

**City of Charlottesville**  
**Space and Inventory/Warehousing**  
**Evaluation**

*Report*

September 2017



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September 25, 2017

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Procurement and Risk Manager  
City of Charlottesville  
325 4th Street, NW  
Charlottesville, VA 22903

Dear Ms. Stieffenhofer:

We are pleased to provide you with this Space and Inventory/Warehousing Evaluation report. This report includes recommendations designed to improve the overall effectiveness and efficiency of the processes, procedures, and organizational structure of the City of Charlottesville's inventory and warehousing operations.

The recommendations included in this report are guided by feedback, input, and information provided by staff and key stakeholders, as well as industry standards and best practices that are appropriate for the City.

The Warehouse Function is staffed and led by diligent employees seeking to provide high-quality services to City of Charlottesville departments. Although currently only serving a select few departments, we are confident these recommendations will guide the Function as it seeks to improve inventory and warehouse operations throughout the City organization. Implementing these recommendations will require careful coordination and attention from the Function's leadership as well as support from City administration.

Thank you for the opportunity to work with the City of Charlottesville on this project.

Sincerely,

Michelle Ferguson  
Organizational Assessment Practice Leader

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## Executive Summary

As an internal service provider, the City of Charlottesville's Warehouse supports the ability of other City departments to carry out their own core functions. The Warehouse does this by minimizing operating costs and alleviating the burden of purchasing, receiving, storing, and disposing of goods and other inventory that City departments need on a day-to-day basis. Organizations that choose to operate a centralized warehouse function typically do so to take advantage of economies of scale and the benefits of bringing professional management to the warehouse operation, such as increased efficiency, limited investment in inventories, minimal spoilage, and decreased obsolescence. However, the decision to centralize a warehouse operation must be made with a clear understanding of an organization's use of internal services and the environment in which the organization operates.

In general, the City of Charlottesville operates with a relatively decentralized internal services culture. Departments rely on internal service providers in limited ways and take departmental ownership of some functions that could otherwise be completed by an internal service provider. The City's current inventory and warehouse management operations reflect this culture. The City's Warehouse Function is leveraged primarily by the Utilities Department, while other departments manage their own inventories and storage areas. As a result of this decentralized approach, the City is not taking full advantage of economies of scale and the operational benefits associated with professional management of a warehouse function.

In order to fully realize the cost and efficiency benefits associated with a central warehouse, the City must adopt a more centralized approach to warehousing by expanding the reach of the current Warehouse Function beyond the Utilities Department. Prior to being able to serve the entire organization, the Warehouse Function must document the needs of potential customers, articulate how a centralized function would improve service delivery and support for its customers, improve accuracy and security, and create the necessary infrastructure to serve an expanded customer base.

However, successful expansion of Warehouse services to more customers hinges on adequate staffing and coverage. The Warehouse is currently staffed by only one employee; therefore, backup support is needed and should be provided by other staff in the Procurement and Risk Management Division, including the new position recommended in the 2016 organization-wide Efficiency Study which was envisioned to augment existing staff.

The recommendations contained in this report provide an analysis of current operations and service levels and identify process enhancements designed to improve the efficiency and effectiveness of the Warehouse Function so it can meet the needs of all City departments.

The recommendations included in this report are listed below.

Number	Recommendation
1	Develop a more centralized approach to inventory and warehouse management.
2	Create a Warehouse User Advisory Group.
3	Begin tracking additional performance measures.
4	Implement a barcoding system.
5	Evaluate opportunities to contract for surplus property disposal.
6	Conduct space inventory evaluation and needs assessment.
7	Create a centralized Records Manager position for the City.

## Introduction and Methodology

In 2016, the City of Charlottesville retained the services of The Novak Consulting Group to conduct an organization-wide Efficiency Study. Following the completion of that study (in January 2017), the City contracted with The Novak Consulting Group to conduct a Space and Inventory/Warehousing Evaluation. The purpose of this evaluation was two-fold: 1) to identify and eliminate wasted resources and redundancy while increasing the amount of useful City storage space and 2) to increase the efficiency and effectiveness of the City's inventory and warehousing operations.

To accomplish these tasks, The Novak Consulting Group interviewed City staff involved with the Warehouse Function (Warehouse). A focus group was also conducted with customers and stakeholders who utilize Warehouse services in the City, including representatives from the following departments: Utilities, Police, Sheriff, Fire, Social Services, Transit, Public Works, and Parks and Recreation. The Novak Consulting Group also requested and analyzed background information provided by staff. A thorough review of the Function's core services was accomplished by evaluating budget information, performance indicators, and other salient data pertaining to operations and administration.

This process has resulted in a series of organizational structure and operational recommendations that are unique to the City of Charlottesville's specific operating environment. An overview of the Warehouse Function and detailed analysis and recommendations follows.

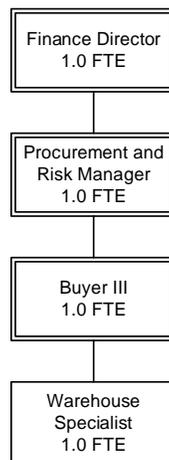
## Overview of the Warehouse Function

The Warehouse Function is housed in the Procurement and Risk Management Division of the City's Finance Department and offers the following services to City departments:

- **Shipping and Receiving:** The Warehouse serves as a central shipping and receiving point for all City departments as the facility has the only loading dock.
- **Storage:** A portion of the Warehouse's space is dedicated to short- and long-term storage of items such as furniture and files.
- **Inventory Management:** The Warehouse is responsible for overseeing and controlling the ordering, storage, and use of components (e.g., gas meters, pipe fittings, personal safety supplies such as hard hats, vests, and safety gloves) City departments need in order to provide services.
- **Surplus Property Disposition:** The Warehouse sells surplus vehicles and equipment online and non-vehicle/equipment items (e.g., furniture, computers) through monthly Warehouse Outlet (WHO) sales that are open to the public. The Warehouse donates those items that cannot be sold to local nonprofits.

The Warehouse is responsible for managing the City's warehouse facility, an approximately 20,000-square foot facility located in the Public Works Complex. The warehouse facility has both small shelf and pallet rack storage for about 2,000 items. While Warehouse services are made available to all City departments, the Utilities Department is the Function's primary customer. Currently, the inventory housed in the warehouse ranges from general use items, such as personal safety supplies, to specialty items, such as utility fittings and gas and water meters. However, it must be noted that not all the inventory stored in the warehouse is managed by the Warehouse Function. Currently, several fenced-off sections of the 20,000-square foot facility are occupied and managed by the Facilities Maintenance, Fleet Management, and Traffic Divisions of the Department of Public Works.

Warehouse services are provided by the Warehouse Specialist, who is responsible for the daily operations of the Warehouse. Several Procurement Division positions (the Procurement and Risk Manager, Buyer III, and Buyer II) provide additional support to the Function. The Buyer II manages the procurement side of the operation and handles the payment side (reviewing purchases and processing invoices) as is necessary from a separation of duties standpoint. The Buyer III provides direct supervision of the Warehouse Specialist and all special projects assigned to the position, in addition to developing and providing customer training. This position also audits monthly cycle counts and reconciles and manages the surplus property sales once the sale is complete, activities that cannot be completed by the Warehouse Specialist from a separation of duties perspective. The Procurement and Risk Manager provides high-level management and oversight of the Warehouse Function, which includes establishing policies and procedures and generating reports. In return, half of a Buyer II position is funded through the Warehouse’s budget. The following figure shows the organizational structure of the Warehouse.



**Figure 1: Warehouse Function Organizational Structure<sup>1</sup>**

The Warehouse functions as a pass-through for City departments, as it purchases and stores items departments need in advance and then makes them available on demand. The pass-through nature of the function makes it difficult to project revenues and expenditures. In response, the City does not budget for inventory purchased for resale because demand depends on departments, which results in what appears to be (but is not actually) a budget cut in FY 2017. For the purposes of this study, an estimate (for both revenues and expenditures) for FY 2017 has been generated using the four-year average value of the line item that accounts for resold goods. The following table summarizes the Warehouse Function’s historical and estimated expenditures. The Other Expenses category of expenditures includes all non-personnel expenses, such as utilities, equipment, insurance, etc.

**Table 1: Warehouse Function Historical Expenditures, FY2013-FY2017**

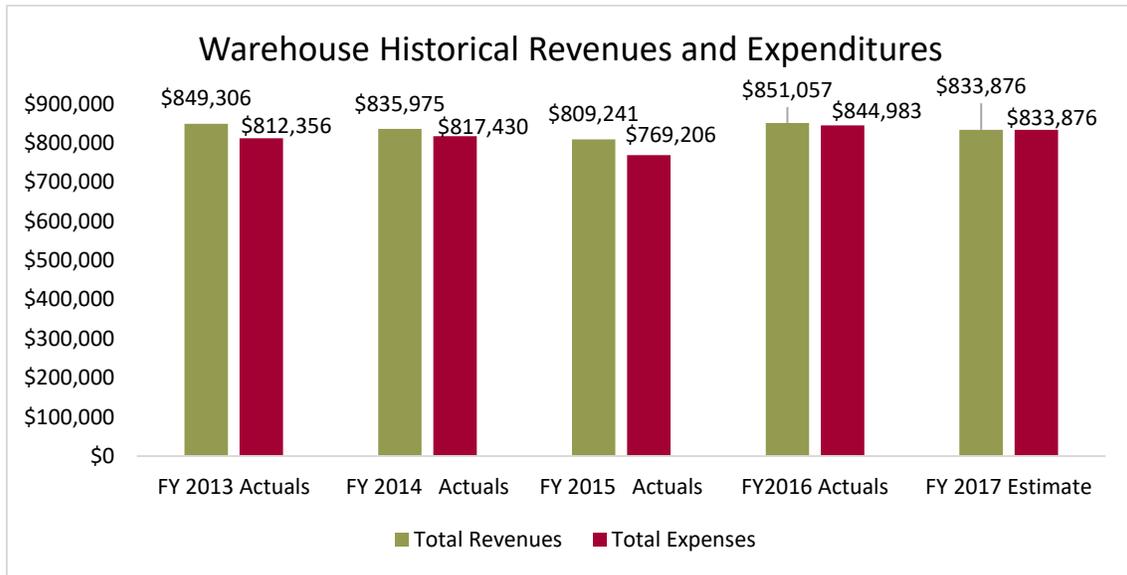
Category	FY 2013 Actuals	FY 2014 Actuals	FY 2015 Actuals	FY 2016 Actuals	FY 2017 Estimate <sup>2</sup>	Percent Change
Salaries and Benefits	\$89,964	\$97,199	\$97,229	\$97,935	\$101,281	13%
Other Expenses	\$722,393	\$720,231	\$671,977	\$747,048	\$732,595	1%
<b>Total Expenses</b>	<b>\$812,357</b>	<b>\$817,430</b>	<b>\$769,206</b>	<b>\$844,983</b>	<b>\$833,876</b>	<b>3%</b>

<sup>1</sup> Half of a Buyer II position is also assigned to the Warehouse Function

<sup>2</sup> Projects expenditures using the average value of the “Other Purchases – Resale” line item

The Warehouse has two sources of revenue: cost allocation and surplus sales. An average of 95% of the Warehouse’s revenue comes from its cost allocation and 5% comes from surplus sales. When customer departments purchase items from the Warehouse, they are charged using a cost allocation methodology that is based on the percentage of goods purchased on an annual basis. For example, 96% of the inventory managed by the Warehouse is for the Utilities Department, so 96% is charged to the Utilities Department. The Warehouse also receives revenue for the surplus property disposition services it provides. When the Warehouse sells a surplus item, it retains 20% of the revenue received from the sale.

Historically, the Warehouse Function’s revenues have exceeded expenditures by an average of 3%, as can be seen in the following figure, which compares the Function’s historical revenues and expenditures.



**Figure 2: Warehouse Function Historical Revenues and Expenditures, FY2013-FY2017**

## Analysis and Recommendations

As an internal service provider, the Warehouse is available to assist City departments by providing inventory and warehouse management services. For example, the Parks & Recreation Department uses weed killer in its normal course of business. Rather than either routinely purchasing or purchasing a large quantity of (and storing) weed killer, the Department can instead pick up the amount it needs from the Warehouse. This can save the Department time (both the time spent ordering and the shipping time), space (required for storing larger quantities) and money (as the Warehouse can buy the item in bulk for a lower per-unit price).

While warehousing services are available to all City departments, there is no mandate in place that requires departments to use the Warehouse. Currently, the City's Warehouse Function primarily serves the Utilities Department. Many departments choose to use the Warehouse to a limited extent, purchasing only select goods through the Warehouse. Meanwhile, other departments have chosen to manage their own inventories outside of SAP and storage areas, not relying on the Warehouse Function at all.

As an internal service provider, the perspectives of the Warehouse's customers are essential to this evaluation. Therefore, as was previously mentioned, The Novak Consulting Group facilitated a stakeholder focus group with representatives from the Warehouse Function's customer departments. Based upon the input provided during this focus group, the services provided by the Warehouse that are most appreciated are the central receiving and surplus inventory disposal functions. Stakeholders also appreciated the professionalism, efficiency, and willingness to help of the employee in the Warehouse Specialist position.

While focus group participants were generally pleased with their interactions with the Warehouse, it should be noted that many stakeholders report having few interactions with the Warehouse. In fact, this is one of the primary challenges facing the City when it comes to inventory and warehouse management: the decentralized nature of the City's inventory and warehouse management operations. Stakeholders said they often avoided using the Warehouse Function because they believe the Warehouse is more expensive than other vendors. As a result, many departments currently maintain their own inventory of goods.

The City's current approach to inventory and warehouse management operations results in inconsistencies and inefficiencies. Some departments track their inventory very closely (for example, the Fire Department uses a barcoding system to track its inventory of medical supplies) while others keep no records associated with their inventory of goods. This lack of coordination results in a duplication of efforts as administrative staff in each department must manage the demand planning, ordering, storage, and inventory management of goods. It also results in the City being unable to leverage economies of scale to save money when purchasing goods. Additionally, a lack of inventory tracking can result in items being purchased that are already in inventory.

The Warehouse Function also faces some internal challenges. Inventory management is an issue, as customers recounted instances when inventory fell below designated minimum stocking levels, actual inventory levels did not match with system inventory levels, and items purchased from the Warehouse were obsolete or spoiled. It should be noted that ongoing internal collaborative efforts are resulting in improvements in this area; the Warehouse now conducts an obsolescence review of a portion of its inventory every year and is working with customers to improve planning and minimize instances where inventory drops below minimum stock levels.

Related to the inventory management challenges are security challenges. To keep overhead costs low, the Warehouse operates with minimal staffing. This staffing level has service-level implications as customer departments are often responsible for retrieving their own orders because the Warehouse Specialist is busy with other tasks or is not on duty.<sup>3</sup> While customers report that the current service level is adequate, this approach does present some security challenges as the Warehouse is essentially open to any City employee with access to the Public Works Complex.

Finally, adequate space and a consistent approach to records management are challenges the City organization is facing. Because some Warehouse space is used for records storage, the Warehouse becomes central to this issue.

The recommendations in the following sections aim to address these challenges and improve service levels in the most efficient manner possible.

### **Core Warehouse Services**

According to the National Institute of Governmental Purchasing (NIGP),<sup>4</sup> there are five core functions of a central warehouse:

- Surplus Property Management
- Receiving and Inspecting Incoming Goods
- Storing Materials and Goods
- Managing Inventory
- Picking Materials to Fill Orders

The City of Charlottesville's Warehouse is completing these functions to varying degrees. The Warehouse provides comprehensive surplus property management services, in which customers simply deliver surplus property to the Warehouse and then receive revenue from its sale. The Warehouse also provides receipt and inspection, storage, and inventory management services, but not at the level specified by the NIGP. For example, while the Warehouse provides a central receiving point for City departments, Warehouse staff do not have time to thoroughly inspect all goods received as evidenced by the fact that some boxes stored in the Warehouse have never been opened. The Warehouse provides storage services to some departments in the City, but many departments have their own storage spaces. Similarly, the Warehouse proactively manages the inventory for which it is responsible, but many City functions maintain their own inventory of goods. For example, the fleet, traffic, facilities maintenance, parks, and EMS functions all have their own storage areas and inventory management practices. Finally, the Warehouse does not have an order filling function as it is essentially self-service and customers are responsible for filling their own orders.

Every warehouse operation must find the appropriate balance between accuracy, efficiency, and cost, given the context in which it operates. For example, systems could be established that enhance accuracy and efficiency, but for a price the customer is unwilling to pay. The recommendations in this section guide the Warehouse in determining whether expanded Warehouse services would improve the efficiency and effectiveness of warehousing functions throughout the City.

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<sup>3</sup> The Utilities Department is granted after-hours access to the warehouse to pick up items necessary for emergency repairs. Additionally, the Warehouse is not staffed during all operating hours.

<sup>4</sup> *Warehousing and Inventory Control*, NIGP 2016

**RECOMMENDATION 1: Develop a more centralized approach to inventory and warehouse management.**

According to the NIGP:

The objective of a sound inventory and warehouse management program is to minimize the funds invested in inventory and to minimize operating costs while optimizing the amounts of supplies available to the various service delivery systems of the organization. A centralized warehouse provides economies of scale and professional management, which limits investment in inventories, spoilage, and obsolescence.<sup>5</sup>

However, while centralization may make sense on paper, the organizational context (i.e., the environment in which the function operates) must be taken into consideration. Warehouse and inventory management is a service that should be designed to support and facilitate a City department's ability to carry out its own core functions. It should alleviate the burden on other City departments to purchase, receive, store, and manage goods and other inventory that they need on a day-to-day basis.

As noted, the City has maintained relatively decentralized warehousing practices across departments. In order for the City to move toward a more centralized approach, and thus capture the benefits of a centralized function, the Warehouse must initiate a strategic approach to expand its services.

The first step is to understand the needs of those departments that are currently not using the Warehouse to purchase and store goods. Recently, Department of Public Works and Procurement and Risk Management Division staff identified and toured all the storage facilities located throughout the City. The purpose of this exercise was to understand the amount and location of those storage spaces already available within the City as well as to begin to understand the storage needs of various City departments.

Comprehensive data regarding the types of goods being purchased throughout the City is currently not available. Therefore, the Warehouse should encourage departments to begin accounting for all the inventory they purchase in SAP, the City's Enterprise Resource Planning (ERP) system. The Procurement and Risk Management Division has already made some progress in this area and City departments are increasingly accounting for their inventory in SAP. Currently, nearly \$1 million worth of inventory is tracked in SAP. However, until all inventory is tracked in SAP, there is no way to quantify what percentage of the City's total inventory this represents. The following table shows the value of the inventory currently tracked in SAP by each City Department/Division. The Utilities Department has the largest inventory, followed by the Transit and Public Works Departments. A total of 60% (\$594,429) of the inventory tracked in SAP is stored in the warehouse, 28% is stored in the Transit Center, and 13% is stored in the Fleet Management parts room.

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<sup>5</sup> *Warehousing and Inventory Control*, NIGP 2016

**Table 2: Summary of Inventory Currently Tracked in SAP**

Department/Division	Stock Value Tracked in SAP
<b>Utilities</b>	<b>\$526,530</b>
Gas	\$325,676
Waste Water	\$36,057
Water	\$164,797
<b>Transit</b>	<b>\$275,242</b>
<b>Public Works</b>	<b>\$159,588</b>
Facilities Maintenance	\$11,497
Fleet Management	\$126,441
Public Services	\$254
Public Works	\$2,287
Traffic	\$19,108
<b>Other</b>	<b>\$33,965</b>
<b>Parks &amp; Recreation</b>	<b>\$484</b>
<b>Police</b>	<b>\$303</b>
<b>TOTAL</b>	<b>\$996,112</b>

In addition to facilitating the collection of data that quantifies demand for Warehouse services, Procurement and Risk Management Division staff should meet with representatives from each Department to more fully understand their department's inventory management and storage needs. Departments may have additional needs that are not captured in the quantitative data. As an example, space for records was repeatedly brought up by several department representatives during the stakeholder focus group. Understanding these needs is necessary to align the services provided by the Warehouse with the needs of City departments. While some space in the Warehouse is currently used to store records, the Warehouse has not taken steps to meet the unique storage needs of records. As such, departments must determine their own means of addressing their records storage needs. Without working to more fully understand the needs of City departments, the Warehouse will continue to be underutilized as an internal service provider.

Once the Warehouse has a thorough understanding of the demand that exists within the organization for inventory and warehouse management services, it can move on to the second step in laying the groundwork for a centralized inventory management and warehouse program: quantifying the benefit and costs of the program. There is a reason centralized warehouses are most often seen in large organizations: they purchase enough goods that the cost of a central warehouse is more than covered by savings realized through bulk purchasing and professional management. Once additional information regarding the type and quantity of goods purchased throughout the City is available, the Warehouse can then begin to identify the goods that should be purchased in bulk and quantify the associated savings. In addition, it will be possible to assess the impact additional customers would have on the Warehouse's workload, and therefore determine overhead costs. As the costs associated with operating the Warehouse are spread across a larger inventory of items, it may become possible to decrease the cost allocation amount. Ultimately, this information can then be used to demonstrate the value of centralized warehouse functions.

The third step involves providing a test case. As has previously been mentioned, the Warehouse currently only serves a few departments. Demonstrating that the needs of additional departments can be met will serve as a valuable marketing tool for the Function. The Public Works Department is a large City department with a significant amount of inventory, including street signs, street lights, light bulbs, floor tiles, etc. Much of this inventory is already stored in the Warehouse, but managed by Public Works. Providing inventory management and warehouse services to the Public Works Department will require the Warehouse to create the infrastructure necessary to handle additional customers while also demonstrating success. The Warehouse Specialist would be responsible for incorporating Public Works' inventory items into the Warehouse's inventory, which includes capturing items in SAP and working with Public Works staff to understand demand so minimum reorder points can be established. It is recommended that the Fleet Management Division's inventory not be centralized, as discussed in the Fleet Management Report. Warehouse management reported that the Warehouse Specialist position has the capacity to manage additional inventory. This approach of slowly adding customers will enable the Warehouse to grow its operation while ensuring service levels are maintained.

In laying the groundwork for a more centralized approach to inventory and warehouse management, the Warehouse Function will be able to determine the right balance between accuracy, efficiency, and cost – essentially the service level desired by City departments. The service level will impact the staffing level necessary to meet expectations. For example, if customer departments would prefer to have their orders filled and delivered to them, that will be a higher level of service than can be provided with current staffing. As more customers are added, Warehouse management will need to be aware of the ability of the Warehouse Specialist to maintain service levels. In particular, management should monitor workload indicators, such as the frequency of instances when inventory falls below minimum levels and is not promptly restocked. To support seamless Warehouse operations, the Buyer III position recommended in the organization-wide Efficiency Study should be trained to backfill for the Warehouse Specialist.

If the overhead costs of the Warehouse are greater than the savings that can be realized through saved time and bulk purchasing, making use of the Function may not be cost effective for departments. If this is the case, the City can continue operating a warehouse that primarily serves the Utilities Department. However, if it proves beneficial for the organization to have a central warehouse, then it is recommended that the Warehouse engage a group of advisors to provide guidance regarding decisions that affect service levels on an ongoing basis.

**RECOMMENDATION 2: Create a Warehouse User Advisory Group.**

As discussed, the Warehouse is not being fully utilized by all City departments. The previous recommendation involved the Warehouse developing a comprehensive assessment of the needs of City departments and using that information to better shape its service offerings. However, it is important that these new connections with customers not be lost.

As an internal service provider, it is essential that the Warehouse remain in touch with its customers. To maintain this connection, it is recommended that the Warehouse create an advisory group composed of representatives from current (Utilities, Public Works, Parks and Recreation, and Social Services departments) and potential customer departments, such as the Police, Fire, and Transit Departments. The Procurement and Risk Manager and Warehouse Specialist would attend meetings and be responsible for following up on items between meetings.

The purpose of this group would be to advise Warehouse staff on issues that affect service levels and costs. This group would meet on a regular basis (i.e., quarterly). During meetings, Warehouse staff would

be given the opportunity to raise issues upon which they would like guidance and group members would be able to share the concerns of their department.

**RECOMMENDATION 3: Begin tracking additional performance measures.**

Performance measurement is a tool that can be used to quantitatively evaluate performance, make ongoing assessments, and guide regular program improvements that are responsive to evolving conditions or resources. Two types of performance indicators exist: efficiency measures and effectiveness measures. Both types of measures are calculated using input and output data. Definitions of some important performance measurement terms follow:

- **Inputs** are the amount of resources used in producing an output or outcome (e.g., dollars spent on Warehouse services, number of Warehouse employees).
- **Outputs** are the amount of work done within an organization, or the workload (e.g., number of orders filled, number of items in the inventory, size of inventory stored).
- **Efficiency measures** indicate how well an organization is using its resources and are expressed as a ratio between the amount of input and the output/outcome (e.g., number of orders filled per FTE, dollars saved per dollar spent on Warehouse services).
- **Effectiveness (or outcome) measures** indicate how well the service accomplishes the intended purpose and is of direct importance to customers and the public. Effectiveness measures typically capture quality, cycle time, and customer satisfaction (e.g., average number of days to fill an order, percentage of orders and materials delivered on or before the requested delivery date, percentage of customers who are “satisfied” or “very satisfied” with Warehouse services).

In general, data related to inputs and outputs should not be tracked unless that data is used to calculate an outcome measure. This is because time should not be invested in the tracking of activities that do not contribute to desired results. However, tracking output measures, in addition to efficiency and effectiveness measures, can be useful in situations where the impact of activities on a goal is unknown.

Currently, the Warehouse primarily monitors two performance measures: the difference account and surplus revenue to goal. The difference account tracks gains and losses in the Warehouse Fund. The goal is to finish the year with more gains than losses (or as close to zero as possible). This effectiveness measure captures the Warehouse’s ability to appropriately forecast the needs of customers. The other performance measure currently monitored – surplus revenue to goal – tracks the Warehouse’s progress toward its goal of bringing in \$20,000 (a goal set by the Warehouse Function) in surplus revenue from the administrative fee associated with its surplus property disposal service.

Tracking a variety of measures makes it possible to triangulate whether the Warehouse is efficiently and effectively meeting the needs of the City organization. To better monitor the performance of the Warehouse, it is recommended that additional performance measures are tracked. A list of potential performance indicators follows.

- **Inventory Turnover Rate:** measures the amount of times an item is used up within a given period (usually one year). Four to six turnovers per year is a realistic goal.
- **Inventory Carrying Costs:** reflects how much money it takes to carry material within the Warehouse, taking all the costs associated with maintaining the Warehouse into consideration (storage space costs, equipment handling costs, inventory risk costs, personnel and taxes costs, and capital costs). A goal of 18-24% is reasonable for a public warehouse.

- **Cycle Time:** measures the time it takes for an order for materials or services to be filled. Internally, tracking this information for stock and non-stock items separately can be useful.
- **Records Accuracy:** monitors the number of discrepancies discovered during monthly inventory counts.
- **Overhead Surcharge Amount:** is a measure of efficiency that is critical to the customer.
- **Inventory Managed by Warehouse:** captures the reach of the Warehouse operation and quantifies the ability of the Warehouse to meet the needs of the City organization.
- **Customer Satisfaction:** this is an important measure of how customers perceive overall Warehouse performance.

### **Inventory Accuracy and Warehouse Security**

Inventory represents a significant financial investment by the City. As such, stewardship is a key responsibility of the Warehouse Function, ensuring the City does not incur costs that are avoidable. On a monthly basis, Warehouse staff complete physical counts and correct any shortages or overages by charging or crediting the department that uses those items. For example, if a water meter is missing from the Warehouse's inventory at the end of the month, it is charged to the Utilities Department. While 100% accuracy may not be practical, that is the target for which the Warehouse should strive. The recommendations in this section aim to enhance inventory accuracy and security in order to protect the City's investment and improve service levels.

#### **RECOMMENDATION 4: Implement a barcoding system.**

In some respects, the Warehouse currently operates like a store, where customers come in and select their goods. However, the checkout process currently in place in the Warehouse is not like most modern stores. Customers leave a paper with the necessary information for the Warehouse Specialist to process later. This approach presents some inventory control challenges due to the likelihood of human error. The current process relies on customers to 1) select the correct item, 2) accurately note the item's information, 3) accurately capture the number of items purchased, and 4) leave the necessary information to be appropriately charged (i.e., cost center). The process also relies upon the Warehouse Specialist to accurately enter that information into SAP.

To improve inventory accuracy, it is recommended that the Warehouse implement a barcoding system to track items and appropriately assign accountability to the individuals and departments taking material away from the Warehouse. Barcoding systems use reflective light technology to scan barcoded items and transmit data through the computer system. In order to implement this technology, the following equipment may be necessary: barcode reader, hand-held device, scanner, software package, and label printer. Many vendors offer out-of-the-box barcode system solutions that are compatible with SAP. It should be noted that The Novak Consulting Group recommended that the Fleet Management Division begin barcoding its inventory as well. These efforts should be coordinated.

Radio Frequency Identification (RFID) is a technology that is replacing barcoding systems, with half of manufacturers reporting they have implemented such technology as of 2015.<sup>6</sup> RFID involves tags that send out a signal that can be picked up by radio wave emitting readers, allowing for the tagged object to be tracked. Due to the costs associated with RFID infrastructure (\$0.75/unit and up for passive RFID tags), their use by local governments is currently limited. However, this is a trend the Warehouse should monitor in the coming years.

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<sup>6</sup> *Warehousing and Inventory Control*, NIGP 2016

**RECOMMENDATION 5: Evaluate opportunities to contract for surplus property disposal.**

The Warehouse Function handles the sale of all surplus property for the City, including vehicles. With regard to vehicles, the Fleet Manager must first approve the disposal of a vehicle. Then the vehicle is referred to the Warehouse Function and the Warehouse Specialist oversees the sale, which is typically handled online via [www.publicsurplus.com](http://www.publicsurplus.com).

Non-vehicle/equipment surplus inventory is handled differently. City departments bring any non-vehicle/equipment items they would like to dispose of to the Warehouse, such as furniture and computers. The Warehouse Specialist then prices these items and sells them through the monthly WHO sale that is open to the public. Non-vehicle/equipment items that do not sell within three months are then donated.

Over the past three years, the Warehouse has brought in an average of \$165,000 in revenue per year for the City, 98% of which is from the online sale of vehicles and equipment. The Warehouse keeps 20% of all surplus sale revenue and disburses the rest to the department that provided the item for sale. The following table compares the revenue brought in via online sales of vehicles and equipment with the revenue brought in via sales of other goods through the WHO.

**Table 3: Summary of Surplus Property Revenue**

Fiscal Year	Online			WHO		
	Customer Department Revenue	Warehouse Revenue	Total Revenue	Customer Department Revenue	Warehouse Revenue	Total Revenue
2015	\$154,908	\$20,389	\$175,297	\$2,718	\$364	\$3,082
2016	\$128,164	\$16,106	\$144,270	\$3,075	\$412	\$3,487
2017	\$149,059	\$18,385	\$167,444	\$1,907	\$255	\$2,162

Disposal of surplus non-vehicle/equipment inventory yields a small amount of revenue for the City (less than \$3,000 per year on average), and it also presents some unique challenges. Opening the Warehouse up to the public generates considerable foot traffic and creates security and liability concerns. In addition, sale of surplus property through the WHO requires a disproportionate amount of the Warehouse Specialist's time and takes up valuable Warehouse space. Because customer departments appreciate that the Warehouse manages the disposal process, it is recommended that the Warehouse continue providing this service. However, instead of directly managing the sale of inventory (through the WHO and via online sales), it is recommended that the Warehouse evaluate opportunities to contract out this function.

Jurisdictions in the Commonwealth of Virginia have three options when it comes to disposing of surplus property: 1) they can sell it themselves; 2) they can contract with the Virginia Department of General Services' Office of Surplus Property Management (OSPM); or 3) they can contract with a third party for the disposal of surplus property. Reportedly, the OSPM will only take on surplus property sales for a jurisdiction if all property (including vehicles) are included in the contract. However, given the portion of the Warehouse Specialist's time vehicle disposal requires, this may be an acceptable arrangement, particularly given the planned expansion of Warehouse services discussed in previous recommendations.

If the Warehouse decides to continue hosting its WHO sales, it is recommended that these sales be relocated to an isolated area of the Warehouse. Currently, inventory from the Facilities Maintenance Division of the Department of Public Works occupies an area of the Warehouse that is secured by fences

and has a separate entrance. Once the Warehouse begins managing the Facilities Maintenance Division's inventory, this space could be used for the Warehouse's monthly sales.

### **Storage Space**

In many organizations, limited space for storage represents a significant and growing issue. Such is the case in the City of Charlottesville. In June 2017, the Public Works Director and Procurement and Risk Manager toured the City's various storage facilities. Several challenges were observed during this tour. First, there is a clear mismatch of supply and demand within the City; there are facilities with un/under-utilized space and there are departments contracting for storage space. Second, valuable storage space is used to store outdated and unnecessary items that are in excess to needs. Third, many items are stored that are not formally inventoried. Finally, the need for storage, particularly for records, is growing and will continue to grow if not addressed. In fact, the Department of Social Services recently began contracting out record storage and retrieval services, spending approximately \$4,000 annually. The following recommendation is designed to align demand for and supply of storage space within the City of Charlottesville organization.

#### **RECOMMENDATION 6: Conduct space inventory evaluation and needs assessment.**

It is recommended that the City of Charlottesville work to align the need for storage with available storage space. To accomplish this, a complete inventory of available storage space must first be conducted. The inventory should capture the location, square footage, department, and suitability (i.e., climate, accessibility, security, etc.) of all existing storage spaces throughout City facilities as well as qualitative information regarding the current use (e.g., records, cleaning supplies, office supplies, lunch room, etc.) and whether any inventory is currently tracked in SAP.

Once the available storage space has been inventoried, the focus will shift to quantifying the storage needs of each City department. A thorough understanding of the types of inventory currently stored by each department and any projected space needs will require individual meetings with representatives from each department.

Equipped with a thorough understanding of the inventory of storage space and the needs of all City departments, spaces can be assigned in the most efficient manner possible. Given the City-wide, cross-departmental scope of this project, the success of this inventory and needs assessment project will require the support of the City Manager's Office. As such, it is recommended that it be managed by the City Manager's Office (although the bulk of the work could be completed by a summer intern). The support of City leadership will be critical to ensuring the City's storage space is allocated in the most efficient way possible.

In addition to the recommendation regarding records storage which follows, a comprehensive policy regarding the retention, disposition, and/or destruction of surplus property should be promulgated. Additionally, a bi-annual review of all property storage should be conducted and dated, surplus, or useless property disposed of according to the standards developed.

Given the high (and possibly increasing) demand for records space by many departments, it will likely become clear that the City needs to enhance its digitization efforts. The Records Manager position recommended in the following section should be tasked with overseeing this effort.

## Records Management

Organizations that lack policies and procedures to control records and information may keep records too long, destroy records too soon, spend too much money storing them, and struggle to locate stored information. The creation, storage, retrieval, use, and destruction (or permanent archival) of information has become increasingly important for organizations. In 1982, the National Association of Government Archives and Records Administrators (NAGARA) published its *Principles for Local Government Records* to ensure sound records management. The organization continues to update and build upon these principles.

The standardization of records management policies and procedures ensures that appropriate attention and protection are given to all records, and that the evidence and information they contain can be retrieved more efficiently and effectively using standard practices and procedures. As records management becomes increasingly complex, the field has become its own specialized discipline. The following recommendation will centralize and professionalize records management functions in the City of Charlottesville.

### **RECOMMENDATION 7: Create a centralized Records Manager position for the City.**

Like all organizations, the City creates and maintains a large quantity of records ranging from meeting minutes, to databases of financial transactions, to confidential social service case files, to maps and plats of property. The City of Charlottesville does not currently have a records retention policy in place. As such, each department is responsible for maintaining its records in accordance with state and federal laws.

This decentralized approach to records management presents several challenges. First, not having policies and procedures in place can result in departments inconsistently retaining and destroying information. Second, the number of Freedom of Information Act (FOIA) requests that organizations are receiving is increasing. Third, as space increasingly becomes an issue (as previously discussed), more departments may have records storage needs that exceed their available space. Without policies and procedures in place, space issues will be exacerbated.

Some departments are using the Warehouse to store records. Compared with many of the items typically managed by the Warehouse, records present unique challenges. First, as previously mentioned, records have unique storage needs when it comes to fire prevention. In addition, different types of records have custom needs when it comes to retention, accessibility, and confidentiality: some records must be retained for a certain number of years while others must be retained forever; some records must be easily accessible for future reference; some records must be secured to maintain confidentiality.

It is recommended that the City create a Records Manager position. This position would be responsible for working with designated person(s) in each department to coordinate records retention needs with the inventory of available space and for developing document retention and destruction policies. This position would also be responsible for coordinating responses to the increasing number of FOIA requests submitted to the City. In addition to meeting the City's ongoing records management needs, this position could be tasked with additional responsibilities associated with the open data policy the City of Charlottesville adopted in June 2017, such as facilitating the collection and update of relevant data from departments.

## Conclusion

This Space and Inventory/Warehousing Evaluation was undertaken to increase the efficiency and effectiveness of the City of Charlottesville's inventory and warehousing operations. As an internal service provider, the focus of the Warehouse is on meeting the needs of City departments. Customers appreciate the central receiving and surplus inventory disposal functions provided by the Warehouse. However, the Warehouse currently only serves a few City departments; the remaining City departments maintain their own inventory of goods.

As a result of the City's decentralized approach to inventory and warehouse management, the City is not taking full advantage of economies of scale and is not reaping the operational benefits (efficiency, accuracy, etc.) associated with professional management. The recommendations herein serve as a guide for assisting the Warehouse with its efforts to meet the inventory and warehouse management needs of all City departments. The recommendations involve: conducting a comprehensive needs assessment that will enable the Warehouse to make the business case for City departments to leverage its services; improving inventory accuracy and warehouse security to boost operational efficiency; and enhancing records management in the City.

The recommendations included in this report will require dedicated attention and support from Procurement and Risk Management Division management and Finance Department leadership. It also assumes that the City implements the direction outlined in the Efficiency Study, including the recommendation to create an additional Buyer III position, which will be trained to backfill for the Warehouse Specialist. Implementation of these recommendations will take time and hard work to be successful. However, pursuing these opportunities will build upon the strengths of the Function's dedicated staff and result in a more efficient and effective approach to warehouse operations throughout the City.