



## **Performance Audit**

### **Implementation of FuelMaster Fuel System Office of Management and Budget**

Report by the  
Office of City Controller

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**AUDITEE RESPONSE**



MICHAEL E. LAMB

CITY CONTROLLER

First Floor City-County Building • 414 Grant Street • Pittsburgh, Pennsylvania 15219

September 27, 2017

To the Honorable: Mayor William Peduto and  
Members of Pittsburgh City Council:

The Office of City Controller is pleased to present this performance audit of Implementation of *FuelMaster Fuel System, Office of Management and Budget* conducted pursuant to the Controller's powers under Section 404(c) of the Pittsburgh Home Rule Charter.

## EXECUTIVE SUMMARY

FuelMaster Fuel System was purchased by the Office of Management and Budget (OMB) from Petroleum Technical Services (PTS) an organization based in Prospect, PA that offers services related to the installation and maintenance of fueling systems. The City of Pittsburgh signed a contract with (PTS) in September 2013 with the intent of modernizing the fueling systems of the City's vehicle fleet, its fueling facilities, and improve the security of fueling sites. The contract's term of agreement was for 36 months from the effective date with an option to extend the contract for an additional 2 years. This audit focuses on the economy, efficiency and effectiveness of purchasing the FuelMaster Fuel System and the handling of problems during its implementation.

## Findings and Recommendations

### AIM Unit Issues

The entire City vehicle fleet began to have AIM units installed in June of 2014. Shortly after, police vehicles began to experience battery drainage issues, which were eventually discovered to be related to the AIM units being installed. The City's police vehicles operate with a large number of electronic equipment such as a laptop, dash cam, printer, and weapon rack, all of which draw from the battery. These electronic devices utilize enough power to push the vehicle's battery over capacity, draining the battery. When police officers attempted to start the vehicle, the battery was dead.

**Finding:** Initial implementation of the Type A AIM2 unit drained the batteries of police vehicles. Fire and ambulance vehicles did not have this problem because these vehicles are plugged in overnight and have more than one battery for use in the vehicle.

**Finding:** The PTS contract stated that if equipment installed by PTS was faulty, PTS would absorb costs associated with repairs or replacements. But because the product was working as intended, and the vehicles' malfunction was the result of an excess of equipment for their batteries to handle, this hourly rate was picked up by the City.

**Finding:** The City paid \$23,017.73 to PTS in 2015 for AIM repairs, installations, and removals from retired vehicles. Invoices submitted to the City included all the number of hours worked on all fuel pump issues, so it was not possible to calculate how much was spent solely on AIM repairs.

**Finding:** The City paid PTS to correct the FuelMaster module from draining the batteries in police vehicles by switching the AIM unit from digital to analog. However, this did not allow the accumulation of metadata as intended.

#### Common Problem

These added costs could have been avoided had a pilot program been implemented to test the product's effects. The PTS Project Manager stated that this was among her recommendations, but that the Department of Finance's former Fleet Contract Manager insisted that they be installed on the entire fleet without a test program. This is mirrored by conversations the auditors had with the current Fleet Contract Administrator and a police officer, both of whom expressed frustrations with the fact that there was no pilot testing done.

**Finding:** There was not an adequate pilot program to test the reliability of the new FMU.

**Recommendation:** When implementing new equipment on a large scale, a pilot program should be used to test the system on a variety of vehicles before wide-scale implementation. This should occur in all future endeavors.

#### Brilliant Yard Connectivity Issues

Connecting the Brilliant Yard to the data system has remained a persistent problem since the initial implementation. The Brilliant Yard site's layout, in addition to very old pumping equipment, required their own virtual private network (VPN) provided through Comcast rather than Verizon Fios as the rest of the stations use. The need for this was not known until after the vendor was picked and the contract was signed, leading to disputes over which party was responsible for paying the bill. As a result of these technical problems, the line goes down often, cutting off the flow of data until the line can be fixed.

**Finding:** The Brilliant Yard station continues to experience problems as a result of its layout and old equipment.

**Finding:** The Brilliant Yard station is used primarily for fueling PWSA vehicles.

**Recommendation:** The administration, in conjunction with PWSA, needs to bring the Brilliant Yard station onto the same system as the rest of the stations as soon as possible.

#### City Garage Fueling Station Canopy

PTS agreed, per the contract, to remove, dispose, and replace the existing canopy structure at the City Garage. This overhead canopy protects the fueling station and employees from rain and snow.

The partially dismantled canopy has remained in place. Employees had complained that rain leaks through the holes that were drilled, presenting a possible hazard to employees and equipment. The current Fleet Contract Manager worked with Public Works Facilities Maintenance Division to have the holes patched. Both FVS and PTS managers discovered that there are possible plans to move the site and sell the property as part of an ongoing effort to develop the City's waterfronts. Neither FVS nor PTS were made aware of such plans, and a new site for the City Garage has not been found as of July 2017.

**Finding:** Plans to sell the garage and fueling station property have not come to fruition and the uninstalled new canopy remains in a warehouse. The decision to halt the canopy project was not well thought out.

**Finding:** As a result of the decision to cancel the replacement of the canopy at the Department of Finance's Main Vehicle Fueling and Maintenance Station, the City incurred a **net loss of \$31,060.00**.

**Recommendation:** The administration should conduct a practical cost analysis before cancelling the terms of a signed contract. Evidence to change the terms of a contract should be credible and concrete before the City unilaterally cancels the project.

Before the new canopy was to be installed the contractor made holes in the old canopy roof so wires could be inserted for its removal. When the installation of the new canopy was cancelled, the City had to patch the old canopy so the rain would not soak employees.

**Finding:** The City had to absorb the cost of patching the old canopy. This cost is unknown.

**Finding:** Currently, there are no known immediate plans to sell the City Garage property or repair the canopy, though the City is negotiating several options.

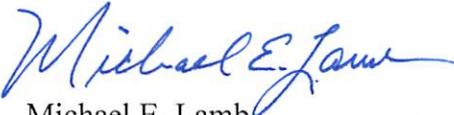
#### Communication Problems

A point of agreement between FVS, PTS, and I&P was that communication throughout the project was poor and led to misunderstandings about which parties were responsible for certain tasks. I&P expressed regret that there was not more clarity regarding the technical issues facing the Brilliant Yard and the division of responsibilities overall.

**Finding:** The lack of communication between FVS, PTS, and I&P lead to many of the problems associated with the entire new fuel system project.

**Recommendation:** On large-scale projects involving multiple City departments, all concerned parties should be consulted, with expectations and responsibilities clearly delegated. All departments should sign off on a project to acknowledge that they understand their individual responsibilities.

Sincerely,

A handwritten signature in blue ink that reads "Michael E. Lamb". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Michael E. Lamb  
City Controller

## **INTRODUCTION**

This performance audit of the FuelMaster Fuel System purchased by the Office of Management and Budget (OMB) from Petroleum Technical Services (PTS) was conducted pursuant to Section 404(c) of the Pittsburgh Home Rule Charter. The FuelMaster system is used throughout the City for dispensing and recording fuel consumption. This is the first audit of the FuelMaster Fuel System and the PTS contract with OMB conducted by the City Controller's Office. This audit focuses on the economy, efficiency, and effectiveness of purchasing the FuelMaster Fuel System and the handling of problems during its implementation.

The contract and project in question spans two administrations. The current Fleet and Asset Manager took over fleet operations on May 1, 2015.

## **OVERVIEW**

### **First Vehicle Services**

In May 2016 the Controller's Office released a performance audit of First Vehicle Services (FVS). FVS provides fleet vehicle maintenance services for the City of Pittsburgh and the Pittsburgh Water and Sewer Authority (PWSA) and has done so since May 2005. FVS rents the buildings that were previously used as the City garage worksite for one dollar (\$1) a year. The buildings are located along the Allegheny River waterfront in the Strip District.

During the course of the FVS audit, two problems were discussed when the auditors were conducting interviews and attending user meetings at the garage. First, the physical condition of the fueling station located at the main facility was in poor condition and was deteriorating. Second, police vehicles were experiencing fueling and battery drain issues since the FuelMaster Fuel System was installed. The FVS audit prompted a follow-up audit of the FuelMaster Fuel System purchased from Petroleum Technical Services (PTS).

### **Contract Details**

Petroleum Technical Services is an organization based in Prospect, PA, and offers services related to the installation and maintenance of fueling systems. The City of Pittsburgh signed a contract with Petroleum Technical Services (PTS) in September 2013 with the intent of modernizing the fueling systems of the City's vehicle fleet as well as its fueling facilities. The contract's term of agreement was for 36 months from the effective date with an option to extend the contract for an additional 2 years.

## Work and Service Provided by PTS

The contract states that Petroleum Technical Services “would furnish all supervision, labor, parts, supplies, and subcontract work needed to install the following”:

1. Syn-Tech’s FuelMaster 3500 Plus Automated Fuel System at the City’s five fuel sites and one PWSA facility.
2. 1,200 Automated Information Module (AIM2) units on selected City fleet units.
3. Security camera systems on five City fuel sites and one PWSA facility.
4. Fuel station facility equipment and infrastructure upgrades at the sites consistent with “the scope of work, performance standards and service specifications.”

The contract notes that any extra services and costs “required for satisfactory completion of the work or any phase thereof” to be incurred by PTS with reimbursement “only upon approval of the City Controller pursuant to proper legislative action by the City.”

## Fueling Station Locations

The fuel station facilities that are listed in the contract are listed below in Table 1.

**TABLE 1**  
**CITY OF PITTSBURGH**  
**FUEL STATION FACILITIES**

NAME	ADDRESS
Department of Finance’s City Vehicle Maintenance & Fuel Facility, City Garage	29 ½ St & AVRR, Pittsburgh, PA 15201
Department of Public Work’s First (1 <sup>st</sup> ) Road Division	300 Kilbuck Road, Pittsburgh, PA 15214
Department of Public Work’s Fourth (4 <sup>th</sup> ) Road Division	414 Bausman Street, Pittsburgh, PA 15210
Department of Public Work’s Fifth (5 <sup>th</sup> ) Road Division	1330 Hassler Street, Pittsburgh, PA 15220
Department of Public Work’s Second (2 <sup>nd</sup> ) Road Division	6814 Hamilton Ave, Pittsburgh, PA 15206
Pittsburgh Water and Sewer Authority (PWSA) Brilliant Yard	779 Lockway East, Pittsburgh, PA 15206

Source: PTS Contract

## Fuel Station Upgrades

The services provided by PTS are broken down by different sections in the contract labeled B-E.

In Section B of the contract, the 6 fueling sites that will receive the Syn-Tech's FuelMaster 3500 Plus Automated Fuel System are as listed in Table 1.

The contract stipulates the installation of the new FuelMaster System FMU 3500 Plus compatible with the AIM2 module furnished and installed as well as new lower doors for all existing pumps. PTS also agreed to remove, dispose, and replace the existing canopy structure at the City Garage with a city-approved system.

Section B of the contract also notes the installation by PTS of AIM2 units in 1,200 different City vehicles. PTS was contracted to install AIM2 units in the following vehicle types: 330 Police, 85 Emergency Medical Services, 90 Fire, 400 Public Works, 45 PWSA, 100 Environmental Service, and 50 Bureau of Building Inspection (Now known as the Permits, Licenses, and Inspection (PLI)) vehicles. The number of City vehicles in service often changes because vehicles are continually being added or removed from service.

Section C of the contract required the following: new dispenser systems as directed, all new product piping, conduit, fittings, electric wire, and related hardware at all 6 locations. PTS would furnish, install, program, and train for the accompanying Intel based software with a 3 year on-site warranty for hardware. All 6 stations received a FuelMaster Annual Maintenance Agreement with a three-year option.

Section D required 2 Axis Q1755 security cameras and related equipment at all 6 locations except for the City Garage, which received 4 cameras in total.

Finally, Section E provided for the appropriate hardware to operate the security camera system at the Innovation and Performance (I&P) Department with a 3 year on-site warranty. At the time the contract was signed, I&P was known as the Computer Information Systems (CIS) Department. All 6 station locations would receive a Safeden Annual Maintenance Agreement three-year option.

## **OBJECTIVES**

1. To assess the implementation of the FuelMaster System, AIM2 units, security camera system, and other infrastructure upgrades.
2. To analyze costs related to implementation.
3. To review the contract terms.
4. To analyze the costs related to construction of the fuel canopy at the City Garage.
5. To make recommendations for improvement.

## **SCOPE**

The scope of this performance audit entails the 3 year contract between the City of Pittsburgh and Petroleum Technical Services as signed in September 2013.

## **METHODOLOGY**

The auditors conducted interviews with staff from First Vehicle Services, including the General Manager and Fleet Analyst.

The auditors interviewed members of the Office of Management and Budget (OMB), including the current Fleet Contract Manager, the Fleet Contract Administrator, and Assistant Director of Capital and Asset Management.

The auditors interviewed employees of the Pittsburgh Department of Innovation & Performance, including the Deputy Director of Operations.

The auditors traveled to the Petroleum Technical Services office and interviewed the company sales consultant and partial owner.

The auditors reviewed the September 2013 contract between PTS and the City, as well as invoices and payments made from the City to PTS. The contract and invoices were obtained and reviewed from the City of Pittsburgh's OnBase system.

Email exchanges between PTS, City staff, and project subcontractors were reviewed. The auditors received and examined documentation detailing vehicle maintenance from PTS. Video footage and resolutions from City Council meetings were also examined.

## FINDINGS AND RECOMMENDATIONS

Part of the motivation to implement a more technologically advanced fuel tracking system was because of rising fuel costs. Concerns about the theft of gasoline and security were also issues. The City wanted to improve its fuel systems in order to keep better track of fuel usage for fleet vehicles as well as improve the security of fueling sites.

### Contract Funding

City Council and the Mayor originally approved the FuelMaster Fuel System purchased from Petroleum Technical Services (PTS) contract on December 14, 2012. The total project was not to exceed \$500,000 and was to be funded from the 2009-2012 capital budget accounts. The contract was later amended and approved on July 2, 2013, allocating an additional \$300,000 from the 2013 capital budget account bringing the total amount of the contracts not to exceed amount to \$800,000. The balance reconciled after services were completed resulted in the total amount spent of \$791,472.32. A breakdown of the amount funded by each capital budget year is found in Table 2. The amount of \$5,228.50 is missing from the actual cost in Table 2 and is explained on page 13.

**TABLE 2**

<b>PETROLEUM TECHNICAL SERVICES CONTRACT FUNDING by YEAR</b>		
<b>Capital Budget</b>	<b>Estimated Cost</b>	<b>Actual Cost</b>
2009	\$300,000	\$386,243.82
2010	\$100,000	
2012	\$100,000	\$100,000
2013	\$300,000	\$300,000
<b>TOTAL</b>	<b>\$800,000</b>	<b>\$786,243.82</b>

Source: Contract and JD Edwards

### Previous Fueling System

The fueling system used by the City before converting to the FuelMaster system was called M4. In the years before the new contract was signed, M4 had many issues, including replacing and/or reprogramming the fobs that gave users access to fuel their vehicles. A key fob is a small security hardware device with built-in authentication used to control and secure access to network services and data. Replacing and reprogramming these fobs became a full time job for City staff.

Additionally, the system would not accept odometer readings being entered, and support from M4 did not exist due to the expiration of its maintenance agreement with the City. As a result, mileage was never correct making it impossible to determine a vehicles overall cost efficiency. This prompted officials to seek a new contract for a new fueling system.  
Syn-Tech's FuelMaster 3500 Plus Automated Fuel System

The FuelMaster's 3500 Plus Automated Fuel System is a fuel management unit (FMU), otherwise known as the fueling station. The station is able to identify vehicles that are outfitted with an AIM unit through its radio frequency identification tag (RFID). It then wirelessly collects information related to the vehicle's efficiency and fuel consumption which eliminates the need for driver-entered data. The system is able to calculate the fuel economy of the vehicles based on odometer readings and fuel consumption. Figure 1 below shows a photo of the FuelMaster's 3500 unit.

**FIGURE 1: FuelMaster 3500 Unit**



Source: FuelMaster Website

#### AIM2 Units

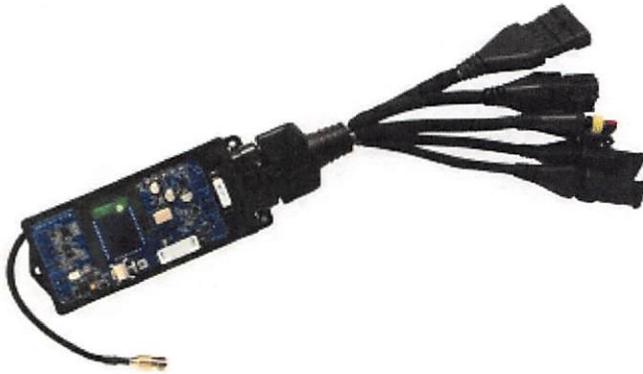
The Automated Information Module (AIM) unit is a FuelMaster product outfitted to private and public sector fleet vehicles that has a number of features. It provides security because the unit is directly connected to the vehicle's on-board diagnostics (OBD) port, where it collects information relating to fuel efficiency and fuel consumption during use. During the fueling process, the fuel management unit (FMU) identifies the AIM via its radio frequency identification (RFID) tag, tracking how much fuel is dispensed to a specific vehicle and preventing fuel from being taken for personal use. There is a four step fueling process for the unit:

1. The fuel nozzle is inserted into the vehicle.
2. The AIM unit is read by the FRID tag which is mounted in the fuel nozzle.
3. Vehicle and OBD data are transmitted to the FMU via the AIM unit.
4. The FMU verifies the received data and activates the fuel pump. Transmission ends when the fuel nozzle is removed from the vehicle or the pre-designated amount of fuel was dispensed.

The unit also helps to reduce human error. Because fuel consumption information is updated wirelessly, it eliminates the need for that information to be entered on a keypad manually. The AIM unit also provides metadata and regular reports on a wide range of information on the City's vehicle fleet, including fuel efficiency, also via radio frequency. This information should inform future administrative and policy decisions.

The AIM2 unit has the ability to capture and report error codes on the vehicle via the OBD port. City fleet vehicles currently follow a designated preventative maintenance (PM) schedule based on the type and use of the vehicle. PM's are designed to identify and correct vehicle issues before they become major problems. Error code reporting would be able to address vehicle issues before the designated PM's which could reduce the costs associated with fixing bigger issues.

**FIGURE 2: AIM2 Unit**



Source: FuelMaster Website

### AIM Unit Issues

The entire City vehicle fleet began to have AIM units installed in June of 2014. Shortly after, police vehicles began to experience battery drainage issues, which were eventually discovered to be related to the AIM units being installed. The initial version of the AIM module, Type A, continued drawing power for roughly ten minutes after the ignition was turned off. The City's police vehicles operate with a large number of electronic equipment such as a laptop, dash cam, printer, and weapon rack, all of which draw from the battery. These electronic devices utilize enough power to push the vehicle's battery over capacity, draining the battery. When police officers attempted to start the vehicle, the battery was dead and a third party contractor had to be called to have the battery jumped.

**Finding:** Initial implementation of the Type A AIM2 unit drained the batteries of police vehicles. Fire and ambulance vehicles did not have this problem because these vehicles are plugged in overnight and have more than one battery for use in the vehicle.

To correct this problem, the digital AIM unit could be replaced with an analog unit. In its analog mode, the module would provide fuel security only, and does not report any of the metadata. Beginning in September 2014, PTS technicians began to convert AIM modules on police vehicles with battery drainage issues to their analog mode at the cost of \$72 per hour. According to records from PTS, from September 2, 2014 to December 29, 2014, 52 AIM Units were either changed out or switched to analog.

**Finding:** The PTS contract stated that if equipment installed by PTS was faulty, PTS would absorb costs associated with repairs or replacements. But because the product was working as intended, and the vehicles' malfunction was the result of an excess of equipment for their batteries to handle, this hourly rate was picked up by the City.

**Finding:** The City paid \$23,017.73 to PTS in 2015 for AIM repairs, installations, and removals from retired vehicles. Invoices submitted to the City included all the number of hours worked on all fuel pump issues, so it was not possible to calculate how much was spent solely on AIM repairs.

**Finding:** The City paid PTS to correct the FuelMaster module from draining the batteries in police vehicles by switching the AIM unit from digital to analog. However, this did not allow the accumulation of metadata as intended.

## Module Repair

In January of 2016, FuelMaster released an updated Type F module which fixed the battery drainage issue. The Type F module contains an extra "wake up wire" which shuts off the AIM module fifteen minutes after the ignition is switched off. The delay allows for the utilization of the metadata component which stops the battery from draining.

The makers of FuelMaster notified their distributors, including PTS, of this problem and the Type F module solution. PTS, admitting that they missed the memo from FuelMaster for this update, provided labor for these conversions at no extra cost to the City. All police vehicles experiencing battery drainage issues relating to the AIM modules, began to receive the Type F module. Additionally, the older vehicles had been converted to analog. Vehicles manufactured prior to 1996 do not have the necessary ports to use the digital AIM units. Any money paid to PTS for these conversions came from the Fuel Budget.

## Common Problem

The auditors contacted other municipalities that were using FuelMaster to inquire whether they were experiencing any problems. The auditors found that these municipalities were experiencing similar issues. In talking to the Purchasing Agent for Cecil County, Maryland the auditors learned that they had made the decision to simply convert all of the modules to their analog mode to fix the problem. While PTS works with a variety of other clients, no others use the AIM module.

These added costs could have been avoided had a pilot program been implemented to test the product's effects. The PTS Project Manager stated that this was among her recommendations, but that the Department of Finance's former Fleet Contract Manager insisted that they be installed on the entire fleet without a test program. This is mirrored by conversations the auditors had with the current Fleet Contract Administrator and a police officer, both of whom expressed frustrations with the fact that there was no pilot testing done.

**Finding:** There was not an adequate pilot program to test the reliability of the new FMU.

**RECOMMENDATION NO. 1:**

When implementing new equipment on a large scale, a pilot program should be used to test the system on a variety of vehicles before wide-scale implementation. This should occur in all future endeavors.

**Public Safety Issues**

Apart from the additional cost of replacing the AIM units, the issues also slowed public safety response times. First, the battery drainage prevented police vehicles from using certain vehicles. Second, the vehicles had to be jumped at the Zones and then eventually brought to the City Garage for troubleshooting and repairs by a PTS technician.

To remedy this problem, the current Fleet Contract Administrator approached FVS with the idea to train its technicians to install and repair AIM modules. As a result, Fuelmaster was brought in to conduct an onsite certification training for seven FVS technicians in May of 2016. This eliminated the need for PTS technicians to troubleshoot and make repairs. Prior to this new process being implemented, PTS technicians would travel once a week to make repairs. FVS technicians traveled directly on-site to repair the downed vehicle, rather than requiring police vehicles to leave their designated police zone and arrive at the City Garage in the Strip District.

**Alternative Fueling Options**

Public Safety vehicles are assigned credit cards from Wright Express (WEX). The cards are to be used if they are unable to return to one of the City's fueling stations. While the M4 fueling station was in use, the WEX cards were utilized more frequently because of the fueling issues of the system.

Unmarked police cars do not use the AIM unit for fueling. The cars are assigned a fob or Fuelmaster fuel card which is used to activate the fueling system. The only information that is tracked for these transactions is the number of gallons that are dispensed.

Each station has one blank fueling card that can be used if there is an issue with the AIM unit. A designated onsite employee at the fueling station maintains control of the fueling card. The fueling card tracks the amount of fuel that is dispensed, but does not allocate the amount to a specific vehicle.

### Security Camera System

Each fueling facility is outfitted with two security cameras except for the City Garage which has four cameras. The system is activated when it senses movement. An onsite DVR stores the recorded video which then can be reviewed. The City Garage stores the video for 3-4 weeks until it is then recorded over. The other fueling stations are used much less frequently so the video is stored for longer than 4 weeks.

### Brilliant Yard Connectivity Issues

Connecting the Brilliant Yard to the data system has remained a persistent problem since the initial implementation. The Brilliant Yard site's layout, in addition to very old pumping equipment, required their own virtual private network (VPN) provided through Comcast rather than Verizon Fios as the rest of the stations use. The need for this was not known until after the vendor was picked and the contract was signed, leading to disputes over which party was responsible for paying the bill. As a result of these technical problems, the line goes down often, cutting off the flow of data until the line can be fixed.

**Finding:** The Brilliant Yard station continues to experience problems as a result of its layout and old equipment.

**Finding:** The Brilliant Yard station is used primarily for fueling PWSA vehicles.

### **RECOMMENDATION NO. 2:**

The administration, in conjunction with PWSA, needs to bring the Brilliant Yard station onto the same system as the rest of the stations as soon as possible.

### City Garage Fueling Station Canopy

PTS agreed, per the contract, to remove, dispose, and replace the existing canopy structure at the City Garage. This overhead canopy protects the fueling station and employees from rain and snow.

The project was scheduled to begin in December 2014. In the days leading up to the project, all preparations were made to demolish the old station's canopy roof. This process included drilling holes in the overhead canopy. On the day of the demolition, as a crane was

removing the canopy, the Fleet Contract Administrator received a call from the Assistant Director of Capital & Asset Management telling FVS and PTS to immediately cease the demolition and place the old canopy back onto the fueling station.

Since then, the partially dismantled canopy has remained in place. Employees had complained that rain leaks through the holes that were drilled, presenting a possible hazard to employees and equipment. The current Fleet Contract Manager worked with Public Works Facilities Maintenance Division to have the holes patched. Both FVS and PTS managers discovered that there are possible plans to move the site and sell the property as part of an ongoing effort to develop the City’s waterfronts. Neither FVS nor PTS were made aware of such plans, and a new site for the City Garage has not been found as of July 2017.

**Finding:** Plans to sell the garage and fueling station property have not come to fruition and the uninstalled new canopy remains in a warehouse. The decision to halt the canopy project was not well thought out.

The auditors discovered that the Office of Management and Budget (OMB) was responsible for making the phone call stopping the demolition. However, the decision was a collaborative one from within the administration. They also attested that while OMB knew the City was losing money for the associated costs of the aborted project, it was less than the amount that would have been paid for seeing the project through.

The total cost of the canopy project paid by the City was \$31,060.00. This includes demolition work paid to PTS, and also parts and equipment paid to Austin Mohawk & Company, the canopy manufacturer. While certain equipment could be restocked and funds recovered at no charge, other equipment, such as LED lights, could not. The difference of \$5,228.50 could be related to equipment returns. The auditors spoke with OMB and PTS to determine the difference but no clear answer was given on the discrepancy.

A breakdown of the costs incurred by the City for cancelling the project is shown in Table 3:

**TABLE 3**

<b>MAIN FUELING STATION CANOPY UNRECOVERABLE COSTS</b>	
<b>Item</b>	<b>Cost</b>
Demolition	\$8,360.00
Canopy	\$19,500.00
Building	\$3,200.00
<b>TOTAL COST</b>	<b>\$31,060.00</b>

Source: PTS

**Finding:** As a result of the decision to cancel the replacement of the canopy at the Department of Finance’s Main Vehicle Fueling and Maintenance Station, the City incurred a **net loss of \$31,060.00.**

**RECOMMENDATION NO. 3:**

The administration should conduct a practical cost analysis before cancelling the terms of a signed contract. Evidence to change the terms of a contract should be credible and concrete before the City unilaterally cancels the project.

Before the new canopy was to be installed the contractor made holes in the old canopy roof so wires could be inserted for its removal. When the installation of the new canopy was cancelled, the City had to patch the old canopy so the rain would not soak employees.

**Finding:** The City had to absorb the cost of patching the old canopy. This cost is unknown.

**Finding:** Currently, there are no known immediate plans to sell the City Garage property or repair the canopy, though the City is negotiating several options.

**FIGURES 3 - 6**  
**Photos of the Canopy at the Department of Finance's City Vehicle Maintenance & Fuel Facility, City Garage, 29 ½ St & AVRR**  
**As of September 20, 2016**



**Figure 3**



**Figure 4**



**Figure 5**



**Figure 6**

## Digital Dashboard

A digital dashboard has been created to monitor the data now being collected from the fleet vehicles equipped with the AIM modules. Despite the prolonged period of battery drainage issues, Syn-Tech's most recent AIM module appears to have solved the problem. The I&P Department is now receiving information on nearly the entire fleet. At the request of the current Fleet Contract Manager, a digital dashboard has been constructed to view and interact with that information.

The Dashboard runs on Premise and its server is on Microsoft SQL. The data is open source, making it available online to City employees through the City's network. It receives new data every hour, and data can be sorted by a broad range of criteria, including (but not limited to) fuel type, station, make/model, and department. The following figure is a copy of the digital dashboard that is available to the City's Contract Manager.

**FIGURE 7  
SAMPLE DASHBOARD**



Source: I&P

## Communication Problems

A point of agreement between FVS, PTS, and I&P was that communication throughout the project was poor and led to misunderstandings about which parties were responsible for certain tasks. For example, while FVS was involved with preliminary discussions for the fuel system, they were not involved in the fuel selection process, an area in which they could have been an asset.

Similarly, I&P expressed regret that there was not more clarity regarding the technical issues facing the Brilliant Yard and the division of responsibilities overall. And while PTS made a number of suggestions regarding alternatives to leaving the dismantled canopy in place, or implementing a pilot program before installing the AIM units, they were not utilized.

**Finding:** The lack of communication between FVS, PTS, and I&P lead to many of the problems associated with the entire new fuel system project.

### **RECOMMENDATION NO. 4:**

On large-scale projects involving multiple City departments, all concerned parties should be consulted, with expectations and responsibilities clearly delegated. All departments should sign off on a project to acknowledge that they understand their individual responsibilities.



# CITY OF PITTSBURGH

## *Office of Management and Budget*

*William Peduto, Mayor*

*Sam Ashbaugh, Chief Financial Officer*  
*Jennifer Presutti, Director*

September 19, 2017

Mr. Michael Lamb  
City Controller  
City of Pittsburgh  
Pittsburgh, PA 15219

Dear Controller Lamb:

We have received the performance audit of the FuelMaster Fuel System. The Office of Management and Budget has prepared a response to the audit findings and recommendations which is attached and should be incorporated into the official audit.

On behalf of the administration, I would like to highlight the following improvements:

- Improved fuel site security.
- FVS technicians are now FuelMaster certified to perform the installation, repairs and update the fueling system which increases performance, reporting and fleet availability and presents an overall cost savings.
- The automated fuel system has been integrated with FVS fleet management systems in order to implement the meter based PM program.

Thank you for working collaboratively on this effort. If you have any questions, please contact me or my staff.

Sincerely,



Jennifer Presutti  
Director

**RECOMMENDATION NO. 1:**

When implementing new equipment on a large scale, a pilot program should be used to test the system on a variety of vehicles before wide-scale implementation. This should occur in all future endeavors.

**Response No. 1:**

OMB agrees with this recommendation. After transitioning from the former Fleet Contract Manager to the new, this practice has taken place, specifically in replacing AIM modules on Police vehicles that were having issues with battery draw. During implementation of the Type F AIM module, testing took place of an initial 5 vehicles prior to installing the new module in all others.

**RECOMMENDATION NO. 2:**

The administration, in conjunction with PWSA, needs to bring the Brilliant Yard station onto the same system as the rest of the stations as soon as possible.

**Response No. 2:**

The connection to Brilliant Yard has been improved since the completion of this audit. OMB/I&P is now able to connect to this site to obtain data and troubleshoot issues.

**RECOMMENDATION NO. 3:**

The administration should conduct a practical cost analysis before cancelling the terms of a signed contract. Evidence to change the terms of a contract should be credible and concrete before the City unilaterally cancels the project.

**Response No. 3:**

The administration performed a practical cost analysis and the City saved \$20,000 for the associated work. A number of the products purchased by the City were able to be reused.

**RECOMMENDATION NO. 4:**

On large-scale projects involving multiple City departments, all concerned parties should be consulted, with expectations and responsibilities clearly delegated. All departments should sign off on a project to acknowledge that they understand their individual responsibilities.

**Response No. 4:**

OMB agrees with this recommendation and has a team in place that understands best practices with regard to project management and communication.

