



THE CITY OF SAN DIEGO  
**REPORT TO THE CITY COUNCIL**

DATE ISSUED: July 15, 2009 REPORT NO: 09-114  
ATTENTION: Budget and Finance Committee  
SUBJECT: Communications Division Business Process Reengineering  
REFERENCE:

REQUESTED ACTION:

Forward the Report to Council for Council to consider the recommendations of the Communications Division Business Process Reengineering (BPR) Study.

STAFF RECOMMENDATION:

Forward the Report to Council for Council to consider the recommendations of the Communications Division Business Process Reengineering Study.

BACKGROUND:

The Mayor has commenced BPR efforts to improve efficiencies, reduce the cost of City government and maximize the services offered to residents and customers. BPR focuses on optimizing the efficiency and effectiveness of operational processes and functional work groups. On July 31, 2006, the City Council adopted Ordinance O-19523, establishing a policy for the implementation of Business Process Reengineering Results (Report to City Council No. 06-094).

The Communications Division of the General Services Department provides wireless communications technologies for the City of San Diego. Services include procuring, designing, installing, maintaining, and repairing voice and data communications systems and equipment. This Business Process Reengineering (BPR) study provided an avenue for evaluating the current model of providing these services and identified ways to reduce costs and improve efficiency.

The wireless infrastructure safeguards the health and safety of the citizens of San Diego and some nearby communities and institutions. Internal City customers include the Police, Fire-Rescue, Homeland Security, Water, Metropolitan Wastewater (MWW), Park and Recreation, and Environmental Services (ESD) Departments. In addition, the Communications Division supports non-City customers including San Diego Medical Services Enterprise, Poway Fire Department, San Diego City Schools Police, and San Diego Community College Police.

The goals of the City's wireless infrastructure include:

- Operability of the City's core wireless systems
- Inter-operability between the City and other agencies and levels of government
- Adaptability to technological and regulatory changes
- Adaptability to growth and evolving operational needs
- Enhanced opportunities for partnerships in service delivery

The Communications Division includes internal technology experts who can help decision makers in the City make appropriate decisions for purchasing and maintaining wireless devices and infrastructure. The City, with its emphasis on efficiency and effectiveness, must find the best solutions to address business trends such as the following:

- An increasing demand for mobility and portability using wireless technology, as wireless technology has rapidly become a normal part of doing business at the City, as well as the larger society.
- A technology business that is continuously changing its technological platforms, rendering even recently developed and purchased devices obsolete, or headed for obsolescence.

Through the BPR process, wherein core processes were identified, benchmark and best practice information was collected, processes were mapped and reengineered, and revised ("To Be") processes were developed, the team was able to:

- **Identify core functions and processes.** The team determined that the Communications Division core processes include operability of the City's fixed and mobile wireless infrastructure and assets, and wireless system planning, design, and implementation.
- **Understand the cost structure for core functions and communicate costs to client departments.** The team began a comprehensive review of the costs of core functions. The team communicates costs via service level agreements and the wireless allocation process.
- **Streamline processes to remove non-value added activities.** Developed "To Be" maps of critical processes that reduce cycle time; identified technological solutions to achieve efficiency and effectiveness; recommended transfer or elimination of non-core functions.
- **Explore collaboration with other public entities and suppliers to improve efficiency and effectiveness.** Worked with stakeholders to develop appropriate BPR recommendations; developed recommendations that built on existing collaboration with suppliers and with internal/external stakeholders to achieve efficiencies in purchasing as well as to reduce complexity by developing joint solutions. For example, collaboration with the County Sheriff Wireless Services Division has reduced expenses for public safety radios and improved radio interoperability for emergency responders.

### ***Processes Evaluated***

The Communications Division major processes that were reengineered include:

- A. Fixed maintenance
- B. Material management
- C. Cell phone and wireless functions
- D. Mobile provisioning and installation
- E. Documentation and records management

**Fixed Maintenance:** The fixed maintenance function provides technical support for all fixed infrastructure equipment supporting wireless communications used by departmental dispatch centers and field personnel. Technicians conduct a number of support activities: oversight of the Maintenance Control Centers (MCCs), flagging and diagnosing problems, and service calls. Service calls may involve visiting the City's mountain-top sites and towers, which can only be accessed by using four wheel drive vehicles to provide critical public safety communications repair support. The Fixed Maintenance Unit provides a high level customer service around-the-clock to public safety as well as other City departments and assures high system performance on a day to day basis.

Although work requests are completed expeditiously, the process also requires a central point of contact to funnel requests for service to the correct unit for resolution, and also requires a method for documenting and assigning work tickets. The group considered using a software package to document the request and provide customer feedback. This software package would also address the hand off process to other vendors/companies for a multipart work request.

- Recommendation: Upgrade existing systems to incorporate a trouble ticket/work request database and to address the hand off process to other vendors/companies for a multipart work request.

The "To Be" process map for work requests requires having all requests for service directed to one phone number at the Maintenance Control Center (MCC) during normal work hours, and redirected to Station 38 when MCC is closed. Work requests are currently directed to various individuals within the Division. The person answering the call would use a software application to assign work tickets and provide statistics on the work requests. Feedback/status of the work requests would be generated by the software application, and it would be capable of paging the technicians with trouble requests. The subcommittee developed a list of features for a proposed fixed maintenance database. This software would also improve the ability to track data such as company name, date/time, and point of contact, and would apply to the process for "System Upgrade."

- Recommendation: Acquire a software application to assign work tickets, track status of work requests, and page technicians with trouble requests.

A "To Be" process map was developed for preventive maintenance on fixed systems equipment. Once the recommended efficiencies are realized, instituting a preventive maintenance program should reduce the instances of unexpected equipment failure, and overtime for critical failures. The fixed maintenance unit will establish a preventive maintenance program and schedule for all equipment.

- Recommendation: Establish a preventive maintenance program and schedule for all equipment.

**Material Management:** The material management function involves the ordering, tracking, receipt, and storage of all communications equipment utilized by the Division and City Departments. The material management BPR subcommittee redefined and refined the material handling process for the Communications Division.

*Ordering process.* The Materials Management subcommittee recommends that an electronic ordering and tracking system be implemented, including a bar code system. Once automated, the

cumbersome Form 2610 can be eliminated, reducing the amount of time required today for this paperwork. The ordering process begins with a customer request via an electronic order form. The Communications Division evaluates the form and upon approval returns it to the originating department. If not approved, the customer is contacted to amend the form. The equipment is ordered through an approved Purchasing process and delivered to Communications.

- Recommendation: Implement an electronic ordering and tracking system, including a bar code system.

*Shipping/tracking process*: The shipping and tracking process was found to be the most efficient process for service delivery. Accordingly, the To Be process is the same as the As Is.

*Receiving/inventory process*: The subcommittee also recommends that an inventory database be implemented to ensure the tracking of all equipment. The order is received by the Materials Manager with an inventory database. The order is checked in the database, verified, and bar coded. If the order is incorrect, the vendor is contacted. If the equipment is a returned part or equipment, then a technician is notified. A new piece of equipment may need to be programmed. If so, the programming section is notified. Once the equipment is programmed, it is checked into inventory and the customer is notified. Once the customer receives the equipment, the order is closed and the invoice is sent to auditors. Assumptions: Material Manager Point of Contact, Back-Up Point of Contact, Database, Barcode System, Warehouse, Forklift.

- Recommendation: Implement an inventory database to ensure the tracking of all equipment.

**Cell Phone and Wireless Functions**: The City of San Diego Communications Division is responsible for all of the City's wireless telephone and wireless data services. This includes additions and changes to existing equipment and plan features, competitive procurement, maintenance of inventory records, and coordination of billings for payment of invoices.

The Communications Division also manages all of the City's wireless telephone and wireless data services for public safety entities such as Police Department, Fire Department, and Office of Homeland Security. The Division currently manages approximately 5,000 devices and provides centralized management, thus achieving better rate plans and lower monthly service costs (bill optimization), improved equipment and service support, and optimization/tracking/reporting of lines of service.

Overall, the committee felt that the group provides excellent customer service. However, permitting multiple and regular changes per phone, which generates rather convoluted paper work, is negatively impacting customer service levels in the core functions.

As a result of continuous improvement activities, many changes have been made to the process in the recent past and the To Be process as it reflected this improved state was determined to be reflective of best practices. The Cell Phone Work Group Section will implement the iSYS web portal (at no additional cost to the City) which allows a single point of access for all requests and, therefore, eliminates duplicate orders and the need to provide research and answers to the end user, and reduces paperwork by eliminating the need for 2610 Blanket/Open Purchase forms,

Wireless data card request form, cell phone activation request form, and the golden rod change entry form. iSYS will also help control the equipment options and calling plans available. Accessory only orders will be shipped directly to the end user, saving time and resources. iSYS web portal provides current/real-time data for each device and eliminates delays from the current data entry process.

Through iSYS the Communications Division can offer end users an around-the-clock troubleshooting help desk. Troubleshooting devices for end users pose a significant time management issue. When Communications Division Staff troubleshoot devices, it is time consuming and takes away from core functions. This process is also inconvenient for the end user who must drive to Communications Division's 20th & B location, drop off the device, and then later come back to pick up the unit. The troubleshooting help desk will provide a more effective use of City employees' time and resources.

- Recommendation: Provide an around-the-clock troubleshooting help desk using the iSYS tool.

**Mobile Provisioning and Installation:** Mobile provisioning and installation is responsible for receiving, testing, programming and installing mobile radios for the City of San Diego. The unit also provisions and installs mobile data computers and sirens along with all other miscellaneous electronics needed in City vehicles. Mobile Installation's customers include all Police, Fire, Lifeguard, General Services, Water, MWWD, and ESD. The Mobile Installation group consults with customers to determine their needs, recommends the appropriate equipment to purchase, designs the installation, and provides documentation of the as-built. The group also maintains an inventory database of all mobile/portable radios and active trunk IDs for the 800MHz system.

Mobile/portable repair supports the mobile install process by providing quality repairs on equipment to be installed. Mobile/portable repair troubleshoots and repairs the communications equipment in all City vehicles as well as portable radios, radars and pagers.

The Mobile Repair "To Be" differs from the "As Is" in two significant ways: First, the section will use a trouble ticket database to log in and out any unit that either comes into the shop or is being repaired in the field. The database will enable tracking unit history to improve quality control and flag repeat problems. Second, equipment technicians will troubleshoot vehicles and remove and replace equipment. Because of their installation expertise, diagnosis of problems will be faster with lower costs, freeing up communications technicians to repair the equipment. Essentially, customers will receive better service at a lower cost.

- Recommendations: (1) Use a trouble ticket database to log in and out any unit that either comes into the shop or is being repaired in the field. (2) Have equipment technicians (rather than communications technicians) troubleshoot vehicles and remove and replace equipment.

Prior to BPR, the Mobile Installation section modified the installation process for sirens, radios and mobile data computer terminals, allowing process improvement to be achieved. Therefore, the installation "To Be" process maps are the same as the "As Is" maps with the exception of the addition of work orders. This process improvement flattens many of the peak workloads, measures actual time, helps with scheduling and allows for tracking of vehicles and equipment.

However, in order to maintain average daily workload and more cost effective repair for drive-up service, it is recommended that an Equipment Technician be added to the Mobile Provisioning group. This will be done by reclassifying an existing Communications Technician position.

Consistent with the Fleet Services BPR (Item 17 Summary Recommendations), the Communications Division studied whether it would improve efficiency and/or effectiveness if the consolidated fleet were to assume responsibility for installation of mobile radios for motive equipment. This was determined to be less efficient and more costly than the current mobile installation process due to the centralized nature of communications services. Decentralizing the mobile installation part of the overall communications process by moving it to Fleet Services would fragment overall support services and drive up costs. Mobile installation should continue as part of the centralized communications service.

**Documentation and Records Management:** The purpose of this process is to provide documentation for systems and sub-systems so that technicians have accurate “as-built” information on the systems. As-builds show technicians how a system is actually assembled and installed, and facilitate timely restoration of service.

The “To Be” discussions included: establishing naming conventions for drawings that will be organized and stored on the S drive; developing uniform standards for vendor-generated drawings; and having punch block information from Excel spreadsheets entered into an Access Database by a documentation specialist. Also recommended was to adopt a barcode system for easily entering information about swapped equipment. This system will replace Trouble Cards and Swap Cards, and will require a customized Access database and/or utilizing the Communications Module for the Fleet Focus software.

- Recommendations: (1) Establish naming conventions for drawings that will be organized and stored on the S drive; (2) Develop uniform standards for vendor-generated drawings; (3) Enter punch block information from Excel spreadsheets into an Access Database; and (4) Adopt a barcode system for easily entering information about swapped equipment.

The BPR recommendations focus on maximizing efficiencies within the organization. Given this is an on-going process, the Division fully intends to continue to focus on core functions and process improvement. The recommended reclassifications will improve our ability to effectively manage average daily workloads, improve efficiencies, provide cost savings, and add workflow automation expertise (IT). The position reduction is achievable due to reducing/eliminating component level repair, eliminating non-core functions, and increasing span of control for supervisory personnel. A summary of the BPR recommendations is provided in Attachment A.

FISCAL CONSIDERATIONS:

The full year impact of this BPR proposal on the Communications Division budget is estimated to be annual personnel savings of \$158,447. A detail of this budget impact is provided in Attachment B. The actual impact will depend on a variety of factors, including implementation dates of the various implementations.

PREVIOUS COUNCIL and/or COMMITTEE ACTION:

None

COMMUNITY PARTICIPATION AND PUBLIC OUTREACH EFFORTS:

The Communications Division involved the participation of MEA and AFSCME Local 127. The Communications Division also conducted benchmarking on many aspects of operations against other municipalities.

KEY STAKEHOLDERS AND PROJECTED IMPACTS:

This BPR was noticed to both Local 127 and MEA to determine if either or both of those labor organizations had an interest in demanding Meet and Confer over the relevant subjects of bargaining. MEA reached an agreement with the City on the recommendations contained within this BPR. Local 127 failed to respond to the City's notification.

Since the Communications Division is a Special Revenue Fund, direct contact with City residents and constituents is minimal to none, and as such the public should expect no change in service levels as a result of this BPR. Regarding internal customers, this BPR will maintain or enhance all current services provided to City Departments. The resulting cost savings and overall efficiencies gained through this BPR will benefit the City.



Mario X. Sierra  
General Services Department Director



David Jarrell  
Deputy Chief of Public Works

- Attachments: A. Summary of BPR Recommendations  
B. Summary of Budget Impacts

**ATTACHMENT A**

**Communications Division  
Summary of Business Process Reengineering Recommendations**

<i>Recommendation</i>	<i>Impact</i>	<i>Implementation Schedule</i>
<p>1. Implement "To Be" processes (The specific components of the To Be implementation follow, grouped by major process.)</p> <p><i>Fixed Maintenance</i></p> <p><i>1.a. Upgrade existing systems to incorporate a trouble ticket/work request database and to address the hand off process to other vendors/companies for a multipart work request.</i></p> <p><i>1.b. Acquire a software application to assign work tickets, track status of work requests, and page technicians with trouble requests.</i></p> <p><i>1.c. Establish a preventive maintenance program and schedule for all equipment.</i></p> <p><i>Material Management</i></p> <p><i>1.d. Implement an electronic ordering and tracking system, including a bar code system.</i></p> <p><i>1.e. Implement an inventory database to ensure the tracking of all equipment.</i></p> <p><i>Cell Phone and Wireless Functions</i></p> <p><i>1.f. Provide an around-the-clock troubleshooting help desk using the iSYS tool.</i></p> <p><i>Mobile Provisioning and Installation</i></p> <p><i>1.g. Use a trouble ticket database to log in and out any unit that either comes into the shop or is being repaired in the field.</i></p> <p><i>1.h. Have equipment technicians (rather than communications technicians) troubleshoot vehicles and remove and replace equipment.</i></p> <p><i>Documentation and Records Management</i></p> <p><i>1.i. Establish naming conventions for drawings that will be organized and stored on the S drive.</i></p> <p><i>1.j. Develop uniform standards for vendor-generated drawings.</i></p> <p><i>1.k. Enter punch block information from Excel spreadsheets entered into an Access Database.</i></p> <p><i>1.l. Adopt a barcode system for easily entering information about swapped equipment.</i></p>	<p>Enhance productivity</p> <p><i>Improve efficiency and effectiveness</i></p>	<p>Within 6 to 9 months of BPR approval</p> <p><i>Within 6 to 9 months of BPR approval</i></p>
<p>2. Reduce personnel expense as a result of reduction and/or elimination of component level repair and reduction in project related work (dependent, in part, on implementation of the new public safety radio system and replacement of mobile and portable radio units). *Reclassify 2 FTE Senior Communications Technicians, eliminate 1 FTE Supervisory Communications Technician.</p>	<p>Improve efficiency and effectiveness</p> <p><i>Improve efficiency and effectiveness (1.g.) and cost savings (1.h.)</i></p>	<p>Within 6 to 9 months of BPR approval</p> <p><i>Within 6 to 9 months of BPR approval</i></p>
<p>3. Revise cost allocation structure to get to appropriate cost allocations, and full cost recovery for services provided and for specialty services.</p>	<p>Improve efficiency and effectiveness</p> <p>Estimated annual personnel savings: \$158,447</p> <p>Recover cost of services</p>	<p>Within 6 to 9 months of BPR approval</p> <p>Within 1 month of BPR approval</p> <p>Within 12 to 24 months of BPR approval</p>

\*Workflow automation with the implementation of SAP and other information systems within the Division require IT skill sets currently lacking. In addition, the workload within the Mobile Installation group requires additional personnel resources to keep up with average daily workload. These requirements are met with the reclassification of two (2) Sr. Communications Technicians to one (1) Information Systems Analyst and one (1) Equipment Technician.



**ATTACHMENT B**

**Communications Division Business Process Reengineering  
Summary of Budget Impacts**

FY2009 APPROVED BUDGET				RECOMMENDED CHANGES						POST-BPR PROJECTED BUDGET			
DIVISION	FTE	Expenditure	Revenue	Description	FTE	PE COST	NPE COST	REVENUE	DIVISION	FTE	COST	REVENUE	
539 - Communications	53.88	\$10,372,603	\$10,662,177	Reduce: 1.00 Communications Technician Supervisor	-1.00	-\$111,690	\$0	-\$111,690	539 - Communications	50.00	\$9,894,332	\$8,809,226	
				Reclass: 1.00 Sr. Communications Technician to ISA II	0.00	-\$10,571	\$0	-\$10,571					
				Reclass: 1.00 Sr. Communications Technician to Equipment Technician I	0.00	-\$36,186	\$0	-\$36,186					
<b>FY2010 PROPOSED BUDGET</b>													
DIVISION	FTE	Expenditure	Revenue										
539 - Communications	51.00	\$10,052,779	\$8,967,673										
				<b>Division Changes Subtotal</b>	<b>-1.00</b>	<b>-\$158,447</b>	<b>\$0</b>	<b>-\$158,447</b>				<b>-\$158,447</b>	