

09/29/2023

City of Winter Park

Energy Audit Report Summary



Audit Overview

15 Lightyears and TLC Engineering Solutions were engaged by the City of Winter Park to provide ASHRAE Level II Energy Auditing services for twenty-four (24) facilities operated by the City. The goal of this effort was to identify potential areas for improvement with respect to the energy consumption and performance of each facility, including equipment repair, refurbishment, or replacement, as well as controls optimization and envelope improvement. The majority of these facilities are provided with electrical service via the City of Winter Park Utilities, with the remainder served by Duke Energy.

The facilities analyzed as part of the auditing process represented a wide variety of building types, including public safety, office, library, and transportation, among many others. These buildings were visited during the site observation phase of the project, and the audit team took note of information related to equipment age, condition, and operating parameters. Additionally, 15 Lightyears and TLC personnel evaluated the building envelope and insulation where possible to suggest actions to improve energy efficiency.

Following onsite investigation, the audit team was provided with two years of historical electricity use for each of the facilities surveyed. This data was used to benchmark the performance of each site against similar building types in the United States. During this time, the audit team also performed energy savings calculations for each potential energy conservation measure (ECM) identified during site observation, in order to evaluate the savings that could be provided to each property. In addition to the evaluation of ECMs, the team presented any facility improvement measures (FIMs) that could aid the functionality of the buildings but may not necessarily save a significant amount of energy. For example, aging HVAC systems serving 911 operations would benefit from replacement due to the critical nature of their service. However, the utilities savings associated with a new piece of equipment will likely not equal the cost of replacement within the lifetime of the replacement unit.

The findings of the audit team were summarized in a series of reports delivered to the City of Winter Park. This summary serves as a brief overview of the activities described in detail in those reports. Included below is a table detailing the ECMs analyzed, broken down by building. For detailed analysis of each measure, including FIMs, please refer to the building audit reports. Please note that the costs provided in the table used to determine payback periods are based on RSMMeans 2023 and engineering best practices. Final pricing will vary based on contractors' estimation and final equipment selections, as well as the specific utility rate structure for each facility.

ECM Summary Table

Energy Conservation Measure	Cost Category	Annual kWh or kGal Savings	Annual \$ Savings	Cost \$	Payback (years)
Azalea Lane Recreation Center					
HVAC Dx Unit Replacement	Moderate Cost	2,302	\$259	\$6,145	23.7
HVAC Controls Optimization	Low Cost	991	\$112	\$610	5.4
Interior Lighting Improvements	Low Cost	2,885	\$325	\$1,344	4.1
Azalea Lane Tennis Center					
Interior Lighting Improvements	Low Cost	2,696	\$380	\$1,008	2.7
Exterior Lighting Improvements	High Cost	273,312	\$38,537	\$112,721	2.9
HVAC Controls Optimization	Low Cost	1,029	\$145	\$885	6.1
Central Complex					
HVAC Controls Optimization	Low Cost	4,454	\$479	\$2,400	5.0
Plumbing Retrofits	Low Cost	--	\$77	\$36	0.5
Exterior Lighting Improvements	Moderate Cost	9,566	\$1,029	\$7,496	7.3
Interior Lighting Improvements	Low Cost	28,918	\$3,112	\$2,500	0.8
City Hall					
DX Retrofits	Medium Cost	4,802	\$494	\$7,160	14.5
HVAC Controls Optimization	Low Cost	1,232	\$127	\$1,200	9.4
Envelope Improvements	High Cost	1,257	\$129	\$21,049	163.2
Lighting Improvements	Medium Cost	11,281	\$1,160	\$7,358	6.3
Community Center					
Lighting Improvements	Medium Cost	48,671	\$5,154	\$5,760	1.1
Fire Station 62					
Lighting Improvements	Low Cost	30,257	\$3,449	\$2,808	0.8
HVAC Controls Optimization	Low Cost	816	\$93	\$1,200	12.9
Envelope Improvements	Medium Cost	1,037	\$118	\$12,522	106.1
Fire Station 64					
Plumbing Retrofit	Low Cost	2	\$19	\$90	4.7

Golf Course Pro Shop and Clubhouse						
HVAC Controls Optimization	Low Cost	768	\$88	\$1,200	13.6	
Plumbing Retrofits	Low Cost	3,285	\$33	\$2,124	64.4	
Lighting Improvements	Low Cost	8,277	\$944	\$1,080	1.1	
Exterior Lighting	Low Cost	273	\$31	\$745	24.0	
New Library						
AHU Controls Optimization	High Cost	39,400	\$3,900	\$25,000	6.4	
Exterior Lighting Controls	Low Cost	1380	\$137	\$7,500	54.7	
WPPD Firing Range						
HVAC Controls Optimization	Low Cost	2,444	\$466	\$1,840	3.9	
MAU and EF CV to VAV	High Cost	71,194	\$13,577	\$22,277	1.6	
Public Safety Building						
Chiller Optimization	No Cost	9,710	\$1,208	\$0	--	
AHU-4 CV to VAV	Medium Cost	4,703	\$475	\$7,200	15.2	
AHU Controls	Low Cost	22,733	\$2,298	\$5,990	2.6	
Controls Optimization	Low Cost	2,658	\$269	\$6,000	22.3	
Lighting Improvements	High Cost	128,019	\$12,943	\$62,400	4.8	
Swoope Plant Operations Building						
DX Unit Retrofits	Medium Cost	15,107	\$1,612	\$23,000	14.3	
Lighting Controls	Low Cost	2,741	\$292	\$532	1.8	
Plumbing Retrofits	Low Cost	546	\$55	\$18	0.3	
Train Station						
Lighting Improvements	Low Cost	6,349	\$715	\$618	0.9	
Ward Park						
HVAC Controls Optimization	Low Cost	1,879	\$396	\$2,700	6.8	
Exhaust Fan Controls	Low Cost	7,563	\$1,595	\$1,463	0.9	
Interior Lighting Improvement & Controls	Low Cost	31,235	\$6,587	\$2,392	0.4	
Exterior Lighting Improvements	High Cost	54,255	\$11,442	\$65,124	5.7	
Ward Park Ballfields						
Exterior Lighting Improvements	High Cost	206,100	\$46,208	\$248,202	5.4	
Ward Park Maintenance Building						
HVAC Controls Optimization	Low Cost	1,324	\$145	\$900	6.2	
Welcome Center / Chamber of Commerce						
Daylighting Controls	No Cost	8,575	\$1,100	\$193	0.2	
DX Unit Retrofits	High Cost	27,850	\$3,573	\$104,476	29.2	

Wellness Place					
Interior Lighting Improvements	No Cost	751	\$82	\$383	4.7
Interior Lighting Controls	Low Cost	237	\$26	\$1,323	50.9
Bongart Plant Lab					
Lighting Improvements	Low Cost	993	\$128	\$240	1.9
HVAC Controls Optimization	Low Cost	3,289	\$425	\$900	2.1
New Events Center					
AHU Controls	Low Cost	7,558	\$751	\$600	0.8
Building Controls	Low Cost	14,386	\$1,144	\$2,400	2.1
Exterior Lighting Controls	Low Cost	1,183	\$118	\$990	8.4
Farmer's Market and Museum					
Lighting Improvements	Low Cost	10,807	\$1,116	\$3,088	2.8
Weatherization	Low Cost	68,924	\$7,120	\$100,000	14.0
Wymore Plant					
DX Retrofit	Medium Cost	5,661	\$847	\$14,583	17.2
Lighting Improvements	Low Cost	1,497	\$224	\$240	1.1
Magnolia Plant Operations Building					
DX Retrofits	Medium Cost	7,179	\$923	\$20,000	21.7
HVAC Controls Optimization	Low Cost	1,829	\$235	\$900	3.8
Plumbing Retrofits	Low Cost	3	\$25	\$708	28.3
Lighting Improvements	Low Cost	1,027	\$132	\$131	1.0
Total	-	-	\$178,583	\$933,752	5.2