

Index

Executive Summaries

a. Personnel	2
b. Sustainability	2
c. Materials Management	3

I. Personnel

a. Background	4
b. Application Process	4
c. Departmental Recruiting	6
d. The City Residency Requirement	6

II. Sustainability

a. Background	8
b. Energy Efficient Lighting	8
c. Occupancy Sensors	9
d. Sealing Windows	9
e. Reducing Wasted Energy Costs	9
f. Total Savings	9

III. Materials Management

a. Background	10
b. Purchasing	11
c. Inventory	11
d. Software	12

IV. Appendix

a. Document of Energy Studies	13
b. City Hall Limited Lighting Survey	14
c. City Hall Lighting Detail	15

Executive Summary

In order to properly determine how to make the Public Property Department function more efficiently, we decided to focus on three primary areas whose improvement would bolster the entire Department as a whole.

Personnel

We examined the hiring and recruiting practices of the Department of Public Property's Office of Human Resources and compared them to the policies of several other major cities. The chief difficulty faced by the Department is the recruiting and hiring of skilled trades workers. Three issues directly contribute to this problem: the length of the application process, lack of departmental recruiting, and the City residency requirement. To make applying less burdensome, we recommend the elimination of the application fee, as well as offering an on-line option through which to apply.

Furthermore, it is imperative that the Office of Human Resources' staff is increased, and on-site applying, testing, and interviewing is conducted at trade schools and recruiting venues. In order to increase awareness of City occupations, the Department should hire a professional recruiter and publish job postings in relevant trade publications. Finally, to expand the pool of skilled applicants, the residency requirement designating that only City residents can be employed by the City should be modified so that residents of surrounding counties are permitted to work.

Sustainability

There are many simple and cost effective ways to reduce energy usage in city buildings. A simple initiative that would reduce energy costs that doesn't have too much of an upfront cost is to switch to more energy efficient lighting. This means that the city must replace all of the incandescent bulbs with compact fluorescent. If a light must always stay on it would save money over time to switch to an even more efficient LED bulb. The best way to reduce lighting costs is to install occupancy sensors in single person offices that turn off the lights when no one is in the room.

Hiring trades people who can check windows for proper insulation against air leakage is a simple, yet effective way to cut HVAC costs. Also, if employees were to raise their summer thermostats to 75 degrees rather than 70 would save over 10% on cooling costs, while providing a comfortable working environment. Finally, computers are one of the largest drains of power in the city's offices. Adjusting computers enter to hibernate or sleep mode as opposed to screen saver mode would lead to significant energy savings.

Materials Management

Public Property's materials management division can increase efficiency if it focuses on purchasing, software, and inventory. With the ultimate goals of increased item availability, improved response times, and reduced overtime hours, Public Property should:

- Continue to promote communication between city departments regarding purchasing decisions and details in the Networking Committee.
- Temporarily divert some maintenance teams to effectively survey the City's properties.
- Develop Maximo to include a searchable, real-time, on-line database and an inventory list organized by property location.

I. Personnel

Background

The Department of Public Property's Human Resources Office is charged with hiring personnel to maintain City-owned properties. Currently, the Office's primary challenge is recruiting and hiring highly-skilled trades workers, such as electricians, electronic technicians, and building maintenance mechanics. We examined three key issues that directly affect and contribute to this challenge:

- The application process
- Departmental recruiting
- The City residency requirement

To better understand these issues, we researched the hiring and recruiting practices of public property management departments in several different cities. These included Baltimore, Seattle, Washington D.C. and New York City.

Application Process

Recommendations

- The City of Philadelphia should allow applicants the option of applying on-line
- The application fee should be eliminated
- The Office of Human Resources should work in conjunction with the Department of Public Property to receive applications and conduct on-site testing and interviewing at trade schools and other recruitment venues in order to quickly and effectively fill vacant trade positions.
- The Office of Human Resources' staff should be increased to accelerate the application processing time and more quickly administer tests

The current application process for the City of Philadelphia involves several steps, as shown below:

Application → **Testing** → **Interview** → **Background Check** → **Physical Examination**
 {Office of HR} {Office of HR} {Public Property} {Public Property} {Assigned by Public Prop.}

The process begins with an applicant submitting an application either in person or through the mail. Depending upon the position, an applicant may have to pay a \$35 application fee. The application review and testing are conducted by the Office of Human Resources. Once applicants

are selected and certified, the two applicants with the highest ratings are passed on to Public Property; this is known as the rule of two. Public Property then conducts interviews, chooses the best candidate, and presents a job offer. A background check, which takes an average of five to ten days, is then conducted by Public Property through a private company. Finally, a scheduled physical examination is conducted by the City's Medical Evaluation Unit. Once this is completed and approved, the individual can begin to work.

The time period for this process typically ranges from six weeks to six months, with the application review and testing components accounting for the majority of time. Compared to the private sector, this is a long period which contributes to Public Property's difficulty in hiring skilled workers, since the amount of waiting time may dissuade otherwise interested and available applicants. Several other large cities, including Baltimore, have similar lengthy processing times. Nevertheless, cities that have larger personnel departments or give greater hiring control to the individual public property-managing department, such as in Seattle, had a shorter processing time of approximately one month. Currently, the Office of Human Resources has approximately 60 personnel that are responsible for reviewing all applications for every City department. Additional employees would increase the efficiency of this process.

Aside from general funding, personnel, and jurisdiction changes that could improve the application process, other steps can be taken to encourage higher-skilled applicants to apply. While other cities allow applicants to apply online, Philadelphia does not offer an online application process. Although an applicant can print an application, the ability to apply directly online would be faster and more convenient, thus offering greater incentive for individuals to apply. In addition, Philadelphia's application fee can discourage otherwise interested applicants. Although this can be waived on a case-by-case basis, no other city examined had any application fees.

Currently, the Department of Public Property is not allowed to administer on-site tests or application reviews at recruiting venues such as trade schools. Allowing the Department to work in conjunction with the Office of Human Resources to do this would allow for faster recruitment and hiring of needed personnel.

Departmental Recruiting

Recommendations

- The Department of Public Property should hire a professional recruiter or recruitment agency to better target desired personnel
- The Department should publish job postings for difficult-to-fill positions within relevant trade magazines and publications

Currently, no individual within the Department of Public Property is charged with the sole responsibility of recruiting skilled trades workers. On-site recruitment at trade schools and other recruiting venues are not being pursued due to a lack of available staff.

Other major cities approach recruitment more aggressively than the Department of Public Property. The City of Seattle's Fleet and Facilities Department has placed two employees in charge of recruitment and has also contracted a professional recruiter for higher skilled positions. In addition, job postings have been published in trade magazines. In Baltimore, the Department of Public Works' Bureau of General Services does not have a division focused on recruitment, but it does recruit at trade schools.

Recruitment at trade schools and within trade magazines would increase awareness of the Department, and would likely result in increased applicants.

The City Residency Requirement

Recommendation

- The residency requirement which specifies that only Philadelphia residents can be employed by the City should be modified so that residents of surrounding counties in the Greater Philadelphia area are allowed to be employed for trades positions.

The City's longstanding residency requirement prohibits the employment of individuals who do not maintain an active residency in Philadelphia after six months of employment. Neither Baltimore, Washington D.C., nor Seattle has a residency requirement for these positions, and other cities, such as New York City, allow residents from surrounding areas to work in these positions.

The residency requirement prohibits a large pool of potential applicants for needed positions within the Department of Public Property. While the City has a vested interest in employing its own residents, allowing skilled workers who live in the Greater Philadelphia region to be employed would benefit the Department and the City. To ensure that current residents remain a priority, the City could follow the example of Washington D.C. and allot extra testing points to an applicant who lives within the City.

II. Sustainability

Background

Over the past year there has been a major energy crisis that has greatly hurt the City of Philadelphia. PECO now charges over a third more for the same amount of electricity, making the annual bill for just City Hall over \$1,000,000. However, this additional cost provides an exciting opportunity to invest in making the city's facilities more energy efficient. What was irrational last year is now cost effective, so the City of Philadelphia must make the necessary changes to reduce energy costs, save money, and help in the fight to solve the climate crisis. We researched different initiatives that the city could implement immediately that would reduce energy costs, and payback the initial investment within a short period of time. These initiatives can be split into four categories:

- Energy Efficient Lighting.
- Occupancy Sensors
- Sealing Windows
- Reducing Wasted Energy Costs

For the sake of this report we focused on determining what could be done in city hall, because it is a building we are familiar with. All of these initiatives could be used in other government buildings

Energy Efficient Lighting

Many of the lights in city hall are outdated, so replacing them with newer, more efficient solutions will save money. Philadelphia Lighting Maintenance Co. has already created a proposal to remove the incandescent lights and T12 bulbs on the 2nd and 4th floor and install compact fluorescent and T8 lights. This process would be fairly simple, and it will improve lighting quality in these rooms while saving money in the long run. This study shows that the amount of the initial investment would be entirely saved in a 27 month period, and would save \$11,000 each year.

The hallway lights city hall are required to be on all the time including weekends and nights. An incredible amount of energy and money is required to power these lights. The 7th floor hallway is powered by 186 fluorescent T8 bulbs, which cost the city \$6,481.59 a year. Replacing these fluorescent bulbs with energy efficient LED T8 bulbs would save the city \$3,336.11 per year. These bulbs can be easily installed in the existing light fixtures, and because they last five times longer than the conventional fluorescent T8 bulbs it will save the city in manpower. There LED bulbs doesn't have to be installed all at once. They can be gradually phased in at any rate. The

initial cost will be paid back within 35 months, and will save the city \$7,790.61 over a 5.7 year bulb lifetime.

Occupancy Sensors

Studies have shown that by installing occupancy sensors in offices, which can sense when there is no longer anyone in the office, saves about 31% of energy costs. For the approximately 500 single person office rooms replacing the existing light switches with occupancy sensors will produce a dramatic savings. These switches are easily installable, and don't require any new wiring. The initial costs are paid back in less than 25 months; and after that period they will save \$14,524.58 per year.

Sealing Windows

One of the largest drains of heat and air conditioning (AC) is through window leakage. Most of the windows in city hall are double hung sash windows, and many have AC window boxes housed within them. For the AC to work the bottom sash must slide up, which allows for a passageway of air that enters below the top window and above the bottom window. We must make sure these are sealed properly. A good contractor should be able to identify how much energy is being wasted by not sealing these windows, but it would likely far outweigh the costs of installing a strip that would stop this passageway.

Reducing Wasted Energy Costs

The administration must work with every department to educate employers about the qualitative and quantitative results of their actions. There are many things large and small that can be done to reduce our energy consumption and every employee of the city must know these guidelines. Turning the thermostat up in the summer from 70 to 75 degrees decreases the cost of cooling city hall by 10.5%. If fully implemented this would produce a savings of \$12,992.41 per year. Also, by turning off screensavers, and putting computers and monitors into hibernation mode reduces energy costs by about \$14 per person per year. This would produce a savings of about \$11,000 per year in City Hall.

Total Savings

If all of these recommendations are taken and successfully implemented, the city will save \$52,853.10 per year, a 5.08% drop in the electricity bill. This will decrease the annual CO₂ output by 94,864.54 tons per year.

III. Materials Management

Background

Public Property's official mission is to manage "the physical infrastructure that supports City government operations."¹ In addition to acquiring, disposing, leasing, designing, and constructing public properties, the department is also responsible for the "renovation and maintenance of City properties."² Public Property currently maintains 164 buildings totaling over 6 million square feet.

- **Purchasing:** Purchasing issues are compounded by a lack of communication between departments, which often leads to duplication of effort and waste of resources. For example, departments often draft similar specifications for departmental bids seeking similar items and departments often issue small order purchases where a larger contract serving multiple departments would be appropriate.
- **Inventory:** Public Property stores all of its approximately 4,700 items in the basement of City Hall. The Department estimates that nearly 3,000 items that have never been requested for maintenance purposes and that half of those items are obsolete. However, the Department is unable to identify which parts still correspond with existing systems in city properties because the Department has not thoroughly surveyed its properties. Currently, maintenance teams respond to departmental complaints by surveying the source of the problem, returning to City Hall to acquire the appropriate materials for the repairs, and returning to the property in order to finish the job.
- **Software:** Public Property recently purchased Maximo in order to manage its inventory. Public Property's previous computerized inventory system was not user friendly. The Department is seeking the best way to customize Maximo in order to best suit its needs and promote cooperation between departments.

¹ "Philadelphia Department of Public Property," <http://www.phila.gov/property>.

² Ibid.

Purchasing

Recommendations

- Public Property should continue its efforts with the newly formed Networking Committee to increase communication between departments with regard to inventory and procurement.

On July 31, 2008, representatives of Public Property, the PWD, the Fairmount Park Commission, and the Office of the Mayor met in City Hall for the inaugural meeting of the Networking Committee. The goals discussed included encouraging other departments to attend future Committee meetings, better communication in drafting specifications for departmental purchases, and increased awareness of the inventories of various city departments to increase item availability throughout the City.

Inventory

Recommendations

- Public Property should have a full survey of its properties readily available for its own reference and for use by other related city departments.

Public Property should establish a system of Temporary Duty Assignments, whereby specialized maintenance teams will be reassigned for a period of time to thoroughly survey their properties. Temporary costs of taking inventory include a slowdown in service and increased overtime pay, but potential benefits include:

- Time reduction: If Public Property maintenance teams could bring the necessary parts to repair city properties when they first respond to a department's request, facilities would be repaired more quickly.
- Cost reduction: Public Property paid \$981,803 in overtime pay in fiscal year 2008. If Public Property maintenance teams could repair facilities more quickly, the Department would require less overtime hours from its trades people.

Software:

Recommendations

- Public Property should develop a searchable on-line inventory database using Maximo.
- Public Property should organize its inventory database by location.

The City of Houston and the Philadelphia Water Department (PWD) are the best examples of best practices for using an online inventory database. The PWD believes that Maximo has enabled them to reduce inventory items by 1/3 and increase item availability from 85% to 97% since 1997. The two main features of Houston's and the PWD's systems that Public Property should adopt are:

- On-line inventory database: On its website www.houstontx.gov, Houston provides a Purchasing Catalog that lists all the city's contracts, vendors, and items purchased. This is a phenomenal outreach tool whereby citizens can better understand government spending, vendors can better understand how to do business with the city, and departments can better find the goods and services they require. The PWD has a similar catalog on its intranet page (<http://pwdnet1/>), which allows users to easily search for any good in the Department's inventory. The intranet page is interfaced in real time with the Department's Maximo system. To promote communication between City departments and increase the ease with which specific items can be found, an on-line searchable database is a preferred tool.
- Inventory organized by location: The PWD has set up Maximo to identify parts by location. The Department can use the software to find out what parts should be used to maintain inventory in specific locations that it maintains. Once Public Property performs an inventory of all its properties, such a system would allow for efficient maintenance of the City's properties.

Appendix A:

Document of Energy Studies

Appendix B:

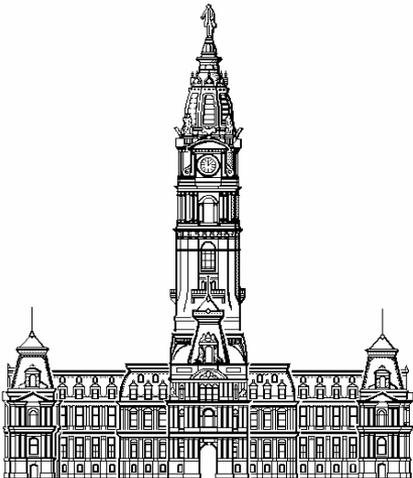
City Hall Limited Lighting Survey

Appendix C:

City Hall Lighting Detail

Department of Public Property

Daniel Bausch
Vivek Jayaraman
Matthew Klayman
Abin Mathai
Schuyler Osterhout
Max Wheeling



Department of Public Property

I. PERSONNEL



MAIN ISSUE:

- HIRING SKILLED TRADES WORKERS
- Why?
 1. Application Process
 2. Departmental Recruiting
 3. The City Residency Requirement



RECOMMENDATIONS: APPLICATION PROCESS

1. Allow applicants to apply online
2. Eliminate application fees
3. The Office Of Human Resources should work in conjunction with the Department of Public Property at recruiting venues
4. The staff of the Office of Human Resources should be increased to accelerate the application process



RECOMMENDATIONS: DEPARTMENTAL RECRUITING

- A professional recruiter or recruiting agency should be hired to target needed positions
- Job opportunities for hard-to-fill positions should be published within appropriate trade magazines and publications



RECOMMENDATIONS: CITY RESIDENCY REQ.

- The residency requirement should be modified so that residents of surrounding counties in the Greater Philadelphia region can be employed {e.g. Bucks, Montgomery, and Delaware Counties }



Department of Public Property

II. SUSTAINABILITY



ENERGY EFFICIENT LIGHTING

- Install newer, more efficient lighting
- Initial Upgrade Cost: \$34,761.14
- Yearly Savings: \$14,336.11



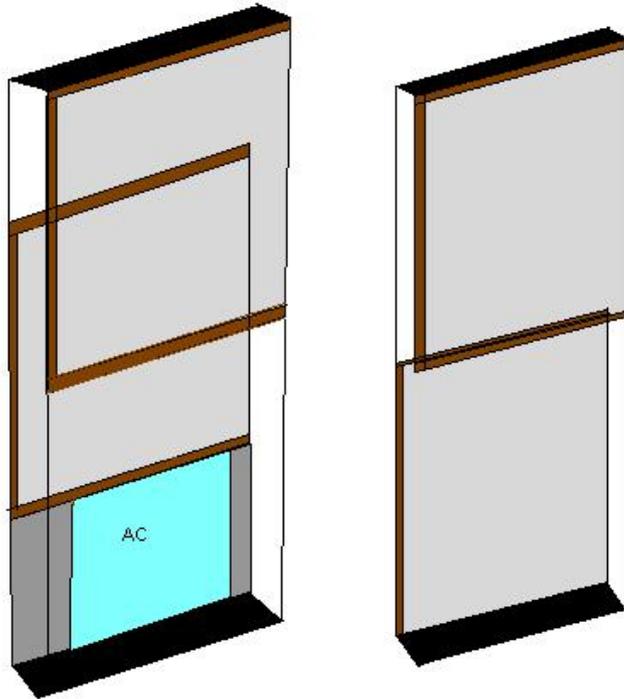
[OCCUPANCY SENSORS]

- Replace light switches in offices with infrared occupancy sensors
- Initial Cost: \$30,820.95
- Yearly Savings: \$14,524.58

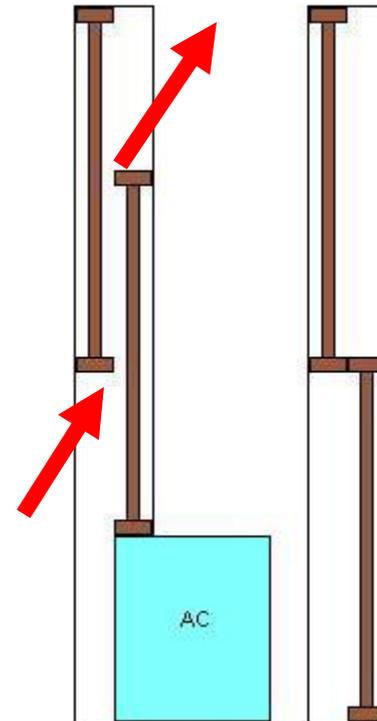


SEALING WINDOWS

Windows-Angled view



Windows-Side View



REDUCING WASTED ENERGY COSTS

- Set thermostats at 75 instead of 70 in summer
- Put computer into hibernate mode
- Yearly Savings: \$23,992.41



Department of Public Property

III. IMPROVING THE EFFICIENCY OF MATERIALS MANAGEMENT



MAIN ISSUES:

- Providing maintenance that is more:
 - Time efficient
 - Cost efficient
- How?
 - Purchasing
 - Inventory
 - Software



RECOMMENDATIONS PURCHASING

- Public Property should continue its efforts with the newly formed Networking Committee to increase communication between departments with regard to inventory and procurement.



RECOMMENDATIONS INVENTORY

- Public Property should have a full survey of its properties readily available for its own reference and for use by other related city departments.
 - Implement a system of temporary duty assignments in order to complete a thorough inventory



RECOMMENDATIONS SOFTWARE

- Public Property should develop a searchable on-line inventory database using Maximo.
- Public Property should organize its inventory database by location.



RECOMMENDATIONS SOFTWARE: HOUSTON

E-Catalog
CITY OF HOUSTON
STRATEGIC PURCHASING DIVISION

Other Links:

A Message from the City Purchasing Agent

 “ Welcome to the Strategic Purchasing Division's online purchasing catalog. This catalog contains various categories of commodities, which have been competitively bid and awarded by the City. I encourage your business to review the catalog, identify potential opportunities, and participate in the competitive bid process. - **Calvin D. Wells** ”

Register to be a City Supplier | **Become MWD BE Certi**

City spending across the top 6 budget categories:

- Services (68%)
- Chemicals (9%)
- Grounds Maintenance (5%)
- Automotive Supplies (4%)
- Industrial Supplies (3%)
- Fleet Vehicles & Equi.. (3%)

Keyword Search 

Items

Quick List

- Suppliers
- Contracts

Spending by Category

 <p><u>Ammunition & Accessories</u></p> <p>This category consists of but not limited to handgun, rifle,...</p> <p>Allotted: \$1,663,723 (0.1%)</p> <p>Subcategories (1)</p>	 <p><u>Animal Feed & Supplies</u></p> <p>This category consists of dry animal feed and grooming</p> <p>Allotted: \$431,445 (0%)</p>	 <p><u>Au</u></p> <p>This not Allc</p> <p>Si</p>
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RECOMMENDATIONS SOFTWARE: PWD

The screenshot displays the Maximo software interface. At the top, the navigation bar includes 'Locations', 'Bulletins: (1)', 'Go To', 'Reports', 'Start Center', 'Profile', 'Sign Out', and 'Help'. Below this is a search bar with 'Find:' and a 'Select Action' dropdown. The main content area shows a 'Drilldown' window for the location 'ACCOUNTING'. The window has tabs for 'Locations' and 'Assets'. The 'Locations' tab is active, showing a tree view of the location hierarchy. The current location is 'ACCOUNTING', with a sub-location 'WATER ACCOUNTING' selected. The status is 'OPERATING' and the site is 'PWD'. Below the location information, there are buttons for 'Show All Systems', 'Show Path to Top', and 'View Work Orders & PMs'. A list of systems is displayed, including 'CUSTSVC: CUSTOMER SERVICE', 'FM-FACILITYMGMT: FACILITY MANAGEMENT', 'FM-29COMPLEX: 29TH & CAMBRIA COMPLEX, ALL AREAS', 'FM-ARABLDG: ARA OFFICE ALL FLOORS', 'FM-BAXTER: BAXTER PLANT ALL FACILITIES', 'FM-BELMONT: BELMONT WATER TREATMENT ALL FACILITIES', 'FM-BLS: BLS ALL FACILITIES', 'FM-BRC: BIOSOLIDS RECYCLING CENTER', 'FM-COLLECTORSYSTEM: COLLECTORS SYSTEM HEADQUARTERS', 'FM-FLEETMGMT: FLEET MANAGEMENT FACILITIES', and 'FM-MATMGMT: MATERIALS MANAGEMENT LOCATIONS'. The text 'No assets found at this location.' is also visible. A 'Cancel' button is located at the bottom right of the window.

Locations

Bulletins: (1) Go To Reports Start Center Profile Sign Out Help

Find: Select Action

List Drilldown

Select to show children. Select to hide children. Select to return location / asset.

Locations Assets

Location ACCOUNTING WATER ACCOUNTING Status OPERATING Site PWD

Asset in Location No assets found at this location.

System PWD

Show All Systems

Show Path to Top

View Work Orders & PMs

- + CUSTSVC: CUSTOMER SERVICE
- FM-FACILITYMGMT: FACILITY MANAGEMENT
 - + FM-29COMPLEX: 29TH & CAMBRIA COMPLEX, ALL AREAS
 - FM-ARABLDG: ARA OFFICE ALL FLOORS
 - + FM-BAXTER: BAXTER PLANT ALL FACILITIES
 - + FM-BELMONT: BELMONT WATER TREATMENT ALL FACILITIES
 - + FM-BLS: BLS ALL FACILITIES
 - + FM-BRC: BIOSOLIDS RECYCLING CENTER
 - FM-COLLECTORSYSTEM: COLLECTORS SYSTEM HEADQUARTERS
 - + FM-FLEETMGMT: FLEET MANAGEMENT FACILITIES
 - + FM-MATMGMT: MATERIALS MANAGEMENT LOCATIONS

Cancel

Department of Public Property

Questions?

We thank you for your time and consideration.

