

ENGINEER SERVICES PROBLEM IDENTIFICATION / RESOLUTION REPORT

1. ADMINISTRATIVE PROBLEMS

1.1 Organizational structure and staff resources inadequate

	Problem	Actions Taken to Resolve Problem	Strategy Moving Forward
1.1.a	Lack of communication & team cohesiveness	Created monthly employee/safety meeting for entire department Support Services staff are empowered to work across divisions for better communications, cohesiveness & problem resolution	Continue to open channels of communication between divisions & reduce "silo" mindset throughout department
1.1.b	Misalignment between staff capabilities and roles	Revised staffing plan to better align w/ Mission requirements Created project teams based on functional areas (Street, Utilities, Facilities, etc.) Created Director of Engineering Services position Added Assistant Director for Support Created Asst. Director for Construction (Augmentee) Created Senior Project Manager position (Augmentee) Added Administrative Manager to address/manage HR matters	
1.1.c	No dedicated staff to focus on recruitment efforts in order to address vacancies	Contracted staff augmentation positions Construction Inspection RFQ increased the number of qualified and experienced inspectors Expanded recruiting tools to include magazines, job boards, newspapers, job fairs, etc.	
1.1.d	Project management tools were inadequate, unused, and unmanaged	Added IT Manager position Created Quality Assurance position & instituted an assessment of department with identification of deficiencies and implementation of action items to address deficiencies	
1.1.e	Bid process was cumbersome manual process	Moved to an on-line bidding system (CivCast)	
1.1.f	Front Desk activities were known & performed by only the temporary employee filling the position	Several staff members have been trained to act as backup to the Front Desk	
1.1.g	Construction Engineering had no construction office manager, resulting in ineffective project construction management	Created Senior Project Manager position responsible for administrative management of construction	
1.1.h	Engineering did not have a strategic plan in place for execution of back to back Bond programs	Used staff augmentation to ramp up to handle the demands	Develop a strategic plan for execution of back to back Bond programs
1.1.i	HR policies & procedures are inflexible and adversely impact ability to hire and retain qualified staff	Rewrote Job Assessment Questionnaires in order to accomplish goals	
1.1.j	Compensation Plan is misaligned with market rates	Used staff augmentation contracts to bring in qualified/experienced staff to meet needs	Advocate for adjustments to Compensation Plan in order that qualified/experienced staff can be hired
1.1.k	Attrition rate remains high due to workload and compensation		
1.1.l	Augmented staff practices did not follow municipal gov't practices	Developing "on-boarding" materials for all new staff	Finalize & implement "On-boarding" materials
1.1.m	Other departments charge Engineering Services with performing functions which are not part of its core Mission and circumvent Purchasing Policy	Services performed for other departments which are not part of the Engineering Services core mission have been identified	Educate other departments on Engineering's core mission & reject future efforts to perform services not part of the department's core mission and/or which circumvent the Purchasing Policy
1.1.n	Support staff were devalued, overworked & underappreciated by other department staff members	Leadership is working on further empowering staff, providing needed resources, & opening communications within department	Continue to open channels of communication between divisions & reduce "silo" mindset throughout department
1.1.o	Operate in a reactive mode - the same staff responsible for achieving the department's core Mission are also responsible for responding to third party data requests, action directives, etc. (e.g. - ORR, CCARs, Council requests, media requests, audits, assessments)		
1.1.p	There is no succession plan	All Support staff now have a backup. Some positions have multiple backups	

1.2. Inconsistent workflow and review processes (technical & administrative) led to countless duplication of efforts & waste

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	Problem	Actions Taken to Resolve Problem	Strategy Moving Forward
1.2.a	Projects were delayed because contracts or change orders took too long to be executed	Implemented uniform review/approval process, standardized routing sheets, from 4-copy to single-copy contracts, and electronic routing for AE Agreements < \$50K and Construction Change Orders < \$100K	
1.2.b	Agenda memos and presentations were formatted and contained different information depending on who put them together	Standardized Council Agenda Memos & presentations	Continue to develop standardized content
1.2.c	Project documents were inconsistent with naming convention, were stored on many different platforms, and were not centralized for access by all	Implemented policies and procedures for document management including transfer of all project files to the Project Management System (PMS).	Need to complete moving all documents to PMS. Need for everyone to be following procedures/standards.
1.2.d	No record retention management (100 years - 1,100 boxes)	Created a staff position responsible for record retention management Developed a Comprehensive Record Retention Program Sent support staff to State record retention training in Austin Developed record retention in-house training program	Create a division solely responsible for record retention Bring forward historic electronic date and reconfigure to LaserFiche
1.2.e	Ineffective processes and procedures lead to delays, errors, and incomplete files	Implemented a management steering committee to focus on continuous process improvements Implemented PM and inspector training series including decision making, requirements planning, AE contracting, Change Orders Approval authority was centralized to one person, with a backup approver	
1.2.f	Requisition approval in INFOR was delayed because of multiple approvers and approval timeout resubmittals	Timeout feature for requisition approval was removed, eliminating need for resubmittal	
1.2.g	Contracts were delayed in OMB because funds had not been verified and aligned	Funding is now aligned and verified before the contract goes to OMB for approval	
1.2.h	Invoices sent to Director for approval would be delayed	Invoices not needing a PE's approval have been delegated to the Asst. Director of Support for approval	
1.2.i	Construction tracking log did not track when invoices went to Accounts Payable	Construction tracking log now includes date invoice went to Finance A/P for payment	
1.2.j	Most current version of Agenda files (Memos, presentations, exhibits, etc.) are not provided timely to leadership		Establish a process to ensure that leadership has the most current version of all Agenda documents
1.2.k			
1.3. Funds jeopardized because Federal / State - funded project requirements were not followed			
	Problem	Actions Taken to Resolve Problem	Strategy Moving Forward
1.3.a	Projects subject to TxDOT/Federal funding were not readily identifiable	Initiated unique project number to readily identify TxDOT projects	
1.3.b	A summary log of TxDOT-funded projects was not developed	Have created and maintained a summary of all TxDOT projects	
1.3.c	Requirements of TxDOT-funded projects weren't being met because not enough members of the Engineering team know about them	Sent significant number of employees to TxDOT LGP training	Provide training and resources so that all Engineering Services positions understand their role(s) regarding TxDOT projects
		Currently developing detailed flowchart of requirements & processes for TxDOT LGP projects A specific employee is assigned as the TxDOT LGP liaison. A "backup" person is also assigned.	
1.3.d	The City was going to lose state/federal funds due because no one had requested reimbursement	Developed work process for TxDOT projects & placed in PAL Assigned specific employee responsible to request reimbursements from TxDOT. Backup is also assigned.	

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Problem		Actions Taken to Resolve Problem		Strategy Moving Forward
1.4 Third Party Funds are not recovered				
Problem		Actions Taken to Resolve Problem		Strategy Moving Forward
1.4.a	Existence of 3rd party reimbursements (ILAs, grants, matching funds, etc.) for specific projects is not communicated throughout department	Developing a workflow & process for ensuring that contracts with 3rd party funds due to City are properly administered		Develop a workflow & process for ensuring that contracts with 3rd party funds due to City are properly administered
1.4.b	Reimbursement doesn't take place because no one is assigned responsibility for administering contracts	Assigned specific employee responsible to request reimbursements. Backup is also assigned.		Develop a workflow & process for ensuring that contracts with 3rd party funds due to City are properly administered
1.4.c	Department is not reimbursed by all City departments for which services are provided (ie. Project mgmt, Survey, Land Acq., etc)	Recommended the use of allocations through OMB - unsuccessfully		Identify and quantify resources expended in support of departments which do not reimburse the department
1.4.d	General Fund departments do not have funds for Engineering Reimbursements	Funds for Reimbursements are identified prior to execution of contract to the extent funding is available.		Report out unfunded services provided
1.5 Contracting mechanism failed				
Problem		Actions Taken to Resolve Problem		Strategy Moving Forward
1.5.a	Lack of understanding of JOC Program operating procedures led to continuous challenging of activities within program.	Replaced JOC Facilities program w/ Multiple Award Contract program		Continue to monitor to ensure adequate controls are in place and make adjustments as necessary
1.6 Inadequate administrative controls were in place				
Problem		Actions Taken to Resolve Problem		Strategy Moving Forward
1.6.a	Construction staff work hours could not be verified	Removed ability to use "teletime" in Kronos for punching in & out		Continue to monitor to ensure adequate controls are in place and make adjustments as necessary
1.6.b	Payroll, HR, IT, AP, CM & training efforts were duplicated in Construction Engineering, leading to duplication of efforts, increased costs & inefficiencies	Installed Kronos time clock at Construction Engineering site Responsibilities were centralized to Engineering Services Support group		
1.6.c	Problems with timesheet verification of overtime, missed punches & exception reports	Implemented improved payroll policies and enforced adherence to policy		
1.6.d	Construction Inspectors were using their personal vehicles to do inspections	Practice was eliminated		
1.6.e	Support staff offices/work spaces were not logically located	Staff members were relocated to group common functions, match location w/ support role		
1.6.f	Department was failing to meet its Funding requirements	FY2014 Engineering Services reimbursement shortfall was recouped and FY2015 funds were appropriated		
1.6.g	Bond funds were not routinely reconciled	Periodic full reconciliation of Bond Funds are performed and provided to Upper Management		
1.6.h	Invoice payments took an average of 90+ days to process	Implemented processes for invoice payment including set review timelines, approval authorities, & electronic routing which reduced processing time to 23 days		
		Gave Support staff authority to pull and reroute Approval-delayed documents		
1.6.i	Electronic copies of records were not available, hardcopies were getting lost, and records/documents were not accessible by multiple staff members	A comprehensive scanning program has been developed and will be implemented soon		
1.6.j	No system for continuous improvement existed	A "Continuous Improvement Department Evaluation Plan" was developed		
1.6.k	No system existed for tracking Change Orders	A Change Order Policy was created and quarterly Change Order reports have been implemented		
1.6.l	AE invoices got "lost" in the process of being paid	A tracking system was implemented		
1.6.m	Contracts being routed internally for approval would get lost	Implemented "purple folder" contract review identification procedure		
1.6.n	Contract tracking log was in Access data base, not user-friendly	Converted to Excel		

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1.6.o	Routed contracts for Council agendas were handled with the same "urgency" as routed contracts not needed for Council agendas	Routing slips for "Agenda" and "Non-Agenda" items were created		
1.6.p	Invoices routed for internal review would get lost	"Green" folder allows for immediate identification of invoices in process for approval		
1.6.q	No detailed Close-out Budget to determine actual project costs	Developed Close-out Budget Worksheet based on reconciliation of expenditures Implemented processes for appropriately aligning funds		
1.6.r	Clerical staff in Construction office was acting as administrative manager	Added administrative oversight to division at Assistant Director level		
		Added temporary staff to support division		
		Created Senior Project Manager position responsible for administrative management of construction		
1.6.s	Electronic equipment inventory was not maintained	Performed comprehensive inventory	Continue performing periodic inventories	
		Updated equipment		
		Proactively ordering leased computer renewals		
1.6.t	Mileage and overtime claims were out of control	Audits were performed		
1.6.u	Contracts and other expenditures were paid out of unaligned sources	Controls were set in place to manage expenses by requiring advance approval Correct source of funds is now being identified and appropriately aligned before execution of contract	Develop processes to ensure that contracts, etc. are appropriately aligned to their funding source prior to execution	
1.6.v	Time sheets for reimbursement to Engineering Services are not integrated with INFOR Financial system, information input manually	Once contract is executed, funding is encumbered	Continue to advocate with Finance / MIS for resolution of problem	
1.6.w	Other departments would try to encumber funds at the end of the fiscal year without executed contracts	Have scheduled to send out notice of June 1st deadline	Establish and communicate a deadline to other departments for which projects using funds from current fiscal year can be initiated, processed and contracted within Engineering	
1.7 Support Staff Tools outdated				
Problem		Actions Taken to Resolve Problem		Strategy Moving Forward
1.7.a	Bid documents were not electronic	Implemented use of CivCast		
1.7.b	Scanned documents were not using City's recognized record retention system (K:\ drive)	Developed a comprehensive scanning program using the City's LaserFiche program	Implement the comprehensive scanning program	
1.7.c	Notices to Proceed were mailed out leading to time delays in construction start	Notices to Proceed are sent electronically & communicated across the department		
1.7.d	Hardcopy invoices were sent from Construction for processing leading to time delays in processing	Invoices are now sent electronically		
1.7.e	Project Management and support staff shared two networked printers, only one of which was in the department and the other of which was a production printer	Two production level multifunction printer/copiers were brought into the department and other printers were realigned to better serve the department	Continue to assess resource needs of department and provide as funds are available	
1.7.f	Only 1 HP Plotter/scanner was functional	Fixed the broken Plotter / scanner	Assess the cost benefit of eliminating desktop printers	
			Ensure IT Support staff is informed of technical problems	
2. PROJECT DEVELOPMENT PROBLEMS				
2.1 Cumbersome & time consuming process for AE RFQ process				
Problem		Actions Taken to Resolve Problem		Strategy Moving Forward
2.1.a	AE contracts took too long to be awarded & process was costly	Streamlined submission & interview requirements and reduced department costs Improved selection criteria balanced w/ input from local community	Create a standardized process that is documented & well understood by staff and the consulting community	

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Problem		Actions Taken to Resolve Problem	Strategy Moving Forward
		Improved contract standards	
		Flowcharted small AE contracting process & streamlined; anticipate cutting processing time in half	Apply same technique to large AE contracts
		Increased use of Master Services Agreements (MSA) w/ staff-approvable task orders	Expand use of MSAs
2.2. Inadequate Planning, Scoping or Preliminary Feasibility Reports prior to project implementation			
Problem		Actions Taken to Resolve Problem	Strategy Moving Forward
2.2.a	Failed to perform program & project constructability planning & review	Coordinated meetings with stakeholders	Preliminary Engineering Studies will be done to ensure project limits are complete and fully functional
2.2.b	Major project elements such as traffic signals were overlooked	Creatively leveraged funds from grants to cover costs	Preliminary Engineering Studies will be done to ensure project limits are complete and fully functional
2.2.c	Project limits were not logically determined (i.e. projects not extended to logical stop points)	Problem has been recognized and will steps will be taken to ensure problem does not recur in future programs	To the maximum extent possible, streets will not be broken into multiple parts
2.2.d	Bond projects used utility IDIQs (Water/Wastewater) for subsurface work	Bundled projects where possible for construction	Utility work will be incorporated into street project
2.2.e	Inadequate coordination with franchise utilities in design	Problem has been recognized and will steps will be taken to ensure problem does not recur in future programs	
2.2.f	Failed to adequately budget for City share on grant funded projects	Introduced 3rd party Subsurface Utility Engineering (SUE) w/ improved timeline (upfront), cost savings, improved accuracy and GIS electronic files	
2.2.g	Some AE work performed was inadequate	Coordinated meetings with stakeholders	
2.2.h	Land Acquisition function was not appropriately included in execution of Bond projects	Developed Deconstruct Funding spreadsheet in order to plan funding sources for TXDOT projects	Identify Grant projects as part of Bond project development prior to referendum and "reserve" the funds throughout execution of the projects
		Enforcement of AE evaluations for positive feedback, future reference & selection	
		Land Acquisition was integrated into the project management process	
		Successfully reclassified Land Acquisition positions	
2.3 No or Inadequate Estimating Tools and Techniques			
Problem		Actions Taken to Resolve Problem	Strategy Moving Forward
2.3.a	Bond 2012 & Bond 2014 Prop. 2 developed using in-house construction cost estimates that were consistently under-estimated	Trained PMs on estimating techniques	Perform preliminary engineering before referendum
		Procuring consultants to help with preliminary engineering studies of potential Bond projects	
2.4 Failed to enforce design standards and perform technical review			
Problem		Actions Taken to Resolve Problem	Strategy Moving Forward
2.4.a	Bond projects were budgeted & designed without incorporating required traffic signal upgrades	Coordinated meetings for Public Works: Engineering, Construction, Land Acquisition & Traffic Engineering	Prepare future Bond packages with scope completion & constructability reviews
2.4.b	Plan review comments were not incorporated in subsequent design submittals	Plan review comments are now documented in design review procedures	
		Management has empowered PMs to reject designs if comments are not incorporated	
		Improved design reviews w/ AE presentation and more consistent reviews w/ rejection of improper submissions	
2.5 Failed to follow requirements for TXDOT-funded projects (AE selection, design, bid development & award, etc.)			
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2.5.a	Projects subject to TXDOT/Federal funding were not readily identifiable	Initiated unique project number to readily identify TXDOT projects		
2.5.b	Requirements of TXDOT-funded projects weren't being met because not enough members of the Engineering team know about them	Sent significant number of employees to TXDOT LGP training		Train Project Managers so that they can ensure requirements are met from design through close-out
		Currently developing detailed flowchart of requirements & processes for TXDOT LGP projects		
		A specific employee is assigned as the TXDOT LGP liaison. A "backup" person is also assigned.		
2.5.c	The City was going to lose the ability to be awarded state/federal funds due because no one had requested reimbursement for funds already awarded	Developed work process for TXDOT projects & placed in PAL		Ensure required processes/procedures are followed
		Assigned specific employee responsible to request reimbursements from TXDOT		
3. PROJECT EXECUTION PROBLEMS				
3.1 Disconnect between Engineering & Construction Office creates loss of design scope enforcement, cost increases, schedule losses, & decreased quality assurance				
Problem		Actions Taken to Resolve Problem		Strategy Moving Forward
3.1.a	Lack of cohesiveness within department	Coordinated meetings for Public Works: Engineering, Construction, Land Acquisition & Traffic Engineering		Continue to open channels of communication between divisions & reduce "silo" mindset throughout department
		Implemented procedures for timely response to contractors re: field changes & direction		
3.1.b	Design problems encountered by inspectors not documented & transmitted upward	Enforcement of AE evaluations for positive feedback, future reference & selection		Ensure feedback from Construction is included in Engineer evaluations
3.1.c	Construction did not adequately communicate program execution problems to PM	Implementing changes to SPM: <ul style="list-style-type: none"> • Smaller construction packages to increase construction resources & competition • Revised timeline to seasonal construction vs calendar year • Changed cost & quantity tracking to individual streets rather than DO • "Real-time" automated PCI survey w/ inventory of ADA ramps, markings, etc. 		
3.1.d	Projects were not managed to stay within budget & within scope	Implemented standardized Construction Progress Meetings		
		Implemented PM and inspector training series including decision making, requirements planning, AE contracting, Change Orders		
3.1.e	PMs were not engaged in construction of projects for which they were responsible	Implemented standardized Construction Progress Meetings		
3.1.f	Contractors could not identify City Construction Inspectors to know that they were present	City uniforms policy was implemented for Inspectors		
3.2 Inadequate construction team resources, training & certifications with continual reports of conflicts and delays				
Problem		Actions Taken to Resolve Problem		Strategy Moving Forward
3.2.a	TXDOT-funded project funds in jeopardy because requirements were not met	Sent employees to TXDOT Local Government Project training		
3.2.b	Too few inspectors to effectively handle all of the projects underway	Issued Construction Inspection RFQ; increased number of qualified & experienced Inspectors		Project anticipated workload and adjust accordingly
3.2.c	Inspectors could not readily provide guidance to contractors	Implemented inspector training series including decision making, requirements planning, AE contracting, Change Orders		
		Added experienced construction staff through staff augmentation		
		Added Senior Program Manager to provide add'l oversight & direction		
3.2.d	Inspectors not adequately trained	Developed inspector training program		Implement training program

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Problem		Actions Taken to Resolve Problem		Strategy Moving Forward
3.2.e	Inspectors had to share City vehicles	Purchased new trucks, retained older trucks as backups		
3.3 Lack of Well-defined Scope / Budget Control				
Problem		Actions Taken to Resolve Problem		Strategy Moving Forward
3.3.a	Projects were not managed to stay within budget & within scope	Implemented standardized Construction Progress Meetings Construction Inspection RFQ will allow more inspectors in field to control adherence to approved project scope		
		Implemented PM and Inspector training series including decision making, requirements planning, AE contracting, Change Orders		
3.3.b	IDIQ expenditures were poorly controlled	Implementing changes to SPMIP: <ul style="list-style-type: none">• Smaller construction packages to increase construction resources & competition• Revised timeline to seasonal construction vs calendar year• Changed cost & quantity tracking to individual streets rather than DO• "Real-time" automated PCI survey w/ inventory of ADA ramps, markings, etc.		More closely monitor execution of IDIQ contracts & increase PM involvement; communicate concerns more effectively with AE.
		Leadership has communicated that holding to project scope is a priority		Improve the constructability of plans by incorporating a more active role of construction management in project execution
3.3.c	Too many change orders were being issued			Identify and mitigate potential change orders early
3.4 Project Schedules were Not Followed				
Problem		Actions Taken to Resolve Problem		Strategy Moving Forward
3.4.a	Field changes or direction take too long to be resolved	Implemented procedures for timely response to contractors re: field changes & direction		
3.4.b	Projects were not managed to stay within budget & within scope	Implemented standardized Construction Progress Meetings		Implement electronic collaboration tools to meet schedule commitments
3.4.c	12-month program for seal coat work was executed in 19 months, leading to delay of implementation of 2nd year of work, as well as rework associated with pavement degradation during "off" period	Implementing changes to SPMIP: <ul style="list-style-type: none">• Smaller construction packages to increase construction resources & competition• Revised timeline to seasonal construction vs calendar year• Changed cost & quantity tracking to individual streets rather than DO• "Real-time" automated PCI survey w/ inventory of ADA ramps, markings, etc.		More closely monitor execution of IDIQ contracts & increase PM involvement; communicate concerns more effectively with AE.
3.4.d	City had no mechanism for preventing award of contracts to construction companies with histories of repeatedly failing to meet project schedules	Developed & Implemented Debarment Ordinance		Contractor and AE evaluations post-project are documented and filed in central location for easy reference
3.5 Inadequate coordination w/ franchise utilities in construction				
Problem		Actions Taken to Resolve Problem		Strategy Moving Forward
3.5.a	Plans were bid with significant utility conflicts, resulting in change orders and delays	Introduced 3rd party Subsurface Utility Engineering (SUE) w/ improved timeline (upfront), cost savings, improved accuracy and GIS electronic files		
3.5.b	AEs were performing poorly	Developed AE evaluations for positive feedback, future reference & selection		Consistently provide feedback to AEs
3.5.c	Insufficient Construction Inspectors to adequately facilitate coordination	Issued Construction Inspection RFQ to bring on-board qualified & experienced staff		
3.6 Failed to follow requirements for reimbursement on TxDOT projects				
Problem		Actions Taken to Resolve Problem		Strategy Moving Forward
3.6.a	Projects subject to TxDOT/Federal funding were not readily identifiable	Initiated unique project number to readily identify TxDOT projects		

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3.6.b	Requirements of TxDOT-funded projects weren't being met because not enough members of the Engineering team know about them	Sent significant number of employees to TxDOT LGP training	Provide training and resources so that all Engineering Services positions understand their role(s) regarding TxDOT projects
		Currently developing detailed flowchart of requirements & processes for TxDOT LGP projects	
		A specific employee is assigned as the TxDOT LGP liaison. A "backup" person is also assigned.	
3.6.c	The City was going to lose state/federal funds due because no one had requested reimbursement	Developed work process for TxDOT projects & placed in PAL	
		Assigned specific employee responsible to request reimbursements from TxDOT	
3.7 Project management software was not functional			
	Problem	Actions Taken to Resolve Problem	Strategy Moving Forward
3.7.a	Multiple PM software systems had been "thrown away" because staff did not use them	Included a Quality Assurance Manager in staff augmentation to facilitate use of the existing project management software	Enhance effectiveness of EPM for online collaboration
		Assigned backup	
3.7.b	No one was using the existing PM software	Upper management empowered QA Manager to "push" forward use of the existing PMS	Include add'l training for staff on EPM
		Assigned backup	Enhance effectiveness of EPM for online collaboration
3.7.c	There was no champion for the existing PM software	Upper management empowered QA Manager to "push" forward use of the existing PMS	Include add'l training for staff on EPM
		Assigned backup	Enhance effectiveness of EPM for online collaboration
3.7.d	IT support within department was inadequate	Hired an IT employee responsible for addressing technology needs of the department including EPM	Include add'l training for staff on EPM
		Assigned backup	Enhance effectiveness of EPM for online collaboration