

**CITY OF HALLANDALE BEACH, FLORIDA**  
**MEMORANDUM**

**DATE:** May 23, 2018

**TO:** Roger M. Carlton, City Manager  
Greg Chavarria, Assistant City Manager

**FROM:** Tom Camaj, Contracts Coordinator 

**SUBJECT:** Roger's Raiders Project – Printing Optimization Strategic Analysis and Recommendations

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There currently exists a need to review printing operations and determine efficiencies throughout City of Hallandale Beach facilities. As department and office allocations have evolved and paperless systems emerge, analyzing the current printing practices of the organization is essential. The City will greatly benefit by determining methods to reduce printing, consolidating machines and developing methods for monitoring and control. By having a strategic analysis in place, recommendations may be implemented and the City can control costs and promote sustainability in coordination with the recently adopted Sustainability Action Plan (SAP).

The objective of the analysis and recommendations is to reduce cost by approximately 10% while minimizing impact to departmental operations. The analysis consisted of data collection, data review, facility walkthroughs, and assessment of department operations. Department assessments included the specific functions of staff, confidentiality and security needs, as well as location and distance from other devices were considered.

**Data Analysis**

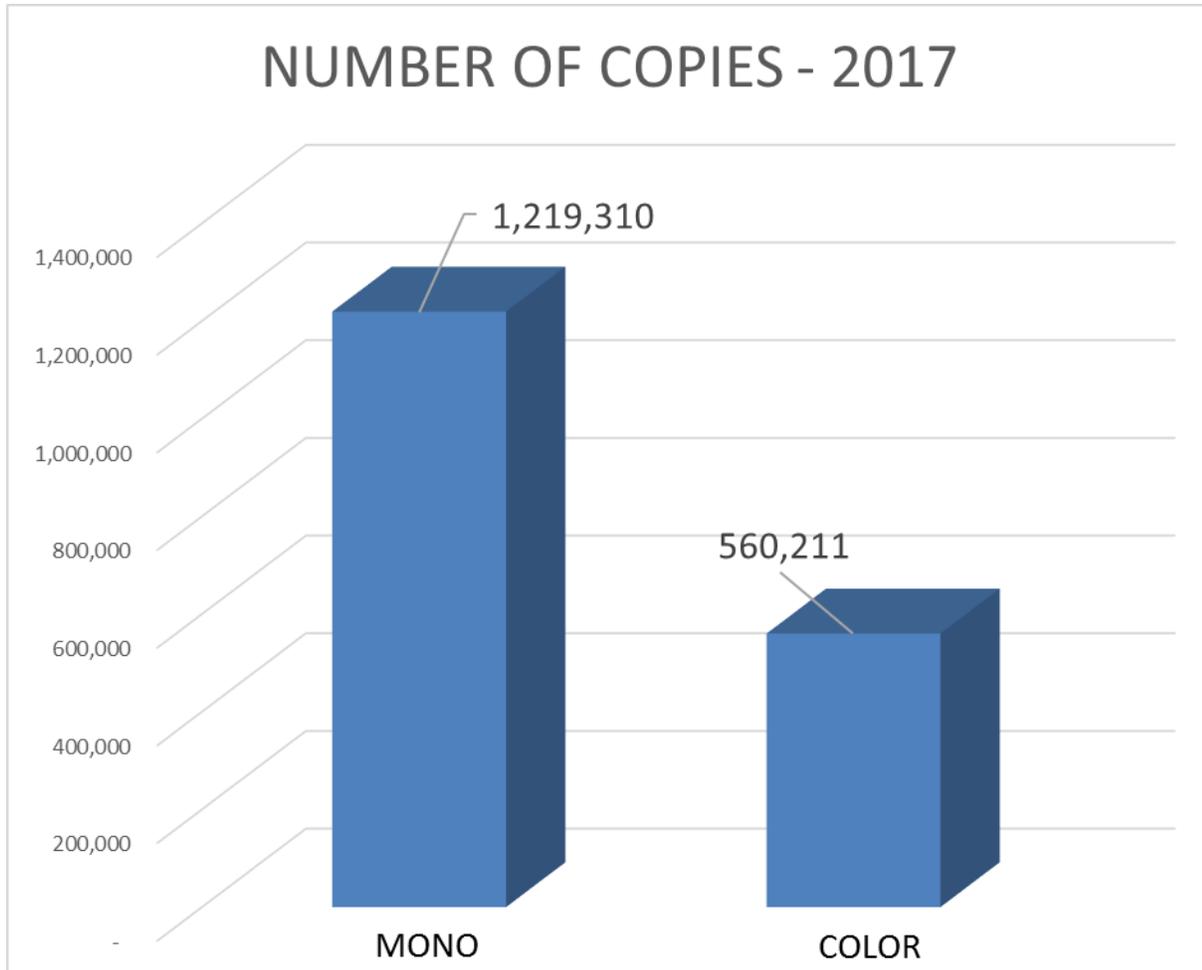
The City procures printing services through a State of Florida contract with Toshiba Business Solutions. The services consist of two types of printing devices: multifunction devices (MFD) and printers. Toshiba assisted in providing usage and cost data from 2017 (Exhibit 1), as well as producing a map with the location of all devices serviced by Toshiba (Exhibit 2). Please note that since the creation of the map, there have been relocations of departments and some device locations are not accurate on the map. A walkthrough was conducted to confirm the correct location of all devices.

The City currently leases 16 MFDs (Exhibit 1, highlighted yellow) with a total annual cost of \$30,708. The cost of the lease includes maintenance, parts and toner. The City also pays a cost per copy (CPC) price to Toshiba for every print made. Depending upon the device model, the CPC for mono (black and white) prints is between \$0.00501 and \$0.0065, and \$0.04533 for color prints. The City also has 36 printers that are owned by the City and have been purchased over several years using the Innovation Technology Department's annual expense budget. The CPC for all printers is \$0.016 for mono and \$0.07 for color.

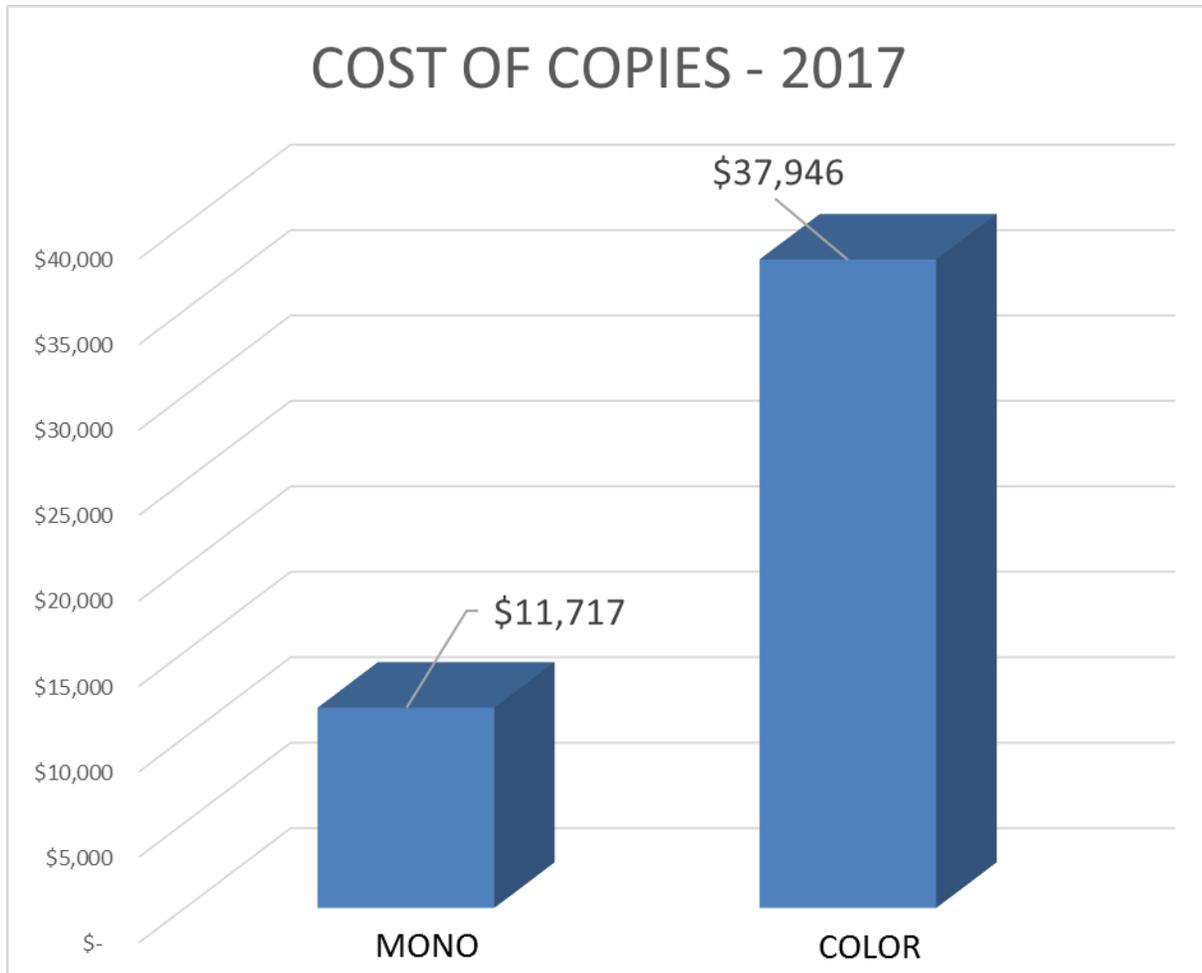
*CPC MONO – 2.5 TIMES HIGHER ON CITY PRINTER THAN MFD*

*CPC COLOR – 1.5 TIMES HIGHER ON CITY PRINTER THAN MFD*

In 2017, the City spent \$39,254 on CPC costs alone for all printing devices, in addition to the MFD lease costs of \$30,708. Due to the varying needs for printing each year, the cost for CPC can potentially reach up to \$51,290 (based on the average monthly volume in 2017). The charts below illustrates the actual number of copies and associated cost for 2017.



The City prints more than double the number of mono copies than color, however color costs are over 2.5 times greater per copy. This is a very large amount when taking into consideration that only 19 of the 52 printing devices have color printing capabilities. Adding to the gap in costs is the difference in CPC on printers versus MFDs. Below find recommendations to close the gap.



## **Recommendations**

### **Consolidation:**

The 52 printing devices utilized service 17 City departments and the Community Redevelopment Agency (CRA), and are spread across 8 separate buildings. Each department has unique operational requirements for which they need access to printing devices. Many functions of the departments require those devices to be located within close range of staff in order to provide optimal service to customers. After analysis of the operations of each department and strategic overview of device locations, it is evident that the City is not over saturated with devices. All devices fulfill a valid need, however there is still room for efficiency.

Each department requires color printing capabilities, however, the need to print color should be controlled. Through elimination of color printers that are within proximity of a more cost efficient color MFD, the transfer of the volume of those printers will produce some cost savings. Nine printers have been identified (Exhibit 1, highlighted in red) to be removed. This removal will not damage operational goals. In determining which printers should be removed, one of the following criteria was met: a) a color printer within close proximity of a color MFD, b) a mono printer within

close proximity of a MFD or, c) a printer with little to no volume. Using the average monthly volume in 2017 to estimate the impact of the changes, the transfer of usage from the nine printers to a more cost efficient MFD will save \$4,700 per year. The result is a 9% decrease in costs. While this number may seem small, it will enter an element of efficiency to the thought process on replacements as leases run out or as new requests are made. Potential SAP contributions will also be enhanced.

#### Monitoring, Control, and Funding:

The City's printing operations is currently managed in two departments. The Procurement Department manages MFDs and the I.T. Department manages printers. As printing is a function of I.T., it is recommended to make the I.T. Department the single point of management for all printing operations. I.T. offers its technological expertise of hardware, software, and integration to printing operations that the Procurement Department cannot. Records management/retention in coordination with the City Clerk will be enhance with this focus.

Currently, the funds for printing are allocated per various departments. Consolidation of printing services budgeted funds to the Innovation Technology department is recommended as funds are required for procuring the Printing Management Controls software. The printing software will be purchased through achieved printing savings across all City Departments. The distributed model of funding provides challenges for monitoring and control of printing costs across the City. Further cost efficiencies may be achieved by consolidating printing budget and costs to the Innovation Technology, just as they occurred when software licensing and hardware costs efficiencies occurred after consolidation to IT in Fiscal Year 2015-2016. Prior to this year, software and hardware costs were distributed amongst department and technology purchase schedules and pricing were disparate. After consolidation of funds to technology, cost efficiencies allowed the City to control technology costs and provide greater levels of technology equipment and services.

#### Printing Software and Printing Policy:

Toshiba Business Solutions offers a printing management software called PaperCut MF. As a comprehensive print management software, PaperCut provides tracks, manages and reports on who, what, when, where and how copying and printing is conducted in the City. The software will allow I.T. staff greater coordination over employees printing and copying habits while lowering costs and reducing environmental impact (paper costs). Toshiba has provided case studies (Exhibit 3) that show proof of cost reduction.

Benefits of PaperCut are:

1. Awareness – When employees are aware they are being monitored, there may be a reduction in non-business related printing. *Up to a 10% decrease.*
2. Hold and Release – A “find me” printing feature allows an employee to send to print but requires the employee to authenticate (card reader access) at the copier to release a print job. This will reduce the number of accidental prints and wasted prints sitting in copy rooms and devices. *Up to a 20% decrease.*

3. Filters, Restrictions, and Routing – *Up to a 30% decrease.*
  - a. Automatically route large jobs to nearby high volume, lower CPC devices
  - b. Discourage printing of emails via popup print policy warnings
  - c. Convert print jobs to mono instead of color
  - d. Convert print jobs to duplex (double sided) to save paper
  - e. Discourage or disable color printing by user group
  - f. Least cost routing (suggest more cost effective devices based on conditions)
  - g. Define action by job attribute, user / group, period of day, device feature / type.

The software may be purchased as a 36 month lease. The monthly cost for the software is \$408 for 300 licenses, plus \$175 per copier for a card reader to release print jobs. The reoccurring annual expense is \$4,896 plus a onetime expense for the card readers of \$2,800, totaling \$7,696. With the annual savings realized from consolidation, the City's total investment in the first year will be \$3000. Once the software has been implemented, up to a 30% decrease in usage will result in approximately \$14,000 in savings. The software will more than pay for itself. The ripple effect of using the software is not only elimination of waste but accountability and sustainability. In addition, as the volume of printing reduces, additional changes can be made to reduce the number of devices.

Furthermore, the creation of an administrative policy is necessary to outline the regulations that will be implemented with Papercut, as well as address future departmental requests for printing devices.

### **Implementation Plan**

Consolidation: Staff should be given an opportunity to address the nine printers recommended for removal and provide input if the device is an operational necessity prior to the removal. Printers can be easily removed from the network and be used as other devices need replacement or disposed of through the City's auction process. This recommendation can be put into effect immediately upon approval of recommendations.

Monitoring, Control, and Funding: The Procurement Department will transition responsibilities for MFDs to the I.T. Department. Procurement staff will provide training to I.T. staff on existing methods of management, budgeting, and invoicing. In addition, Procurement and I.T. will work with the Budget Department to consolidate funding under I.T. for FY 18/19. The expected completion of management transition to the I.T. Department to be completed prior to FY 18/19.

Printing Software, Policy and Training: The software may be purchased through the State of Florida contract. Once a Purchase Order is issued, it will take Toshiba approximately 25 days to install the software and card readers. I.T. staff will be responsible for coordination of installation. A testing phase will be required to ensure proper function and to explore options on restrictions. The Procurement Department will be utilized as the test group. Testing phase shall be approximately two weeks. This will assist I.T. staff with the formation of an administrative policy. Once the policy is approved, formal training will be conducted for all employees. Full implementation will require complete approximately three months after approval of recommendations.