

# Key Largo Wastewater Treatment District Board of Commissioners Meeting Agenda Item Summary

Meeting Date:  
February 20, 2018

Agenda Item Number: L-2

Agenda Item Type:  
Information / Presentation

Agenda Item Scope:  
Review / Discussion

Recommended Action:  
Discussion

Department:  
Engineering

Sponsor:  
Ed Castle

Subject:  
**Emergency Standby Generator for Administration Building**

Summary of Discussion:

The FY18 budget has funding for an emergency standby generator for the Administration Building. The Board discussed this potential capital project at the December 19, 2017 meeting and asked that additional information be brought back for further consideration.

Reviewed / Approved

Financial Impact

Attachments

Operations: \_\_\_\_\_  
Administration: \_\_\_\_\_  
Finance: \_\_\_\_\_  
District Counsel: \_\_\_\_\_  
District Clerk: \_\_\_\_\_  
Engineering: \_\_\_\_\_

\$ 112,648.00  
Expense  
Funding Source:  
  
Budgeted:  
Yes

1. Memo from WEC with additional information for consideration
2. Copy of memo from December 19, 2017 Board meeting.

Approved By:  Date: 2-12-18  
General Manager



## MEMORANDUM

**To:** KLWTD Board

**From:** Ed Castle, PE

**Date:** February 7, 2018

**Re:** Update on Emergency Standby Generator for Administration Building

The District’s FY18 budget included funding in the amount of \$112,648 for an emergency standby generator for the administration building. Information regarding this capital project was presented to the Board for discussion at the December 19, 2017 meeting. The Board asked that the item be brought back at a future meeting.

Comments/Concerns	Responses
It will be noisy and disturb neighbors (125 kVA diesel generator)	The generator will have level III sound attenuation. This would be about 70 dB, which is described to be as loud as living room TV or radio levels, or a vacuum cleaner. Sound tiles can also be mounted on the fence on the neighbors’ side.
Diesel fuel will go bad if not used.	Diesel fuel has a limited shelf life. The life can be extended to in excess of 1 year with preservatives. But the fuel will need to be used or replaced generally once per year. Fuel tank would be sized for 72 hours at 100% load, approximately 500 gallons. At current cost for off-road diesel, this is approximately \$1,300.
Maintenance Costs	Based on historical records for maintenance of the generators at the vacuum stations, the annual O&M will cost about \$400.
Funding Sources	The capital cost was included in the FY 18 budget, so it can be paid from rates. We also included the capital cost on the Stewardship funding list and the FEMA mitigation list.
Can AC on emergency power be provided for just the server room?	The server room currently has a mini-split AC system. This could be wired with a transfer switch and smaller generator. It is not known if the mini-split would cool sufficiently if the rest of the building were not under AC. This would also not protect the desktop PCs, copy machines, etc.

<p>For extended power outages, the administrative staff can work from the WWTP, which has emergency power.</p>	<p>This worked fairly well after Irma. However, the full administrative functions were not implemented, and power was only out for 4 days at the Admin Bldg. For extended outages, the impact may be greater. And public access to the WWTP is restricted, which may discourage District customers from meeting with staff in person. But Irma was the first instance of an interruption of more than a few hours since the District was formed.</p>
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An emergency standby generator for the Administrative Building is not of critical importance to keeping wastewater flowing. With an extended loss of power, the administrative functions of the District may be limited, and there is the potential for damage to electronic equipment due to humidity and heat. The Board can determine if the capital expense of a standby generator is justified by the advantages that it offers.

The memo that was presented to the Board at the December 19, 2017 meeting is attached for reference.



## MEMORANDUM

**To:** KLWTD Board  
**From:** Ed Castle, PE  
**Date:** December 13, 2017  
**Re:** Emergency Standby Generator for Administration Building

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The FY 18 budget includes funds for the installation of an emergency standby generator at the administration building. Currently, the building has no provisions for emergency power.

The proposed scope of work for this capital improvement includes modifications to the incoming electrical meters and installation of a 125 kW generator with fuel tank, transfer switch and sound-attenuating 180-MPH rated enclosure. The generator would be mounted on a concrete foundation at least 1 foot above the 100-year flood elevation.

The generator would start automatically whenever a power outage occurs. The automatic transfer switch would disconnect the building from utility power and connect it to the generator. When utility power is restored, it would automatically switch back to utility power. There would also be a manual over-ride so that the generator could be used to provide power even when utility power is available.

There are several benefits to having the administration building served by an emergency standby generator. These include:

- The generator provides power when utility power fails, allowing the office to remain open and the staff to continue working.
- The generator would ensure that air conditioning and critical control of humidity are available for prolonged power outages.
- The generator could be run after power outages to avoid the transient surges that can occur as power lines are repaired after a storm event, providing protection of the District's electrical equipment.

While it may seem that having an emergency standby generator is largely for convenience, climate control is very important if there is an extended power outage. The Weiler Engineering office at 6805 Overseas Highway was without power for over two weeks following Hurricane Irma. During that time, the office was warm and the

humidity was high. When power was restored, it seemed that everything was working properly. However, during the following month, we experienced numerous failures of electronic equipment. Two desktop PC failed, our server failed and our wide format plotter failed. This was caused by exposure of the sensitive electronics to warm, humid conditions. Although we had backups of all data on the PCs and the server, the failures caused a disruption of work along with the expense of replacing the equipment. We have also been without a plotter for two months due to the lead time for replacement.

It should be noted that when the District office was without power, most of the functions were moved to the WWTP where power was available. The District was able to function under the emergency conditions until power was restored to the administration building.