

# Memorandum



**Date:** August 6, 2013

**To:** Honorable Chairwoman Rebeca Sosa  
and Members, Board of County Commissioners

**From:** Carlos A. Gimenez  
Mayor

**Subject:** Directive Assignment 130999 - Report on the Implementation and Evaluation of Security Devices for Copper Wire Theft Prevention

During the June 18, 2013 meeting of the Board of County Commissioners (BCC), the Public Works and Waste Management Department (PWWM) was directed to provide a report with a schedule reflecting when and where the specific devices for preventing copper wiring theft of street lighting systems would be installed, and the length of time for the testing period.

## Anti-theft Initiative

As referenced in the "Report on the Feasibility of Implementing Security Devices for Copper Wire and Scrap Metal Theft Prevention" presented to the BCC on June 18, 2013 (Agenda item 2B1), PWWM implemented a pilot test in order to determine the efficacy of an anti-theft device produced by Horsepower Electric, Inc. (HPE), one of Miami-Dade County's (County) current street light maintenance contractors. The pilot test originally contemplated the installation of approximately 400 anti-theft devices at an estimated cost of \$90,000.00, along several of the corridors most impacted by acts of vandalism. This work would be paid from the contingency funds in the County's street light maintenance contract with HPE. The estimated 400 devices were based on the number of lights per corridor and assumed two (2) devices per pullbox. The selected corridors were as follows:

1. NW 7 Avenue from NW 79 Street to 42 Street (107 Street lights)
2. NW 46 Street from NW 6 Court to NW 38 Avenue (68 Street lights)
3. NW 54 Street from Federal Highway to NW 6 Avenue (33 Street lights)

Once work began on the NW 7 Avenue corridor, HPE and PWWM staff determined it was necessary to make repairs to the existing system (e.g., wiring, pullboxes), and to include additional anti-theft devices at intermediate pullboxes (two (2) to four (4) devices per pullbox). This resulted in an estimated increase for the pilot study from \$90,000.00 to \$140,000.00.

The current status for each of the corridors is as follows:

### **1. NW 7 Avenue from NW 79 Street to 42 Street (107 Street Lights)**

This corridor was completed and accepted as of June 7, 2013. A total of 337 devices were installed, which exceeded the anticipated amount by 123 devices. The additional devices were required due to existing intermediate pullboxes, and to address a number of pullboxes which required three (3) or four (4) devices for connections to the opposite side of the roadway.

The costs for this corridor were:

• 337 anti-theft devices at \$225.00 each	\$ 75,825.00
• Replacement of ten (10) damaged wire spans	\$ 9,150.00
• Replacement of 19 damaged pull-boxes	\$ 12,350.00
<u>Total</u>	<u>\$ 97,325.00</u>

The 90 day evaluation period for this corridor ends on September 5, 2013. On June 27, 2013, HPE reported an incident of vandalism along this corridor where the copper wires were cut at three (3) pullboxes in a failed attempt to steal the wires. The system was restored the same day of the report by splicing the affected wires.

**2. NW 54 Street from Federal Highway to NW 6 Avenue (33 Street lights)**

Work within this corridor is complete. A total of 114 devices were installed, exceeding that initially anticipated by 48 devices on account of the number of intermediate pullboxes encountered. During the July 2, 2013 inspections, the Office of the Inspector General (OIG) accompanied PWWM Electricians during the inspection of the installations.

The costs for this corridor were:

• 114 anti-theft devices at \$ 225.00 each (installed)	\$ 25,650.00
• <u>Replacement of nine (9) damaged wire spans</u>	<u>\$ 8,235.00</u>
Total	\$ 33,885.00

HPE has completed all the needed corrections and PWWM inspected and accepted the installations on July 18, 2013. The 90 day evaluation period for this corridor will end on October 16, 2013.

**3. NW 46 Street from NW 6 Court to NW 38 Avenue (68 Street lights)**

This corridor has been removed from the pilot test. PWWM roadway lighting staff inspected this corridor and found that it contains 140 pullboxes, which would require 280 devices. The total number of devices would exceed that initially anticipated for the corridor by 144 devices. Furthermore, this corridor has a large number of damaged wires, which should be addressed prior to the installation of anti-theft devices. Therefore, the work required to install the devices along this corridor would exceed the available capacity of the existing street light maintenance contract with HPE.

Due to the existing intermediate pullboxes and the damage found during the work, the County has installed 451 anti-theft devices at an actual cost of \$131,210.00. As referenced above, PWWM anticipates completion of the evaluation of the pilot study in mid-October, 2013.

PWWM is actively working with the OIG to review these devices, as well as other available products. In addition to these devices and the use of aluminum wire, PWWM has been researching a number of alternatives that are being implemented throughout the United States and other Countries to overcome wire theft. While alternatives such as locking pullboxes and pullbox lids have already been explored in the County; the feasibility of other alternatives such as: direct burial of the cables (i.e., not within a conduit), burial of the pullboxes, solar powered lights, and intelligent lighting systems would also need to be further evaluated. This evaluation would include an understanding of implementation costs as well as long term operations and maintenance costs.

**Recent Thefts**

The County has experienced a more recent wave of vandalism. In March, 2013, 96 spans of copper wire were stolen from the lighting circuits along NE 2 Avenue, from NE 50 Terrace to NE 69 Street. These circuits were re-wired using a combination of aluminum wires and copper grounding wires. Within days of completing the first 20 spans, the copper grounding wire was once again stolen from

each span, while the aluminum wires were left in place. A similar incident occurred on the street lighting along Miami Gardens Drive from NW 38 Avenue to NW 38 Court, where five (5) poles were re-wired using aluminum wires and copper grounding wires. The copper grounding wire from each span was stolen and the aluminum wires left in place. Both systems have since been restored using all aluminum wires.

There has been an arrest of an individual found to have aluminum wire in his possession which matches that used in the County's street lighting systems. However, PWWM has not been able to identify where the wire came from, nor been able to associate the wire to a specific streetlight outage.

The following lighting circuits have been recently vandalized for the copper wire.

LOCATION		DATE OF NOTIFICATION	DATE OF RESTORATION	NUMBER OF COPPER SPANS MISSING
NE 2 AVE	NE 50 TERR - NE 69 ST	3/14/2013	6/4/2013	95
NW 7 AVE	NW 79 ST - NW 117 ST	6/4/2013	6/19/2013	2
NW 12 AVE	NW 71 ST - 81 ST	6/4/2013	6/11/2013	12
MCARTHUR CWSY	PALM/HIBISCUS - WATSON IS.	6/4/2013	7/3/2013	13
NW 79 STREET	I-95 - NW 22 AVE	6/6/2013	6/20/2013	15
Biscayne Blvd	NE 45 ST - NE 49 ST	6/21/2013	6/27/2013	5
Biscayne Blvd	NE 60 ST	7/16/2013	7/17/2013	2
Miami Gardens Dr	NW 38 Ave - NW 38 CT	6/17/2013	6/23/2013	5

In closing, the pilot tests for the HPE anti-theft devices will be concluded in October, 2013, at which time a conclusive determination of their effectiveness can be made. Furthermore, PWWM will continue to work with the OIG to research different methods being implemented to prevent wire theft, and evaluate their usefulness within the County. To date, the use of aluminum wires has proven to be effective. Finally, as part of the four (4) new Streetlight Maintenance Contracts currently being procured, PWWM has included a requirement that the contractor address repeated acts of vandalism by either installing aluminum wires or an approved anti-theft device.

- c: Honorable Harvey Ruvin, Clerk of the Board
- Robert A. Cuevas, Jr., County Attorney
- Alina T. Hudak, Deputy Mayor
- Kathleen Woods-Richardson, Director, Department of Public Works and Waste Management
- Christopher Agrippa, Division Chief, Clerk of the Board
- Patra Liu, Inspector General