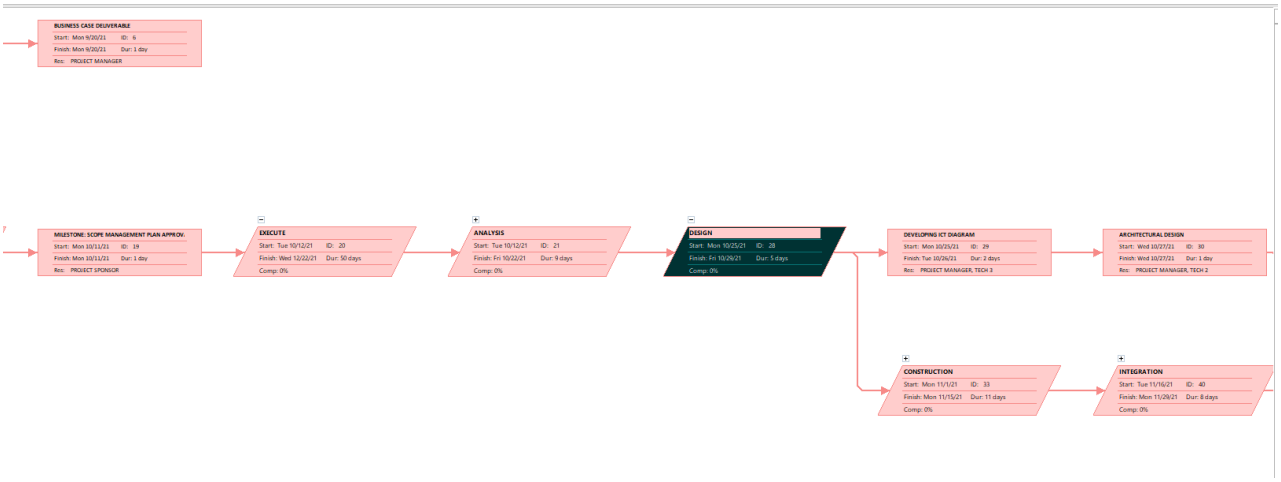


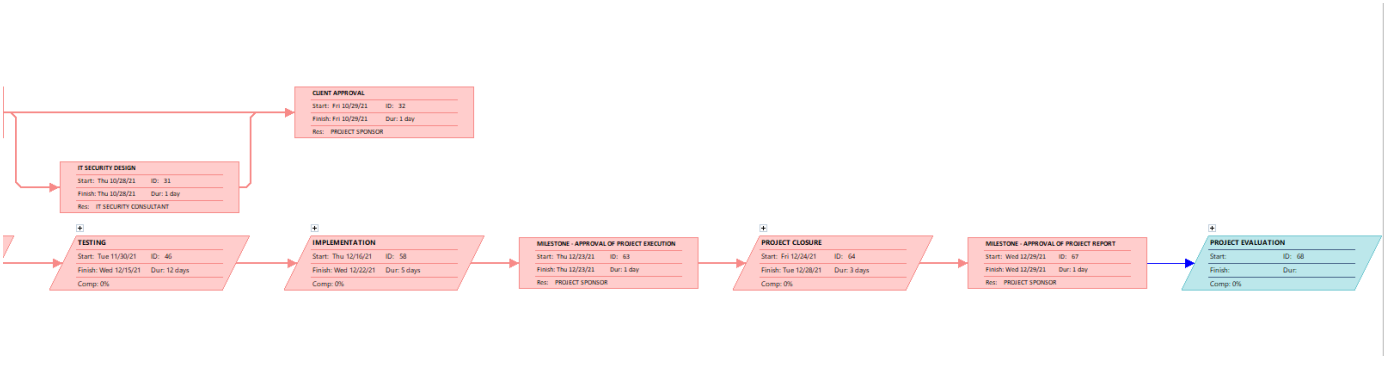

PROJECT MANAGER,TECH 1,TECH 2,TECH 3
IT SECURITY CONSULTANT
TECH 1,TECH 3
TECH 1,TECH 3
IT SECURITY CONSULTANT
PROJECT SPONSOR
PROJECT MANAGER,TECH 3
PROJECT MANAGER,TECH 2
IT SECURITY CONSULTANT
PROJECT SPONSOR
PROJECT MANAGER,TECH 1,Routers[5],Switches[2],Contigency[$2,000.00]
TECH 2,Desktops[5],Laptops[5],Contigency[$2,000.00]
PROJECT MANAGER,TECH 3,Servers[2],Contigency[$2,000.00]
PROJECT MANAGER,TECH 2,TECH 3,cloud storage (AWS)[$48.00]
IT SECURITY CONSULTANT
PROJECT SPONSOR
PROJECT MANAGER,TECH 1
TECH 2,PUBLIC SAFETY IT SPECIALIST,Software Licensing[$11,984.00],Contigency[$2,000.00
PROJECT MANAGER,TECH 3,PUBLIC SAFETY IT SPECIALIST
IT SECURITY CONSULTANT
TECH 1,TECH 3,IT TECHNICAL CO-OD,PROJECT MANAGER
PROJECT MANAGER,IT TECHNICAL CO-OD
PROJECT MANAGER,TECH 1,IT TECHNICAL CO-OD
PROJECT MANAGER,IT TECHNICAL CO-OD
PROJECT MANAGER,TECH 1,IT TECHNICAL CO-OD
IT TECHNICAL CO-OD,TECH 1,PROJECT MANAGER
PROJECT MANAGER,PUBLIC SAFETY IT SPECIALIST
IT TECHNICAL CO-OD,PROJECT MANAGER,PUBLIC SAFETY IT SPECIALIST
PROJECT MANAGER,PUBLIC SAFETY IT SPECIALIST,TECH 1
IT TECHNICAL CO-OD,PROJECT MANAGER,TECH 1,OfficeSupplies[1]
IT SECURITY CONSULTANT
PROJECT SPONSOR
PROJECT MANAGER,PUBLIC SAFETY IT SPECIALIST
TECH 1,TECH 2,Training[$1,000.00],OfficeSupplies[1],Maintenance and Support[$1,200.00]
PROJECT MANAGER,TECH 3,OfficeSupplies[1]
PROJECT MANAGER,OfficeSupplies[1]
PROJECT SPONSOR
PROJECT MANAGER,TECH 1,Contigency[$2,000.00]
PROJECT MANAGER,TECH 1,TECH 2,TECH 3,OfficeSupplies[1]
PROJECT SPONSOR

REVISED CRITICAL PATH:

The revised project has multiple critical paths. Each of those paths (except the major critical path) starts but does not finish at Project Evaluation phase. The critical path is important because it represents the longest path and the shortest period in which the project may be completed.







REVISED COST OF RESOURCES:

Below is the table that describes the revised cost of resources. The quoted prices from vendors supported by the source links may change with time as vendors update costs on their websites.

Resource	Cost	Source
Project Manager	$48 per hour	**https://www.zippia.com/software-project-manager-jobs/salary/**
Tech Team (Tech 1, Tech 2, Tech 3)	$32 per hour	**https://www.salary.com/research/salary/recruiting/tech-analyst-hourly-wages**
IT Co-Ordinator	$30 per hour	**https://www.zippia.com/technology-coordinator-jobs/salary/**
Public Safety IT Specialist	$23 per hour	**https://www.governmentjobs.com/jobs/3256500-0/public-safety-specialist-ft**
IT Security Consultant	$41 per hour	**https://www.payscale.com/research/US/Job=Information_Technology_(IT)_Consultant/Salary**

Resource	Cost	Source
WIRELESS NETWORK **AX3600 Wi-Fi 6 Access Point (WAX218PA)**	$180 per Router	**https://www.netgear.com/business/wifi/access-points/listing-filter/multigig-2/under-275/ax3600/**
WIRED NETWORK **Cisco® Catalyst® Digital Building Series Switch PoE**	$442 per device	**https://networkdevicesinc.com/products/cdb-8p?variant=32781089570919** **https://www.cisco.com/c/en/us/products/collateral/switches/catalyst-digital-building-series-switches/datasheet-c78-738206.html**

WORKSTATIONS **-HP Z2 Tower G5 Workstation** **-Dell Latitude 5400 Chromebook Workstation Laptops**	$1,274 per workstation $1,309 per laptop	**https://www.hp.com/us-en/shop/pdp/hp-z2-tower-g5-workstation** **https://www.dell.com/en-us/work/shop/dell-laptops-and-notebooks/latitude-5400-chromebook-enterprise/spd/latitude-14-5400-chrome-laptop/xctolc540014us3**
SERVER **HP ProLiant ML350 Gen10 Server**	$1,780 per server	Specs **HPE ProLiant ML350 Gen10 Server (Quick Specs/a00021852enw.pdf)** Cost **HPE ProLiant ML350 Gen10 server | HPE Store US**
BACKUP STORAGE **Cloud (AWS- Glacier)**	Glacier $0.004/ GB Per month	**https://aws.amazon.com/s3/pricing/**
Microsoft Office 365	$580 per year	**https://www.mychoicesoftware.com/products/microsoft-office-professional-plus-2019-open-government**
MS Windows Server (OS) **MS Windows 10 pro**	$1,500 per year $199 per year	**https://www.microsoft.com/en-ie/windows-server/pricing** **https://www.microsoft.com/en-us/d/windows-10-pro/df77x4d43rkt?activetab=pivot:overviewtab**
Municode	$350 per year	**https://www.municode.com/documents**
Arc GIS	$2,600 per year	**https://www.esri.com/en-us/arcgis/products/arcgis-desktop-subscription**
AutoCAD Civil 3D	$2,315 per year	**https://www.autodesk.ae/products/civil-3d/overview#:~:text=The%20price%20of%20an%20annual,3D%20subscr**

AutoCAD LT	$440 per year	**iption%20is%20US%246%2C250%20** **https://www.autodesk.com/products/autocad-lt/overview**
Watchguard	$500 per year	**https://www.cdw.com/product/watchguard-total-security-suite-subscription-license-renewal-upgrade-li/4242815**
Others (Accela, Black Bear, Prophoenix, Hypercaster, Infoview)	$3,500	Estimation based on existing software prices
Office Supplies	$2,000 per year	**https://www.officedepot.com/a/products/563024/Office-Depot-Brand-EnviroCopy-Paper-Letter/** **https://www.walmart.com/ip/SKILCRAFT-NSN4936006-Employee-Start-up-Office-Kit-1-Kit/34911380?wmlspartner=wlpa&selectedSellerId=0**

NOTE: The MS Project File of the Revised plan is attached along with this document.

Quoted prices might change with time depending on the vendor.

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EARNED VALUE REPORT (EVR)

The Earned Value Report below reflects the revised changes from baseline. The status date is set to 10/12/2021, the date the IT Security Consultant began working in the analysis phase.

	Task Name	Planned Value - PV (BCWS)	Earned Value - EV (BCWP)	AC (ACWP)	SV	CV	EAC	BAC	VAC	CPI	SPI	TCPI
1	**PROJECT INITIALIZATION**	**$7,034.00**	**$7,034.00**	**$7,034.00**	**$0.00**	**$0.00**	**$7,034.00**	**$7,034.00**	**$0.00**	**1**	**1**	**1**
7	MILESTONE : CLIENT APPROVAL OF BUSINESS CASE	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0	0	0
8	**PROJECT CHARTER**	**$1,018.00**	**$1,018.00**	**$1,018.00**	**$0.00**	**$0.00**	**$1,018.00**	**$1,018.00**	**$0.00**	**1**	**1**	**1**
10	MILESTONE:PROJECT CHARTER APPROVAL	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0	0	0
11	**PROJECT PLANNING**	**$5,370.00**	**$5,370.00**	**$6,026.00**	**$0.00**	**($656.00)**	**$6,026.00**	**$5,370.00**	**($656.00)**	**0.89**	**1**	**-0**
19	MILESTONE: SCOPE MANAGEMENT PLAN APPROVAL	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0	0	0
20	**EXECUTE**	**$2,304.00**	**$1,152.00**	**$1,480.00**	**($1,152.00)**	**($328.00)**	**$87,709.27**	**$68,271.00**	**($19,438.27)**	**0.78**	**0.5**	**1**
21	**ANALYSIS**	**$2,304.00**	**$1,152.00**	**$1,480.00**	**($1,152.00)**	**($328.00)**	**$5,591.11**	**$4,352.00**	**($1,239.11)**	**0.78**	**0.5**	**1.11**
28	**DESIGN**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$2,248.00**	**$1,920.00**	**($328.00)**	**0**	**0**	**1**
33	**CONSTRUCTION**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$30,615.00**	**$30,287.00**	**($328.00)**	**0**	**0**	**1**
40	**INTEGRATION**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$19,456.00**	**$18,800.00**	**($656.00)**	**0**	**0**	**1**
46	**TESTING**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$8,002.00**	**$7,346.00**	**($656.00)**	**0**	**0**	**1**
58	**IMPLEMENTATION**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$5,566.00**	**$5,566.00**	**$0.00**	**0**	**0**	**1**
63	MILESTONE - APPROVAL OF PROJECT EXECUTION	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0	0	0
64	**PROJECT CLOSURE**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$4,682.00**	**$4,682.00**	**$0.00**	**0**	**0**	**1**
67	MILESTONE - APPROVAL OF PROJECT REPORT	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0	0	0
68	**PROJECT EVALUATION**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**0**	**0**	**0**

	PV	EV	AC	SV	CV	EAC	BAC	VAC
TOTALS	$15,726	$14,574	$15,558	($1,152)	($984)	$101,787.27	$81,693	($20,094.27)

The IT security consultant was assigned as follows:

Planning – 2 days (20%)

Analysis – 2 days (20%)

Design – 1 day (10%)

Construction – 1 day (10 %)

Integration – 2 days (20%)

Testing – 2 days (20%)

The addition of IT Security consultant results in a negative CV value of -$984, which indicates the project is over budget. The negative SV value of -$1,152 indicates that the project is behind schedule. The VAC is also a negative value of -$20,094.27, which indicates the project will be

over budget by $20,094.27, if the current CPI of 0.78 continues. The CPI decreased during the planning and execution phases to 0.89 and 0.78 respectively. A value below 1 indicates the project is over budget; and for every $1.00 spent, only $0.89 and $0.78 respectively of work budgeted was completed. The SPI value is 0.5 which indicates the project is behind schedule; and for every $1.00 of work expected to be accomplished, only $0.50 was accomplished. The sum of EAC values is $101,787.27 (till 10/12/21) which is the estimated amount to complete the project if we believe the variance encountered so far will not continue through the remaining project schedule. The TCPI of the analysis phase is 1.11 which indicates that the project will be over budget and difficult to complete with the remaining budget. From our assessment of the TCPI, the original budget/time at completion is not reasonable.

These metrics indicate that the project is behind schedule and overbudget after adding the IT Security Consultant.

PROPOSED SOLUTION /RECOMMENDATION

Our proposed solution to the reduced schedule and budget as per client's requirements, includes a newly revised TCO, WBS, and budget. The proposed solution TCO includes the addition of an IT Security Consultant who is assigned 110 hours of work annually. The WBS was reduced by approximately 17 days to accommodate the 10% schedule reduction. Some of the tasks were parallelized, personnel were rescheduled and reassigned to reduce the cost and schedule. The new closing date is Dec 7, which brings the project back on track. The proposed solution schedule has a 5-day slack. These changes meet the client's needs. The budget reduction in the revised plan eliminated the surplus which resulted in a $3,887 deficit. This deficit doesn't create serious risk because the TCO and WBS will be revised in the proposed solution to reduce costs. The laptop replacements will be changed from the ***Dell 5400*** to a cheaper but comparable ***HP 15-dy2089ys 15.6*** costing $650 which will save $659 per laptop. The annual savings on the change of workstation laptops will be $3,295 annually. The workstation desktops will also be replaced from the ***Dell HP G2 Tower Z5*** to a cheaper but comparable ***HP 24-dp0158qe AiO PC*** costing $800 which will save us $474 per desktop workstation. The annual savings of the workstation desktop change will be $2,370. These reductions amount to an approximate savings of $5,665 annually. The budgeted contingency amount will also be reduced from $10,000 to $5,000. This will save

$5,000 per year. The hardware savings of $5,665 combined with the $5,000 saving from the contingency amount reductions, and the WBS reduction saving of $5,986 results in a $12,564 surplus. This surplus exceeds the MOV metric of being below budget by 10%.

Note: These reductions do not result in a change of scope of the project. The values calculated are based on the TCO values. The cost overview given by the WBS has exactly allocated hours to the personnel, but the TCO also has extra padding hours for the personnel which is the reason for the discrepancy in the values.