BALLWIN
Bringing People Together

Parks & Recreation

Memo

To: Robert Kuntz, City Administrator

From: Linda Bruer, Director of Parks and Recreation

Date: June 6, 2013

RE: Guaranteed Energy Savings Project

As discussed during the 2013 budget process, the five year capital plan for parks and recreation includes the potential replacement of several pieces of HVAC equipment and possibly the roof of The Pointe that have all reached the end of their useable lifecycles.

One way to approach this project is through a Guaranteed Energy Savings contract. This is a comprehensive approach to replacement as systems are analyzed from a mechanical as well as an energy and operational efficiency standpoint including HVAC, lighting, and exterior features such as windows and the roof. Guaranteed energy and operational savings help to off-set the cost of the new equipment. Department of Natural Resources grants and Ameren rebates also help off-set replacement costs.

Several government entities in our area including the cities of Hazelwood and Richmond Heights, as well as the Parkway School District, have used this method to make improvements to their facilities.

To investigate this process further, requests for qualifications/proposals were solicited from Guaranteed Energy Savings Contractors. Four proposals were received and reviewed by staff. Proposals were received from CTS Group, McKinistry, Ameresco, and Johnson Controls. Based on the level effort and experience demonstrated in the proposals, interviews were held with three of the firms, CTS, McKinistry, and Johnson Controls the week of May 27.

While all three firms employ qualified staff and have significant experience in guaranteed energy savings contracts, staff is recommending that the city move forward with a letter of intent to CTS Group to further investigate The Pointe's systems and prioritize needs for replacement, identify energy and operational savings opportunities, and develop a budget plan for future improvements. Moving forward with this process at this time would allow us to develop budget figures for 2014 and put numbers to our plan for the future.

In addition to their relevant experience with the City of Richmond Heights and their positive reference, CTS is the only firm that is local, located in Ellisville that would be available on a daily basis throughout the process.

There would be no cost to the city to move forward with this phase of the process.

Kuntz, Robert

From: Robert E Jones <REJones@lawfirmemail.com>
Sent: Tuesday, April 30, 2013 11:42 AM
To: Bruer, Linda
Cc: Kuntz, Robert
Subject: RE: Guaranteed energy cost savings contract legislation

Linda and Bob, per our discussion this morning, I found another statute that helps establish criteria for evaluating the contractors that respond to the RFP. The highlighted language suggests that we treat this more as an RFQ, despite the language of Sec. 8.231.3. I still think that interviews would be the most appropriate way to conclude this process.

Office of administration to contract for guaranteed energy cost savings contracts by bid, criteria--use of funds by governmental units--procurement implementation date.
8.235. 1. **Notwithstanding subsection 3 of section 8.231** and section 34.040, the office of administration is hereby authorized to contract for guaranteed energy cost savings contracts by selecting a bid for proposal from a contractor or team of contractors using **the following criteria:**
(1) The specialized experience and technical competence of the firm or team with respect to the type of services required;
(2) The capacity and capability of the firm or team to perform the work in question, including specialized services, within the time limitations fixed for the completion of the project. The scope of work identified in the report of energy audit findings shall be developed and executed in a manner that best meets the needs of the governmental unit. For the purposes of this section and section 8.237, "best meets the needs of the* governmental unit" means, but is not limited to, on a cost-effective and timely basis but not otherwise inconsistent with the provisions provided herein; and
(3) The past record of performance of the firm or team with respect to such factors as control of costs, quality of work and ability to meet schedules.
2. The guaranteed energy cost saving contract shall otherwise be in accordance with the provisions of section 8.231.
3. Other state governmental units may procure these services in accordance with this section.
4. A governmental unit may use designated funds, bonds, or master lease for any guaranteed energy cost savings contract including purchases using installment payment contracts or lease purchase agreements, so long as that use is consistent with the purpose of the appropriation.
5. Other state governmental units shall participate in the procurement of these services, in accordance with sections 8.231 and 8.237 with implementation beginning on or prior to June 1, 2006.

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Missouri Revised Statutes

Chapter 8
State Buildings and Lands
Section *8.231*

August 28, 2012

Guaranteed energy cost savings contracts, definitions--bids required, when--proposal request to include what--contract, to whom awarded, to contain certain guarantees.

8.231. 1. For purposes of this section, the following terms shall mean:

(1) "Energy cost savings measure", a training program or facility alteration designed to reduce energy consumption or operating costs, and may include one or more of the following:

(a) Insulation of the building structure or systems within the building;

(b) Storm windows or doors, caulking or weather stripping, multiglazed windows or doors, heat absorbing or heat reflective glazed and coated window or door systems, additional glazing reductions in glass area, or other window and door system modifications that reduce energy consumption;

(c) Automated or computerized energy control system;

(d) Heating, ventilating or air conditioning system modifications or replacements;

(e) Replacement or modification of lighting fixtures to increase the energy efficiency of the lighting system without increasing the overall illumination of a facility, unless an increase in illumination is necessary to conform to the applicable state or local building code for the lighting system after the proposed modifications are made;

(f) Indoor air quality improvements to increase air quality that conforms to the applicable state or local building code requirements;

(g) Energy recovery systems;

(h) Cogeneration systems that produce steam or forms of energy such as heat, as well as electricity, for use primarily within a building or complex of buildings;

(i) Any life safety measures that provide long-term operating cost reductions and are in compliance with state and local codes;

(j) Building operation programs that reduce the operating costs; or

(k) Any life safety measures related to compliance with the Americans With Disabilities Act, 42 U.S.C. Section 12101, et seq., that provide long-term operating cost reductions and are in compliance with state and local codes;

(2) "Governmental unit", a state government agency, department, institution, college, university, technical school, legislative body or other establishment or official of the executive, judicial or legislative branches of this state authorized by law to enter into contracts, including all local political subdivisions such as counties, municipalities, public school districts or public service or special purpose districts;

(3) "Guaranteed energy cost savings contract", a contract for the implementation of one or more such measures. The contract shall provide that all payments, except obligations on termination of the contract before its expiration, are to be made over time and the energy cost savings are guaranteed to the extent necessary to make payments for the systems. Guaranteed energy cost savings contracts shall be considered public works contracts to the extent that they provide for capital improvements to existing facilities;

(4) "Operational savings", expenses eliminated and future replacement expenditures avoided as a result of new equipment installed or services performed;

(5) "Qualified provider", a person or business experienced in the design, implementation and installation of energy cost savings measures;

(6) "Request for proposals" or "RFP", a negotiated procurement.

2. No governmental unit shall enter into a guaranteed energy cost savings contract until competitive proposals therefor have been solicited by the means most likely to reach those contractors interested in offering the required services, including but not limited to direct mail solicitation, electronic mail and public announcement on bulletin boards, physical or electronic. The request for proposal shall include the following:

(1) The name and address of the governmental unit;

(2) The name, address, title and phone number of a contact person;

(3) The date, time and place where proposals shall be received;

(4) The evaluation criteria for assessing the proposals; and

(5) Any other stipulations and clarifications the governmental unit may require.

3. The governmental unit shall award a contract to the qualified provider that provides the lowest and best proposal which meets the needs of the unit if it finds that the amount it would spend on the energy cost savings measures recommended in the proposal would not exceed the amount of energy or operational savings, or both, within a fifteen-year period from the date installation is complete, if the recommendations in the proposal are followed. The governmental unit shall have the right to reject any and all bids.

4. The guaranteed energy cost savings contract shall include a written guarantee of the qualified provider that either the energy or operational cost savings, or both, will meet or exceed the costs of the energy cost savings measures, adjusted for inflation, within fifteen years. The qualified provider shall reimburse the governmental unit for any shortfall of guaranteed energy cost savings on an annual basis. The guaranteed energy cost savings contract may provide for payments over a period of time, not to exceed fifteen years, subject to appropriation of funds therefor.

5. The governmental unit shall include in its annual budget and appropriations measures for each fiscal year any amounts payable under guaranteed energy savings contracts during that fiscal year.

6. A governmental unit may use designated funds for any guaranteed energy cost savings contract including purchases using installment payment contracts or lease purchase agreements, so long as that use is consistent with the purpose of the appropriation.

7. Notwithstanding any provision of this section to the contrary, a not-for-profit corporation incorporated pursuant to chapter 355 and operating primarily for educational purposes in cooperation with public or private schools shall be exempt from the provisions of this section.

(L. 1997 S.B. 408 § 1, A.L. 2002 S.B. 810 merged with S.B. 1012)

CTS GROUP

Ballwin Guaranteed Energy Savings Project – Preliminary Timeline

April 10, 2013

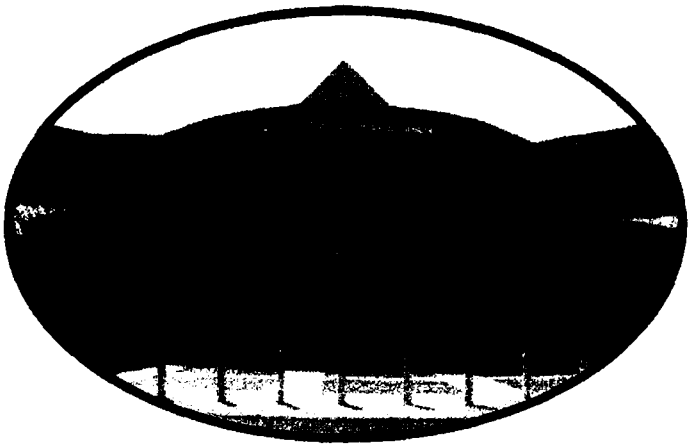
Milestone	Date
Release RFQ	May 2013
Receive RFQ back and select partner	June 2013
Approve Letter of Intent	June 2013
Prioritize projects and implementation Plan for 5 year plan/detailed audit and analysis	July 2013
Engineering/Design, development, walk contractors, finalizes costs and savings	July 2013 – September 2013
Present project options to determine needs for 2014 budget	September 2013
Determine projects for 2014 implementation	October 2013
Determine funding mechanism and finalize financing	October 2013/November 2013
Contract review and approval	November 2013/December 2013
Construction Starts on Project	December 2013 or January 2014
Construction Complete	Fall 2014
If financing first payment likely due	End of 2014 (interest only)

Phase 1 in 2013?	
Determine if there are immediate needs that should be completed this year – potentially roof, could implement lighting, pool efficiency and control strategies to offsite roof costs	July 2013
If yes – approve contract and CTS to help facilitate financing for Phase I starting in August 2013	August 2013
Phase I Construction	August – November 2013

Preliminary Analysis Summary

for a

Guaranteed Energy Savings Contract



September 14, 2012

Presented by: **Ellie Blankenship and Jim Thurman**

Incorporated in the State of Missouri

Agenda

- Goals and Challenges
- Our Approach
- Guaranteed Energy Savings Contracts
- How it works
- Case Study
- About CTS
- Next Steps

Goals and Challenges

- Budget Pressures
- Maintain Aging Infrastructure
- Maintain High Quality of Life
- Provide Effective and Valued Public Services
- Changing Demographics
- Environmental Issues
- Security/Public Safety
- Public Relations and Perceptions

In other words...*Cities are required every day to do more with less!*

HOW?

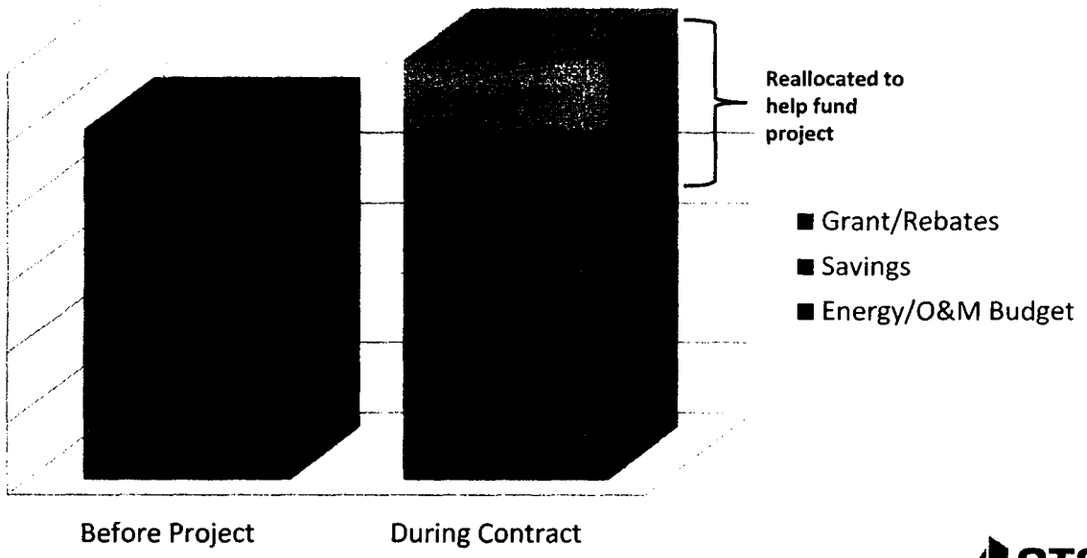
Guaranteed Energy Savings Contracts

- MO Statute 8.231
- Alternative procurement method
- Implementation of energy cost savings measures
- Addresses funding issues for capital projects
- Savings from project help pay for project
- No upfront money required
- Performance and savings are guaranteed
- Improves operating efficiency
- Flexible and unique for each customer
- Risk of performance belongs to Energy Services Company (ESCO)
- 15 year payback

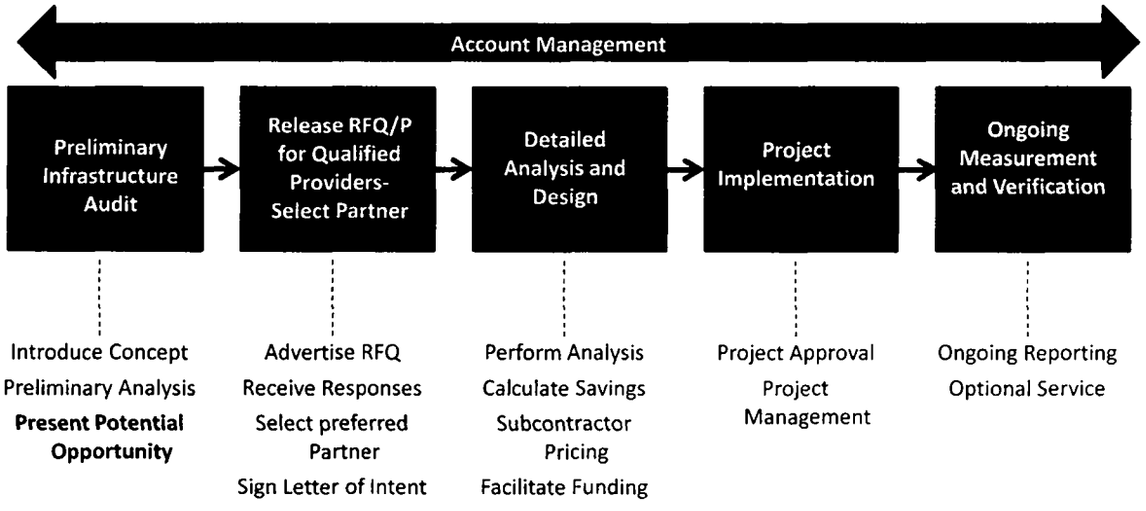
Key Differences

Traditional Bid/Spec	Performance- Based
Low bid awarded based on specifications	Bid awarded based on performance and lifecycle costs
Project costs funded by capital budget	Payments for project are offset by guaranteed savings freeing up capital for other needs
Piecemeal Approach	Comprehensive Approach
Up-front fee for evaluation/studies	No up-front fee required
Performance and savings are not guaranteed	Long-term performance and savings are guaranteed
Multiple contracts with multiple vendors	One contract, single point accountability
Contractors have no accountability to reduce energy or maintenance costs	Performance-based contractor is tied to providing savings over term of contract
Owner assumes risk	Performance contractor takes on risk

How these projects work



The Process

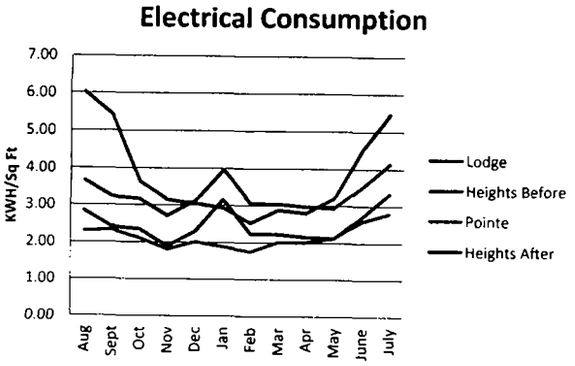


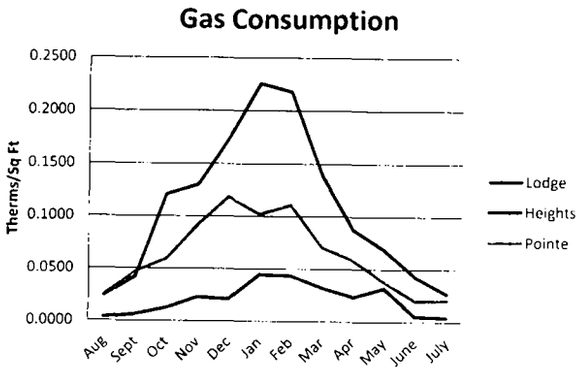
Community Center Profile

- Built in 1996, pool added in 1997
- 66,000 sq ft
- Houses gym, indoor track, weight room, cardio equipment, dance/aerobic studio, locker rooms, baby sitting room, concession area, game room, onsite kids play area, staff offices, meeting rooms and indoor water park with lap pool, water slide and spa
- Occupancy Schedule
  - Monday-Friday: 5:15 am -10:00 pm
  - Saturday: 7:00 am - 8:00 pm
  - Sunday: 10:00 am - 6:00 pm

Utility Analysis

	Annual Consumption	Annual Costs		Average Unit Cost
Electricity	1,696,800 kWh	$ 121,551	76%	$ 0.072 $/kWh
Natural Gas	50,243 Therms	$ 37,753	24%	$ 0.751 $/therm
		Total $ 159,303		
Floor Area	66,000 SF			
Electricity Use Intensity	25.7 kWh/SF/yr	Gas Use Intensity		0.76 therms/SF/yr
Energy Use Index	166.1 kBtu/SF/yr	Energy Cost Intensity		$ 2.41 $/SF/yr





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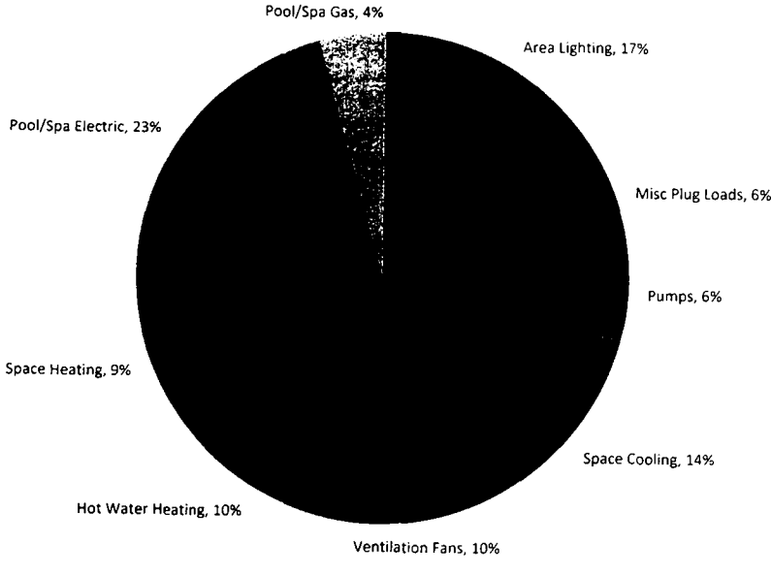
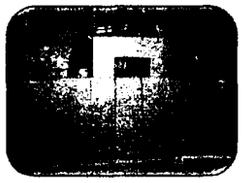
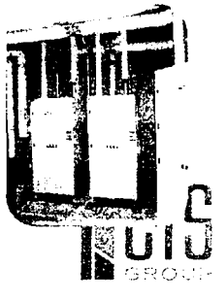
Energy Profile



Existing Conditions

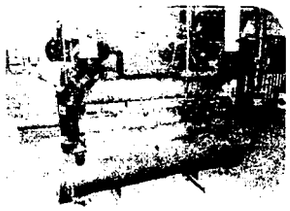
- Four Large Air Handling Units (AHUs) provide heating and cooling
  - Two indoor AHUs serve main building
    - AHU #1 Serves Variable Air Volume System (VAV) with hot water reheat
    - AHU #2 Constant Volume for the Gym
  - Two PoolPak Units serve the natatorium
- Gas fired boiler system with four condensing boilers
  - Hot water heating loop maintained at 190°F
  - Boiler efficiencies are limited to 85-87% with current setup
  - Pumps are equipped with premium efficiency motors

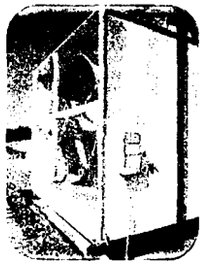




Existing Conditions

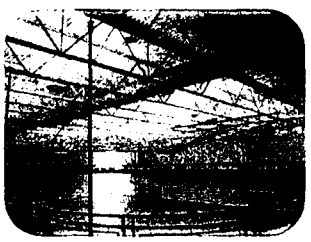
- Chilled water provided by York water-cooled chiller which as required significant repairs
  - Evaporator bundle has been replaced
  - Compressors have been repaired
  - Chilled water tank installed to compensate for lack of water in the system
- Open loop roof mounted cooling tower with remote mechanical sump is utilized for condenser heat rejection





Existing Conditions

- Various lighting Sources utilized in the facility
  - Indirect 1000W HID(Metal Halide) in Gym and Pool Area
  - HID lighting is also used in much of the foyer, exterior and under canopy lighting
  - Few fluorescent cans
  - General lighting 2x4 lay in troffers with 32W T8 lamps
- Electrical service is 1,600A, 277/480V 3Ø 4-wire provided by a utility owned transformer



Recommendations

- Perform a detailed lighting audit
  - Upgrade existing fluorescent fixtures to new 28W T8
  - Upgrade HID lighting to either high bay fluorescents or ceramic metal halide
  - Install occupancy sensors
  - Daylight harvesting
- Installation of vending misers
- Building envelope improvements
  - Sealing and/or weather-stripping of windows, doors, roof seams

Recommendations

- Control system audit/upgrade and implementation of controls strategies
  - Optimum start
  - Demand control ventilation
  - Discharge air temperature and duct static pressure reset scheduling
  - Differential pressure reset control on pump system
  - Dual maximum control strategy for VAV boxes
  - Occupancy based HVAC control
- Pool equipment upgrades
  - Integration of the UV system to the spa
  - Premium efficiency, inverter duty pump motor installation
  - Variable frequency drives (VFD)
  - Automation of start and stopping of pool features

Recommendations

HVAC Equipment and Systems Upgrades

Option 1- Provide Upgrades to Existing System as Designed

- Evaluate refurbishment/replacement of AHUs and PoolPaks
  - Installation of higher efficiency fans
  - VFD implementation on gym unit
  - Equipment controller and programming upgrades of PoolPaks
  - Motor Replacement
  - Control damper and actuator replacements
  - Revitalize cooling and heating coils with performance enhancing coating or replace
  - Offer options for replacement should they be warranted
- Chilled Water System
  - Provide options for Chiller refurbishment or upgrade to new more efficient chiller
  - Replace cooling tower
- Heating hot water system
  - Evaluate decoupling a pair of boilers
  - Evaluate solar thermal water heating system

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Proprietary & Confidential

Recommendations

HVAC Equipment and Systems Upgrades

Option 2- HVAC System Redesign

- AHU-1 and AHU-2 would be refurbished or replaced
- Water-to-water heat pump chillers will provide chilled water to the cooling coils in each AHU
- Heat pump hot water boilers will supply AHUs and will be installed for domestic hot water production
- Air-to-air energy recovery units will capture the exhaust air and recovery for preconditioning the air
- Water-to-air heat pumps will be used for dehumidifying the natatorioum and PoolPaks would be eliminated
- All units will be connected to a common single-pipe condenser water loop
- Geothermal well field will be sized and installed

Financial Summary

Project	Budget Costs	Estimated Energy Savings	Estimated Operational Savings
Option 1	$1,200,000	$12,000-$15,000	$20,000-$30,000
Option 2	$2,900,000-$3,300,000	$45,000-$50,000	$40,000-$50,000

- All projects would be finalized during detailed audit and final scope determined with City
- Energy savings will be guaranteed
- Operational savings will be verified through operational audit
- If financing could budget between $80,000-$130,000 per year for improvements

Sample Business Case- Base Project

Guaranteed Energy Savings Project	
Capital Expenditures	$1,650,000
HVAC Services (O&M)	$0

Financing Terms	Projects
Financing Term (years)	15
Net Effective Interest Rate	2.50%
Principal	$1,650,000
Annual P&I Payments	$132,589

Funding	
Estimated Utility Savings	$15,000
Estimated Operational Savings	$25,000
Estimated Utility Rebate	$0
Owner Capital	$85,000
Owner Buydown/Grants	$0

Annual Inflation Rate	4.0%

	Project Costs			Project Funding					Net Effect	Cumulative
Fiscal Year	Loan Re-payment	Service/ M&V	Total Debits	Energy Savings	Operational Savings	Rebates	Owner Capital	Total Credits	On Budget	Effect On Budget
2012	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2013	($133,265)	$0	($133,265)	$15,000	$25,000	$0	$85,000	$125,000	($8,265)	($8,265)
2014	($133,265)	$0	($133,265)	$15,600	$26,000	$0	$85,000	$126,600	($6,665)	($14,929)
2015	($133,265)	$0	($133,265)	$16,224	$27,040	$0	$85,000	$128,264	($5,001)	($19,930)
2016	($133,265)	$0	($133,265)	$16,873	$28,122	$0	$85,000	$129,995	($3,270)	($23,200)
2017	($133,265)	$0	($133,265)	$17,548	$29,246	$0	$85,000	$131,794	($1,470)	($24,670)
2018	($133,265)	$0	($133,265)	$18,250	$30,416	$0	$85,000	$133,666	$401	($24,269)
2019	($133,265)	$0	($133,265)	$18,980	$31,633	$0	$85,000	$135,613	$2,348	($21,921)
2020	($133,265)	$0	($133,265)	$19,739	$32,898	$0	$85,000	$137,637	$4,373	($17,548)
2021	($133,265)	$0	($133,265)	$20,529	$34,214	$0	$85,000	$139,743	$6,478	($11,070)
2022	($133,265)	$0	($133,265)	$21,350	$35,583	$0	$85,000	$141,932	$8,668	($2,402)
2023	($133,265)	$0	($133,265)	$22,204	$37,006	$0	$85,000	$144,210	$10,945	$8,543
2024	($133,265)	$0	($133,265)	$23,092	$38,486	$0	$85,000	$146,578	$13,314	$21,856
2025	($133,265)	$0	($133,265)	$24,015	$40,026	$0	$85,000	$149,041	$15,777	$37,633
2026	($133,265)	$0	($133,265)	$24,976	$41,627	$0	$85,000	$151,603	$18,338	$55,971
2027	($133,265)	$0	($133,265)	$25,975	$43,292	$0	$85,000	$154,267	$21,002	$76,974
Total	**($1,998,970)**	**$0**	**($1,998,970)**	**$300,354**	**$500,590**	**$0**	**$1,275,000**	**$2,075,944**	$76,974	**$76,974**

Sample Business Case- Base Project

Guaranteed Energy Savings Project	
Capital Expenditures	$3,000,000
HVAC Services (O&M)	$0

Financing Terms	Projects
Financing Term (years)	15
Net Effective Interest Rate	2.50%
Principal	$3,000,000
Annual P&I Payments	$241,071

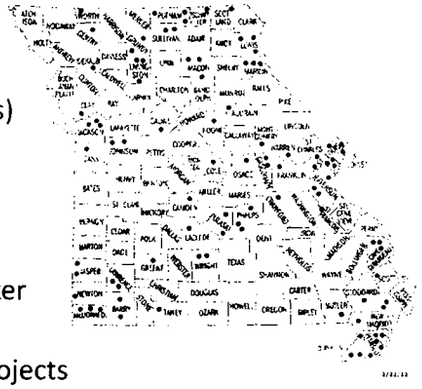
Funding	
Estimated Utility Savings	$50,000
Estimated Operational Savings	$45,000
Estimated Utility Rebate	$0
Owner Capital	$120,000
Owner Buydown/Grants	$0

Annual Inflation Rate	4.0%

	Project Costs			Project Funding					Net Effect	Cumulative
Fiscal Year	Loan Re-payment	Service/ M&V	Total Debits	Energy Savings	Operational Savings	Rebates	Owner Capital	Total Credits	On Budget	Effect On Budget
2012	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2013	($242,299)	$0	($242,299)	$50,000	$45,000	$0	$120,000	$215,000	($27,299)	($27,299)
2014	($242,299)	$0	($242,299)	$52,000	$46,800	$0	$120,000	$218,800	($23,499)	($50,799)
2015	($242,299)	$0	($242,299)	$54,080	$48,672	$0	$120,000	$222,752	($19,547)	($70,346)
2016	($242,299)	$0	($242,299)	$56,243	$50,619	$0	$120,000	$226,862	($15,437)	($85,783)
2017	($242,299)	$0	($242,299)	$58,493	$52,644	$0	$120,000	$231,137	($11,163)	($96,946)
2018	($242,299)	$0	($242,299)	$60,833	$54,749	$0	$120,000	$235,582	($6,717)	($103,664)
2019	($242,299)	$0	($242,299)	$63,266	$56,939	$0	$120,000	$240,205	($2,094)	($105,758)
2020	($242,299)	$0	($242,299)	$65,797	$59,217	$0	$120,000	$245,014	$2,714	($103,043)
2021	($242,299)	$0	($242,299)	$68,428	$61,586	$0	$120,000	$250,014	$7,715	($95,329)
2022	($242,299)	$0	($242,299)	$71,166	$64,049	$0	$120,000	$255,215	$12,915	($82,414)
2023	($242,299)	$0	($242,299)	$74,012	$66,611	$0	$120,000	$260,623	$18,324	($64,090)
2024	($242,299)	$0	($242,299)	$76,973	$69,275	$0	$120,000	$266,248	$23,949	($40,141)
2025	($242,299)	$0	($242,299)	$80,052	$72,046	$0	$120,000	$272,098	$29,799	($10,342)
2026	($242,299)	$0	($242,299)	$83,254	$74,928	$0	$120,000	$278,182	$35,883	$25,540
2027	($242,299)	$0	($242,299)	$86,584	$77,925	$0	$120,000	$284,509	$42,210	$67,750
Total	**($3,634,491)**	**$0**	**($3,634,491)**	**$1,001,179**	**$901,061**	**$0**	**$1,800,000**	**$3,702,241**	$67,750	**$67,750**

About CTS

- Headquartered in Missouri
- More Missouri Projects then any other ESCO
  - $100 Million in MO in the last 5 years (54 projects)
  - Average project size $1.8M
  - $10 Million in annual savings
- Customer Focused - Local Decision Making
  - Direct owner access, higher level of service, quicker response
  - Over 1/3 of our customers have done multiple projects
- In-house Technical Resources and Project Management
- Vendor- Neutral



"According to the Bureau of Economic Analysis, a $2M energy efficiency construction-related project can create 50 jobs"

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In Summary

The CTS program does the following for the City:

- Create jobs
- Lowers energy costs
- Lowers operating costs
- Addresses long term capital improvement projects
- Reduces carbon emissions
- Mitigates risk
- Creates healthier, safer and more comfortable environments
- Frees up capital for other needs

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Proprietary & Confidential

Next Steps

- Present concept to other City personnel?
- Release RFP?