ATTACHMENT "D"

TVA BUSINESS CASE FOR ENERGY SAVINGS

BUSINESS CASE

UPGRADES AT FORT PAYNE WASTEWATER TREATMENT PLANT PROPOSED ENERGY EFFICIENCY IMPROVEMENTS SRF LOAN AND GRANT INCLUDING TVA ENERGY EFFICIENCY PROGRAM

SITE LIGHTING

The existing site lighting is high pressure sodium, 1000 HPS Highbays. There is a total of 21 fixtures on the treatment plant site. The proposed project includes installed LED lighting in lieu of the high pressure sodium in order to realize an energy savings. The City had an energy efficiency study performed, and the following chart summarizes the existing and proposed system:

Electrical Cost:	\$ 0.10	per kW-hr		
	No. Fixtures	kW per Fixture	Hrs Operating Per Year	Energy Cost Per Year
Existing System: 1000 HPS Highbays	21	1.10	4,380	\$ 10,118
Proposed System: LED FLOOD FL560L4A	21	0.235	4,380	2,162
ENERGY SAVINGS:				7,956
PERCENT SAVINGS:				79%

The proposed lighting will realize an energy savings of 79% for the City compared to the existing lighting system. Refer to the attached study performed on behalf of the City.

The total existing wattage is $21 \times 1.1 \text{ kW} = 23.1 \text{ kW}$. The total proposed wattage is $21 \times 0.235 \text{ kW} = 4.935 \text{ kW}$. The total power savings is (23.1 - 4.935) / 2.31 = 79%.

MIS GLOBAL LLC

Multiple Systems Energy Estimator

MIS GLOBAL LLC 2304 AIRPORT RD FORT PAYNE, AL 35967

Calculate the energy costs associated with existing and proposed lighting systems and (optional) show environmental impact. Click on the first "Blue" cell and tab to the other input cells.

Existing Systems					Energy Rate (\$ p	0.10			
					Proposed System				
Existing Systems	Fixture count	Watts/Fi xture	Hr burn per year	Energy \$ per yr.	Proposed Systems	Fixture count	Watts/Fi xture	Hr burn per year	Energy \$ per yi
1000 HPS HIGHBAYS	21	1100	4380	\$10,118	LED FLOOD FL560L4A	21	235	4380	\$2,162
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Energy used per yr. (Existing System) \$10,118					Energy used per yr. (Proposed System) \$2,1				
Electrical Load (kilo-watts) (Existing System) 23.1					Electrical Load (kilo-watts) (Proposed System)				
Potential Energy Savings per year					\$7,956	kilo-Watt load reduction 18.2			
Estimated total cost for complete upgrade Cost of Waiting (Cost of postponing the Lighting Upgrade)						Simple Payback (based on energy savings alone)			
						ener	gy savings	s alone)	months
(Cost of	A STATE OF THE PARTY OF THE PAR	\$25 P. S.			\$663	ener or	gy savings	\$7,95	
(Cost of	A STATE OF THE PARTY OF THE PAR	the Lighti	ng Upgrade)		per month	or	gy savings		6
(Cost of	A STATE OF THE PARTY OF THE PAR	the Lightii E n	ng Upgrade) Vironme	ental Impac		or ade	gy savings	\$7,95	6
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Customer: WASTE WATER TREATMENT FORT PAYNE 9/15/15

Prepared by: TOOG SANTIAGO ELECTRICAL DIVISION MANAGER

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