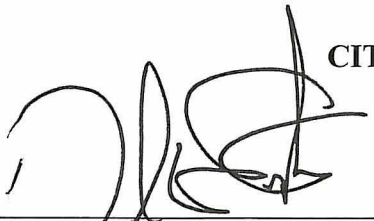


SALT LAKE CITY CORPORATION

DEPARTMENT OF PUBLIC SERVICES
DIRECTORS OFFICE

CITY COUNCIL TRANSMITTAL




David Everitt, Chief of Staff

Date Received: 11/30/09

Date Sent to Council: 12/1/09

TO: Salt Lake City Council
Carlton Christensen, Chair

DATE: November 30, 2009

FROM: Rick Graham 
Director of Public Services

SUBJECT: Energy Performance Contracting Project, Phase I - Briefing

STAFF CONTACT: Alden Breinholt
Director of Facilities Services
535-6163

Jim Cleland
Energy Utilities Coordinator
535-6631

DOCUMENT TYPE: Budget Amendment Request and Project Briefing

RECOMMENDATION: That the Council authorize the Administration to enter into a long term fixed-draw municipal lease agreement with installment payments from energy conservation and efficiency upgrades to City facilities.

BUDGET IMPACT: Total Phase I project costs are \$888,000, with \$833,000 to be financed, after Utility Company incentives, at a 5% interest rate for 15 years. Lease payments and energy savings are escalated at the projected rate of increasing energy costs. Escalating lease payments begin at \$59,959.83 in year one. Funds will be diverted from the utility budget at the escalated rate for debt services payments. The result reduces energy consumption in City facilities with a "Budget Neutral" financial impact.

BACKGROUND and DISCUSSION: A goal of the Mayor's Office both past and present is to eliminate waste and conserve energy. In February 2007 an initiative began to engage an Energy Service Company (ESCO) to perform energy audits that identify opportunities to conserve energy and perform energy conservation up-grades to City facilities using an Energy Performance Contract. Forty-seven (47) sites had Initial Site

REC
NOV 30 2009

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SCANNED TO: David Halby
SCANNED BY: Pauline
DATE: 11/30/09

Surveys and twenty-four (24) facilities were chosen for Investment Grade Energy Audits. Of the twenty-four (24) audited sites twelve (12) facilities were found to have enough energy savings opportunity to be included in Phase I project. Phase II and III projects are significantly larger and will occur in the future as a scope is finalized and the street lighting public process is completed.

Other project and funding options are considered including using the conventional City construction process and CIP funding through budgets or different bonding scenarios. An Energy Performance Contract was found to provide quality energy analysis, innovative engineering and design, rapid implementation and a budget neutral funding alternative. Upon project completion energy reductions are immediate and the savings begin. After the debt service is satisfied the energy savings remain a continued avoided cost. For additional figures and details, please see the attached documentation.

PUBLIC PROCESS: Not applicable

Attachment



Energy Performance Contracting Project

Executive Summary

INTRODUCTION:

This briefing has three main purposes. The first is to present the results of the Energy Audits. The second is to recommend implementation plans. The third is to identify funding sources and obtain Council Subcommittee support. The Administration is ready to move forward on the first of the three phases, once a funding option is selected and approved by the City Council.

2007 PROJECT CONCEPTION:

In February 2007 the initiative began to engage an Energy Service Company or ESCO to the City's facilities. The purpose of this project is to identify and implement energy conservation measures and pay for the improvements through energy savings. The major projects were identified as follows:

Airports – Enterprise Fund

Golf – Enterprise Fund

Public Services – General Fund (all facilities managed by the Facilities Division for multiple General Fund programs, including Fire and Police)

Public Utilities – Enterprise Fund

Transportation (street lighting) – General Fund

2008 AUDIT CONTRACTS

The Purchasing Division prepared and solicited an RFP for an ESCO to perform Investment Grade Energy Audits. Two ESCO contractors, Siemens and Schneider Electric, formerly TAC, were selected to perform audits. First, the ESCO's performed pre-audit surveys to determine which facilities should be audited. The Airports facilities were determined to have extensive renovation plans and non-conditioned spaces and were not good candidates for an EPC project. Airports' facilities were eliminated from the audit.



2009 – AUDITS:

In 2009 the audits were completed. Audit results found that Public Utilities administrative offices and shops would require too much construction, so implementation costs could not be recovered from energy savings in fifteen (15) years. Public Utilities paid the audit costs and ended their project. The Siemens invoiced the City for \$4,404.00.

AUDIT RESULTS:

The departments with energy conservation projects that would pay for themselves from energy savings are as follows:

Public Services Facilities

Phase I

- 12 - General Fund buildings
- Liberty Park lighting

FUTURE PROJECTS:

Other facilities are identified as potential projects, but require additional planning, public input, and more verification and research. These issues will likely be resolved by May 2010.

Phase II Part a

Transportation

- Street lighting is being considered as part of an overall transportation lighting plan. This project has a 11 year payback, but requires additional research, planning and public input.

Phase II Part b

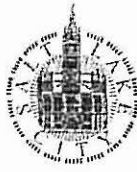
Public Safety Building:

- Requires definitive plans for future use.

Justice Courts Building

- Requires a \$150K up-front investment from energy incentives.

Phase II Part c



Central Plant

- Peak shaving measures utilizing electric co-generation during peak demand periods is identified as an energy saving measure. It is however, contingent on utilization of waste heat for additional electricity generation and building heating.

Golf Enterprise Fund

Phase III

- Irrigation Renovation Project

IMPLEMENTATION:

PHASE I

General Fund Operated Buildings

Staff Recommendations:

It is recommended that the City move forward with the twelve (12) Public Services General Fund operated buildings. The buildings are as follows:

Central Plant – Lighting and boiler upgrades

Compliance – Lighting

Facilities / Grey Glass – Lighting and mechanical upgrades

Fairmont Youth & Family – Boiler replacement

Impound - Lighting and mechanical

Liberty Park – Pool covers and lighting

Memorial House – Lighting

Ottinger Hall – Mechanical

Sorenson Multi-cultural Center – Lighting, controls, mechanical

Traffic Operations Center – Lighting, mechanical

Sugarhouse Business District Maintenance Bldg. – Lighting



600 South Youth and Family – Lighting, mechanical

The results of implementing these energy conservation measures are estimated to be as follows:

SITE ENERGY SAVINGS:

- 308,694 kWh / year of electricity which equates to \$23,070 / year.
- 4524 Dth / year of natural gas which equates to \$30,745/ year.
- 1285 kGallons /year which equates to \$2,234 / year.
- Combined Utility cost avoidance of \$56,049/ year.
- 222 Metric Tons / year Co2 Carbon Emissions Reduction or 40 cars off the road

BUDGET IMPLICATIONS:

- Debt service on \$887,769 in upgrades would be covered by savings from utility costs.
- (one of several options listed below)
- \$55,181 in utility company incentives returned back to SLC for project.
- ESCO will guarantee all energy savings except small buildings with stipulated energy use determined baseline.

CURRENT CONDITION:

- Aging capital assets.
- Inefficient lighting and HVAC systems.
- Limited building environmental controls.

CAPITAL RENEWAL & IMPROVEMENTS

- Install computer controlled Building Management System SMCC
- Install pool covers SMCC.
- Boiler Improvements.
- Lighting Upgrades, T12's to T-8's.
- Install high efficiency RTUs.

FINANCING OPTIONS:

- Use existing Master Lease Schedule (Current Contract Amendment)
- Master Lease – Fixed Draw Option
- Sales Tax Revenue Bond
- Lease Revenue Bonds via the MBA Fund (RFP)

After careful analysis the most advantageous financing option for the City is to modify the existing Master Municipal Lease and use a Fixed Draw Option. The bond option has issuance fees and Bond Council fees that preclude it from being the best option.



COUNCIL BRIEFING

Energy Performance Project
December 8, 2009



2007 SLC ENGAGES ESCO

Investment Grade Energy Facility Audits

- Airports – Eliminated during preliminary evaluation
- Public Utilities
- CED Transportation (Street Lighting)
- Golf
- General Fund Buildings



2009 AUDITS

- Public Utilities 2 Facilities
- Public Services 24 Facilities
- Street Lighting City Wide
- Golf 6 of 7 Courses



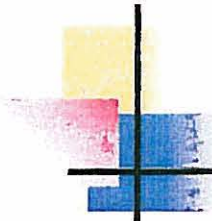
2009 AUDIT

Projects paid for with energy savings

- **Public Services**
 - General Fund Buildings
 - Public Safety Building – 315 East 200 South
 - Central Plant
- **CED Transportation**
 - Street Lighting
- **Golf**
 - Irrigation Renovation
- **Public Utilities**
 - Administration Building – Eliminated as a project. Too much construction needed.
 - Shops – Eliminated as a project. Too much construction needed.

PROJECT DEVELOPMENT



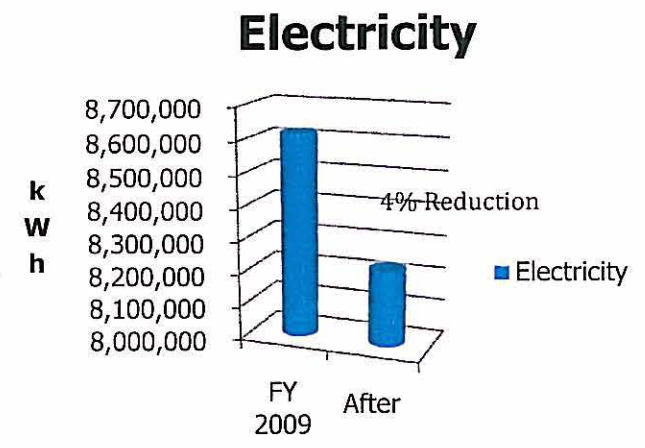
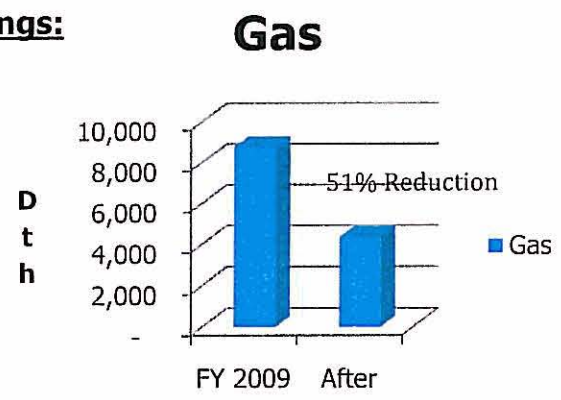


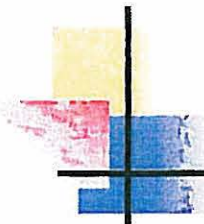
PHASE I – General Fund Buildings

Phase I - General Fund Buildings Project

Phase I - General Fund Buildings:

- Central Plant
- Compliance
- Facilities / Gray Glass
- Fairmont - Y&F
- Impound Facilities
- Liberty Park - Lighting & Pool
- Memorial House
- Ottinger Hall
- Sorenson Multi-Cultural Center
- Traffic Operations Center
- SBD - Maintenance
- Youth & Family





PROJECT PROFORMA

	Y/N	Facility	FIM Description	Implementation Price	Energy Savings	Associated Savings	Incentive	Payback (yrs)
1	Y	City Wide	Lighting & Lighting Controls	\$84,791	\$9,242	\$3,547	\$7,459	7.8
3	Y	City Wide	Water Conservation	\$32,831	\$2,901	\$0	\$1,042	11.0
4	Y	Sorenson	IDEC Evap Cooling RTU	\$0	\$1,163	\$0	\$0	0.0
5	Y	Sorenson	Variable Frequency Drives	\$9,544	\$499	\$0	\$975	17.2
7	Y	Sorenson	DDC and Controls	\$51,577	\$3,771	\$0	\$4,845	12.4
10	Y	Sorenson	Pool Cover	\$38,794	\$10,642	\$0	\$15,670	2.2
11	Y	Central Plant	Boiler Improvement/Replacement	\$142,362	\$10,573	\$0	\$14,550	12.1
12	Y	Ottinger Hall	Furnace Improvement/Replacement	\$8,184	\$1,905	\$0	\$0	4.3
25	Y	Sorenson	High Efficiency RTUs	\$160,615	\$3,363	\$0	\$0	47.8
10	Y	Liberty Park	Pool Cover	\$52,768	\$6,121	\$0	\$9,570	7.1
11	Y	Fairmont	Boiler Improvement/Replacement	\$27,483	\$883	\$0	\$1,070	29.9
22	Y	Liberty Park	1000 Watt Poles	\$46,418	\$4,984	\$1,459	\$0	7.2
Base Construction Costs				\$655,366	\$56,047	\$5,006	\$55,181	10.7
#			Non Construction Items	Implementation Price	Energy Savings	Op Savings	Percentage of Total Cost	Payback (yrs)
1			Contingency	\$31,628	\$0	\$0	4%	N/A
2			Direct Labor	\$86,159	\$0	\$0	10%	N/A
3			Contract Development	\$15,737	\$0	\$0	2%	N/A
4			Other Direct Project Costs	\$37,763	\$0	\$0	4%	N/A
5			Indirect Project Costs	\$40,341	\$0	\$0	5%	N/A
6			Audit	\$16,216	\$0	\$0	2%	N/A
7			Bond	\$4,560	\$0	\$0	1%	N/A
Non Construction Subtotal				\$232,404	\$0	\$0	26%	N/A
Total Project Cost				\$887,769	\$56,047	\$5,006	\$55,181	14.9
<p>Notes: The cost information is for budget purposes and is not intended to represent the actual construction cost of independent measures Simple Payback = (Project Cost)/(Yr 1 Total Annual Savings)</p>								

PROJECT CASH FLOW

Siemens Building Technologies, Inc. Confidential

15 Year Cash Flow Projection

Yr	Assets				Liabilities				Net Annual Benefit	Cum Cash Flow		
	Base Year Energy Costs	Energy Savings	Associated Savings (1)	Capital Aid	Total	Payment	Ongoing Service and M&V	Non-M&V TSP			GEO Peer Review Cost	Total
1		\$60,951	\$5,156	\$0	\$66,107	(\$59,959.83)	(\$5,841)	\$0		(\$65,800)	\$307	\$307
2		\$63,998	\$5,311	\$0	\$69,310	(\$63,148.83)	(\$6,016)	\$0		(\$69,165)	\$145	\$452
3		\$67,038	\$5,470	\$0	\$72,509	(\$66,958.83)	(\$6,196)	\$0		(\$72,155)	\$354	\$806
4		\$70,156	\$1,642	\$0	\$71,798	(\$71,783.83)	\$0	\$0		(\$71,784)	\$14	\$820
5		\$72,765	\$1,692	\$0	\$74,457	(\$74,450.83)	\$0	\$0		(\$74,451)	\$6	\$826
6		\$75,480	\$1,742	\$0	\$77,222	(\$77,218.83)	\$0	\$0		(\$77,219)	\$3	\$829
7		\$78,296	\$1,795	\$0	\$80,090	(\$80,089.83)	\$0	\$0		(\$80,090)	\$1	\$830
8		\$81,224	\$1,848	\$0	\$83,072	(\$83,067.83)	\$0	\$0		(\$83,068)	\$5	\$834
9		\$84,262	\$1,904	\$0	\$86,166	(\$86,156.83)	\$0	\$0		(\$86,157)	\$9	\$843
10		\$87,413	\$1,961	\$0	\$89,374	(\$89,361.83)	\$0	\$0		(\$89,362)	\$12	\$856
11		\$90,674	\$2,020	\$0	\$92,694	(\$92,685.83)	\$0	\$0		(\$92,686)	\$8	\$863
12		\$94,065	\$2,080	\$0	\$96,145	(\$96,133.83)	\$0	\$0		(\$96,134)	\$12	\$875
13		\$97,573	\$2,143	\$0	\$99,716	(\$99,710.83)	\$0	\$0		(\$99,711)	\$6	\$880
14		\$101,223	\$2,207	\$0	\$103,430	(\$103,421.83)	\$0	\$0		(\$103,422)	\$8	\$888
15		\$105,008	\$2,273	\$0	\$107,282	(\$107,270.83)	\$0	\$0		(\$107,271)	\$11	\$899
Total		\$1,230,126	\$39,246	\$0	\$1,269,372	(\$1,250,420.45)	(\$18,052)	\$0	\$0	(\$1,268,473)	\$899	\$899

Total Project Cost:	(\$887,769)	Capital Aid Rate:	0.0%
Other Credits (Rebates/Incentives):	\$55,181	Guarantee Period(yrs):	15
Other Costs(Construction Interest net Escrow Interest):	\$0	Service Inflation Rate:	
Net Financed Investment:	(\$832,588)	Energy Inflation Rate:	
Financial Term in Years:	15	Operational Savings Inflation Rate:	
Interest Rate:	5.00%	Cumulative Savings:	\$899
Payment Period:	In Arrears	Simple Payback (yrs):	13.43
No. of Payments:	60		
Annual Payment:	(\$79,229)		

Notes:

- Associated Savings include operational and cost avoidance savings.
- Payment represents an annual sum of periodic payments.
- Technical Support Program (tsp) is escalated at Service Inflation Rate.
- Performance Assurance required during guarantee period only.
- Interest Rate Subject to Change.
- Simple Payback=(Total Project Cost)/(Yr1 Total Assets)
- Annual guarantee may not exceed Total Project Cost.
- Construction interest based on 12 month funding to payment schedule.
- Annual guarantee amount is based on revenue neutral program.
- Cash Flow is for discussion purpose only.
- Includes estimated construction period escrow interest for 1st year.



FUNDING OPTIONS

- ❑ Master Lease – Schedule (Current Vendor) Contract Amendment
- ❑ Master Lease – Fixed Draw Option (Current Vendor)
- ❑ Sales Tax Revenue Bonds
- ❑ Lease Revenue Bonds via the MBA Fund (RFP)

After careful analysis the most advantageous financing option for the City is to modify the existing Master Municipal Lease and use a Fixed Draw Option. The bond option has issuance fees and Bond Council fees that preclude it from being the best option.