

**TENNESSEE LOCAL DEVELOPMENT AUTHORITY**  
**JUNE 22, 2017**  
**AGENDA**

1. Call Meeting to Order
2. Approval of Minutes from the TLDA meeting of May 11, 2017
3. Consider for approval a recommendation made by the Department of Environment and Conservation for the suballocation of Qualified Energy Conservation Bonds (QECBs) to Williamson County in response to the Request for Proposal for qualified uses of these bonds
4. Consider for approval the following Clean Water State Revolving Fund loans:

	SRF Base Loan	Principal Forgiveness	Total SRF Funding	Interest Rate
Greenbrier, SRF 2017-380	\$ 2,163,700	\$ -	\$ 2,163,700	0.52%
Memphis, SRF 2015-355	\$25,000,000	\$ -	\$25,000,000	0.75%
Millersville, CW6 2017-391	\$ 466,200	\$ 51,800	\$ 518,000	0.28%
Oakland, SRF 2016-369	\$ 1,010,365	\$ -	\$ 1,010,365	1.60%
Oak Ridge, SRF 2017-396	\$ 3,100,000	\$ -	\$ 3,100,000	1.69%
Parrottsville, CW5 2017-378	\$ 170,000	\$ 30,000	\$ 200,000	0.81%

5. Consider for approval the following Drinking Water State Revolving Fund loans:

	SRF Base Loan	Principal Forgiveness	Total SRF Funding	Interest Rate
Cleveland, DW6 2017-192	\$ 800,000	\$200,000	\$1,000,000	1.60%
Cleveland, DWF 2017-193	\$ 195,000	\$ -	\$ 195,000	1.60%
Smith UD, DWF 2017-194	\$ 250,000	\$ -	\$ 250,000	0.76%

6. Adjourn

**TENNESSEE LOCAL DEVELOPMENT AUTHORITY**  
**May 11, 2017**

The Tennessee Local Development Authority (the "Authority" or "TLDA") met on Thursday, May 11, 2017, at 8:50 a.m. in the State Capitol, executive conference room, Nashville, Tennessee. The Honorable Tre Hargett, Secretary of State, was present and presided over the meeting.

The following members were also present:

The Honorable Justin Wilson, Comptroller of the Treasury  
Commissioner Larry Martin, Department of Finance and Administration  
Courtney Hess, Proxy for the Honorable David Lillard, State Treasurer

The following members participated telephonically as authorized by Tennessee Code Annotated Section 8-44-108 and as posted in the meeting notice:

Mr. Pat Wolfe, Senate Appointee  
Dr. Kenneth Moore, House Appointee

The following member was absent:

The Honorable Bill Haslam, Governor

Recognizing a physical quorum present, Mr. Hargett called the meeting to order and asked Ms. Sandra Thompson, Director of the Office of State and Local Finance ("OSLF") to call the roll:

Dr. Moore — Present  
Mr. Wolfe — Present  
Mr. Hargett — Present  
Mr. Wilson — Present  
Mr. Martin — Present  
Ms. Hess — Present

Mr. Hargett stated that the first item on the agenda item was to approve the minutes of the previous meeting held on April 6, 2017. Mr. Wilson made a motion to approve the minutes and Mr. Martin seconded the motion. Ms. Thompson called the roll:

Dr. Moore — Aye  
Mr. Wolfe — Aye  
Mr. Hargett — Aye  
Mr. Wilson — Aye  
Mr. Martin — Aye  
Ms. Hess — Aye

The minutes were unanimously approved.

Mr. Hargett stated that the next item on the agenda was to hear an update on the City of Paris' (the "City") Qualified Energy Conservation Bonds ("QECCB") suballocation request that was approved at the TLDA's April 6, 2017 meeting, contingent upon the receipt of the final signed authorizing resolution from the City. Mr. Hargett asked Ms. Alexa Voytek, Grants Program Manager, Office of Energy Programs ("OEP") in the Department of Environment and Conservation, to present the update. Ms. Voytek stated this resolution was necessary because the original resolution for bonds in an amount not to exceed \$2,150,000 adopted by the City on March 2<sup>nd</sup> was not

sufficient due to increased project costs. As of the April 6<sup>th</sup> meeting, the City still needed to adopt a subsequent supplemental resolution for the issuance of an additional \$450,000 in bonds. On April 12<sup>th</sup>, the City provided OEP with the signed subsequent supplemental. Ms. Voytek then stated that on April 13<sup>th</sup>, Ms. Thompson confirmed that this resolution satisfied the TLDA's conditions for approval of the City of Paris' proposed QECB project.

Mr. Hargett then asked Ms. Alexa Voytek, to present the request by the Economic Development Growth Engine (EDGE). Ms. Voytek explained that EDGE, as a conduit issuer for the city of Memphis, proposed to use the proceeds of a \$2,142,850 bond issuance for energy efficiency upgrades at the Southbrook Towne Centre, as part of the Memphis Green Communities Program. The project would include the replacement of the roof with an energy efficient roof system, an upgraded HVAC system, and an upgrade to the building's electrical power grid. The issuance of the bonds was expected to take place between June and November of 2017. Ms. Voytek explained that the TLDA had approved an allocation to the Center City Revenue Finance Corporation (the "CCRFC"), another conduit issuer for the city of Memphis, for the Southbrook Town Centre. However, it was subsequently determined that the project was outside the geographical jurisdiction for which the CCRFC has bonding. Therefore, the allocation to the CCRFC had been returned to the program. Ms. Voytek stated that upon approval of this request, the total QECB allocation remaining for suballocation would be \$22,260,745.

Mr. Hargett made a motion to approve the request, and Mr. Wilson seconded the motion. Ms. Thompson called the roll:

Dr. Moore — Aye  
Mr. Wolfe — Aye  
Mr. Hargett — Aye  
Mr. Wilson — Aye  
Mr. Martin — Aye  
Ms. Hess — Aye

The motion was unanimously approved.

Mr. Hargett stated that the next item on the agenda was the report of notification by the Town of Oliver Springs of an intent to issue additional debt. Mr. Hargett recognized Ms. Thompson, who explained that Oliver Springs intended to pledge water and sewer revenues to the debt, but that the new debt would be subordinate to the town's outstanding SRF loan. This notification was necessary to comply with SRF policy and guidance.

Mr. Hargett stated that the next item was a public hearing and approval of the TLDA Debt Management Policy (the "Policy"). Mr. Hargett recognized Ms. Thompson who stated that the Office of State and Local Finance had worked with the Attorney General's Office to review and update the Policy to conform to current regulations and to make the Policy consistent with the debt management policies of the Tennessee State School Bond Authority and the State Funding Board. Ms. Thompson stated that changes had been made in the following sections: the Introduction (to define the Authority's staff as the Office of State and Local Finance, as requested by Dr. Moore), Methods of Sale, Risk Assessment, Transparency, Debt Administration – Post-Sale, Investment of Proceeds, Disclosure, Debt Management, Types of Debt – Short-Term Debt, and Professional Services. Mr. Hargett thanked the Office of State and Local Finance, and the Attorney General's Office, for their work on the Policy.

Mr. Hargett asked if there were any public comments. Hearing none, Mr. Hargett made a motion to approve the revisions to the Policy, and Mr. Wilson seconded the motion. Ms. Thompson called the roll:

Dr. Moore — Aye  
Mr. Wolfe — Aye  
Mr. Hargett — Aye  
Mr. Wilson — Aye  
Mr. Martin — Aye  
Ms. Hess — Aye

The motion was unanimously approved.

Hearing no other business, Mr. Wilson made a motion to adjourn the meeting, and Mr. Martin seconded the motion. Ms. Thompson called the roll:

Dr. Moore — Aye  
Mr. Wolfe — Aye  
Mr. Hargett — Aye  
Mr. Wilson — Aye  
Mr. Martin — Aye  
Ms. Hess — Aye

The meeting was adjourned.

Approved on this \_\_\_\_ day of \_\_\_\_\_, 2017.

Respectfully submitted,

Sandra Thompson  
Assistant Secretary

**DRAFT**

## QECB Update – Total State Allocation (June 2017)

<b>Total State Allocation</b>	<b>64,676,000</b>		
Allocation for Large Local Jurisdictions (LLJs)			35,998,072
Allocation to State			28,677,928
		<b>Utilized/Retained</b>	<b>Reallocated</b>
<b>Allocation for LLJs</b>	<b>35,998,072</b>		
Chattanooga <sup>1</sup>		1,767,919	
Clarksville <sup>2</sup>		1,240,000	
Hamilton County <sup>3</sup>		1,668,015	
Memphis <sup>4</sup>		7,014,356	
Metro Nashville/Davidson County <sup>5</sup>		6,441,971	
Other LLJs' Reallocations to State			17,865,811
		18,132,261	17,865,811
<b>Amount Available for Suballocation / RFP (State Allocation Plus Reallocations)</b>			<b>46,543,739</b>
<b>Closed Issuances</b>			
Memphis <sup>4</sup>			3,657,644
Knox County <sup>6</sup>			12,450,000
City of Lebanon <sup>7</sup>			3,500,000
City of Paris <sup>8</sup>			2,532,500
<b>Pending Issuances</b>			
Memphis <sup>9</sup>			2,142,850
<b>Proposals</b>			
Williamson County <sup>10</sup>			10,200,000
<b>Total Allocation Remaining</b>			<b>12,060,745</b>

<sup>1</sup> As of December 2016, Chattanooga was evaluating projects for which it will use QECBs.

<sup>2</sup> Clarksville issued an RFP for a street light improvement project. Bond issuance closed for this project (\$1,240,000) on March 23, 2016.

<sup>3</sup> As of June 2016, Hamilton County had not yet identified a project for which they will use QECBs.

<sup>4</sup> Memphis combined its initial \$7,014,356 QECB allocation and its RFP suballocation of \$3,657,644 to support energy improvement projects under its Green Communities Program. Bond issuance closed for one project, Sears Crosstown (\$8,316,000), on February 18, 2015. Bond issuance for two other projects, Universal Life Insurance Building / Self Tucker (\$2,015,300) and Knowledge Quest (\$340,700), closed on April 29, 2015.

<sup>5</sup> Metropolitan Nashville issued its QECB allocation (\$6,440,000) in August 2012 for energy improvements to its arena.

<sup>6</sup> The bond issuance for Knox County's suballocation project (\$12,450,000), which funded the installation of solar PV on 13 targeted sites across the county, closed on June 30, 2015.

<sup>7</sup> The bond issuance for Lebanon's suballocation project (\$3,500,000), which funded the installation of a waste-to-energy gasification unit, closed on April 24, 2015.

<sup>8</sup> The bond issuance for Paris' suballocation project (\$2,532,500), which will fund the upgrade of street lights to LED technology, conversion of lighting within select City-owned buildings to LED lighting technology, the addition of intelligent thermostats on HVAC systems, the addition of energy-saving vending machine controls, and an upgrade to the Civic Center's indoor pool dehumidifier, closed on June 5, 2017.

<sup>9</sup> The bond issuance for a fourth Memphis' Green Communities Program suballocation project (\$2,142,850), which will support energy efficiency upgrades to the Southbrook Towne Center, is expected to take place prior to November 2017.

<sup>10</sup> Williamson County is proposing to use the proceeds from a \$10,200,000 bond issuance to finance energy conservation measures within 14 Williamson County School buildings.

## TLDA Staff Meeting

June 13, 2017

### QECB Summary: RFP #3

Proposer: Williamson County  
Project: Williamson County Schools ESCO Phase-1  
Amount: \$10,200,000  
Proposed Date of Issuance: July 2017 (180 days from June 22 is December 19)  
Bond Counsel: Jeffrey Oldham and Lillian Blackshear, Bass, Berry & Sims PLC

Williamson County Schools (WCS) is proposing to use the proceeds from a \$10,200,000 bond issuance to finance the first of at least three phases of an Energy Savings Performance Contract (ESPC) with Trane serving as the Energy Performance Contractor (ESCO). During the first phase, various energy conservation measures (ECMs) will be performed within 14 Williamson County schools. Issuance is expected to take place in July of 2017. The ECMs include the following:

- a. Lighting conversions to LED technology for both interior and exterior lighting.
- b. Upgrading of computer-controlled thermostats, or Building Automation Systems controls, to more energy-efficient systems.
- c. Installation of internet-programmable thermostats in portable classrooms to establish occupied and unoccupied time periods to better control energy usage for the 49 portable classrooms within WCS.
- d. Installation of Demand Control Ventilation in various gym and auditorium spaces.
- e. Installation of various HVAC system upgrades to server rooms.
- f. Upgrading of the Water Sourced Heat Pump to improve efficiency of the system.
- g. Installation of variable frequency drives on Water Sourced Heat Pump loop pumps to more efficiently regulate the use of loop flow.
- h. Installation of building weatherization upgrades to windows and doors to tighten the building energy envelope.
- i. Installation of vending and snack miser systems to vending machines to better manage the energy usage of these devices.
- j. Installation of cooling tower sub-metering to better allocate the usage of water not associated with sewer and to capture related energy savings.
- k. Installation of low-flow fixtures to reduce water consumption and capture related energy savings.

The project is predicted to reduce the Energy Usage Index (EUI) for this group of 14 schools from the current 49 kBtu/SF/Yr from 49 to 35, which is a 28% reduction. This is expected to produce over \$11 million of guaranteed energy savings over the term of the financing and will continue to provide savings for the lifetime of the systems. Trane has conducted an Investment Grade Audit of the 14 schools and will provide a guaranteed savings commitment for each of over 160 ECMs. The guaranteed energy savings written into the ESPC between Williamson County Schools and Trane is expected to provide Williamson

County Schools with cash savings sufficient to fund the County's payments of all costs and fees associated with the ESPC, including the 1) fee associated with the Investment Grade Audit, 2) all debt service payments used to finance the measures, and 3) any annual fees for monitoring and maintenance incurred by Trane. Should the guaranteed savings not be met, Trane shall provide a payment to the County to cover the difference.

The County was initially designated as a Large Local Jurisdiction (LLJ) under the QECB program, but re-allocated its QECB share to the State, as it did not have energy conservation projects it deemed appropriate for financing at the time. The County has determined that the project being proposed today is appropriate for financing with QECBs. Project results and impacts will be collected and reported to the TDEC Office of Energy Programs (OEP) by Trane in conjunction with WCS. The County anticipates that it will submit additional QECB applications to TDEC OEP in connection with the remaining two phases of the ESPC.

The proposal packet includes:

- A project proposal from Williamson County;
- A letter from bond counsel, indicating that the project is an eligible use of QECBs;
- A reimbursement resolution, indicating the County's intent to reimburse itself, if beneficial for the County, for certain expenditures from QECB proceeds.

Upon contingent approval of the QECB sub-allocation, the County intends to adopt initial and detailed bond resolutions authorizing the issuance of QECBs at its July County Commission meeting. TDEC, therefore, presents this proposal and recommends approval contingent upon receipt of the authorizing resolution for the bond issuance by the County Commission.

If this proposal is approved by TLDA, the total remaining for suballocation would be \$12,060,745.

# **WILLIAMSON COUNTY, TENNESSEE**



## **Qualified Energy Conservation Bond Proposal**

Submitted To:

Office of Energy Programs  
Tennessee Department of Environment and Conservation

June 9, 2017



**Williamson County, Tennessee  
Qualified Energy Conservation Bond Proposal**

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## Qualified Energy Conservation Bond Proposal

### 1. Project Summary

*Provide a brief overview of the project. If Proposer was designated as an LLJ under the QECCB Program, please provide information relative to progress made with the initial QECCB allocation. If Proposer re-allocated its share to the State, please address the decision not to utilize the initial QECCB allocation. Proposers should also provide information on how project results and impacts will be collected and reported to OEP after the completion of the project.*

The proposed project (the “Project”) is the first of at least three phases of an Energy Savings Performance Contract (“ESCO”) that Williamson County Schools (“WCS”) intends to enter into with Trane. This first phase will perform various energy conservation measures (“ECMs”) within fourteen (14) WCS buildings. Trane has conducted a detailed energy audit of these schools and has provided a guaranteed savings commitment for each of over 160 ECMs. These savings are guaranteed and will cover the terms of the financing needed within the current utility budget of WCS. Thus, no new capital is required for this first phase outside the QECCB financing requested. The ECM projects are as follows:

- a. Lighting conversions to LED technology for both interior and exterior (parking lots, and security) lighting. This includes a 10-year warranty and provides commonality of all WCS lighting in both parts and lumen levels in all classrooms.
- b. Upgrading of computer-controlled thermostats, or Building Automation Systems (“BAS”) controls, to more energy-efficient *Alerton* systems.
- c. Installation of internet-programmable thermostats in portable classrooms to establish occupied and unoccupied time periods to better control energy usage for the 49 portable classrooms within WCS.
- d. Installation of Demand Control Ventilation in various gym and auditorium spaces.
- e. Installation of various HVAC system upgrades to server rooms.
- f. Upgrading of the Water Sourced Heat Pump (“WSHP”) to improve efficiency of the WSHP system.
- g. Installation of Variable Frequency Drives (“VFDs”) on WSHP Loop Pumps to more efficiently regulate the use of loop flow.
- h. Installation of building weatherization upgrades to windows and doors to tighten the building energy envelope.
- i. Installation of vending and snack miser systems to vending machines to better manage the energy usage of these devices to periods of time that the buildings are occupied.
- j. Installation of cooling tower sub-metering to better allocate the usage of water not associated with sewer and capture related energy savings.
- k. Installation of low-flow fixtures to reduce water consumption and capture related energy savings.

Williamson County (the “County”) believes that the Project, as described above, will result in long-term sustainable energy and operational savings to the County and will be a positive addition to both the County and WCS.

The County was initially designated as an LLJ but re-allocated its QECB share to the State because, at the time, it did not have energy conservation projects it deemed appropriate for financing. For the reasons provided herein, the County has determined that the Project is appropriate for financing and would like to finance the Project at this time with QECBs. Project results and impacts will be collected and reported to the Office of Energy Programs (“OEP”) by Trane in conjunction with WCS. The County anticipates submitting additional QECB applications to OEP in connection with the remaining two phases of the ESCO.

**2. General Information**

- a. Local Government or Private Entity: Williamson County, Tennessee (Williamson County Schools)
- b. Issuing Entity: Williamson County, Tennessee
- c. Name or Purpose of Project: WCS ESCO Phase-1
- d. Location of Project: Fourteen Williamson County school buildings and facilities
- e. Amount of Qualified Energy Conservation Bond sought: \$10,200,000. Note that the County anticipates issuing the QECBs in two separate series – one issue for K-8 and one issue for high schools, but the total QECB financing amount requested for both series is \$10,200,000.
- f. Type of Bonds requested:
  - a. Government Use Amount: \$10,200,000 (Percentage: 100%)
  - b. No Private Activity Amount
  - c. General Obligation Bonds
- g. Proposed date or date range of bond issuance: July 2017
- h. Anticipated Bond Rating (if public offering):

	<b>Rating</b>	<b>Date Rating Anticipated</b>
<b>Fitch</b>	N/A	N/A
<b>Moody's</b>	Aaa	July 2017
<b>Standard &amp; Poor's</b>	N/A	N/A
<b>Other</b>	N/A	N/A

- i. Name, address, phone number, and tax ID number of the proposed issuer and, if private borrower or developer, as applicable:

Williamson County Government  
 1320 West Main Street, Suite 130  
 Franklin, TN 37064

Attention: Nena Graham  
615-790-5703  
Tax ID #: 62-6000913

- j. Please indicate the applicable general category for your project, as well as the specific category:

This Project consists of capital expenditures incurred for the purposes of reducing energy consumption in publicly-owned buildings by at least 20 percent. WCS has set a goal of reducing its Energy Usage Index (“EUI”) from the current 49 kBtu/SF/Yr to a figure in the mid-30s. The Project is predicted to reduce the EUI of this group of 14 schools from 49 to 35, which is a 28% reduction. This Project may also qualify as a green community program.

### **3. Project Information**

*Provide detailed information on the proposed project according to the descriptions below. Proposers shall attach a brief narrative (up to one page) for each section to this proposal. Please use a separate page for each of the four criteria. OEP expects to receive more proposals for funding than for which funding exists. It should be understood that this process is competitive and those projects deemed to offer superior benefits to Tennessee will be selected to receive a QECCB allocation.*

Project Feasibility, Project Impact, Project Strategy, and Project Readiness are addressed as follows in separate pages as requested.

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### a. Project Feasibility

Please describe the scope of the project as it relates to:

- The project budget (including cost of land, buildings, equipment replaced or upgraded, and whether any amount has been spent at time of application), as well as information about the cost of issuance, project management and professional services expenses, and other miscellaneous costs;
- The technology used or upgraded, including factors determining use of this technology over competing or existing technologies; and
- The issuing party's ability to conduct the bond issuance, as well as the ability of the project to comply with applicable federal and state requirements as an eligible use of funds.

As mentioned previously in this application, the Project is the first phase of at least three phases of ECMs that the County anticipates executing across the facilities of WCS. WCS conducted a competitive RFQ process for energy firms to propose an energy performance contract program to address further energy conservation efforts for WCS. This Project is the second ESCO effort for WCS, the first being with Chevron Energy Solutions entered into in 1999. That program achieved an annual energy savings of \$800,000, which continues to this day as WCS has maintained those systems and incorporated the lessons learned from that program into the new schools it has constructed in the past 10 years. The Chevron ESCO enabled WCS to reduce its overall Energy Usage Index (“EUI”) from 80 kBtu/SF/Yr to 49. The current Project with Trane is geared to reduce that EUI further to the mid-30s.

Trane has conducted an Investment Grade Audit (“IGA”) on the fourteen schools selected for this first phase. The results of that IGA have been vetted to eliminate ECMs that do not cash flow within the financing term due to their low return-on-investment (“ROI”). The Project submitted in this application balances the physical needs of the facilities with the need to execute a program of ECMs that will cash flow within the terms of available financing and guaranteed savings. Each component of the Project consists of either replacements or upgrades to existing systems in WCS buildings.

(1) Project Budget: Trane has proposed a program of \$9,947,264 in construction costs to upgrade or replace existing identified systems. The Project is predicted to qualify for \$173,071 of TVA Utility Incentives, thus reducing the overall financing needed. Trane will manage the execution of the ECMs acting as the General Contractor, utilizing appropriately licensed and experienced installers. Trane will earn a management fee included in the program costs that will recover the cost of this execution as well as the year of engineering and field effort that has gone into the IGA and the guarantee proposal. The cost and guaranteed savings for each ECM is provided in Appendix C, which also shows the Trane fees to include the cost of the Measurement & Validation (“M&V”) effort that accompanies the guarantee. WCS has a fully trained Energy Manager who is a *Certified Energy Manager*, and is also going through TDEC's *Professional Energy Manager* certification course offerings to further enhance his ability to monitor the M&V process.

Costs of issuance of the QECBs are estimated as follows:

- Financial Advisor: \$35,000
- Bond Counsel: \$25,000
- Rating Agency: \$15,000
- Registration and Paying Agent/Filing Agent: \$1,000
- Printing/Miscellaneous Costs: \$4,000
- Underwriter's Discount: TBD, estimated at \$5.00 / \$1,000

(2) Technology Used: BAS Controls ECMs will upgrade and expand WCS's current but old BAS controls to newer systems that provide more control and improved energy savings. Maintaining and improving WCS's BAS controls is one of the biggest keys to WCS's ability to control its energy usage. The IGA identified some significant guaranteed savings opportunities in upgrading WCS's BAS controls from a *Novar*-based BAS to an *Alerton*-based BAS. This is being done after an extensive look at the status of WCS's current *Novar* system and the challenges it has been facing in maintaining and expanding it to newer HVAC systems such as various Variable Refrigerant Flow (“VRF”) systems, as well as improved functionality and coverage of WCS systems.

Conversion to LED lighting technology is one of the main drivers to this program. WCS has looked at a number of products and has decided on the level of lumens and controls that best support the learning environment. As a result, WCS is looking at products with 10-year material warranties as well as some degree of labor-warranty. The option to program each fixture to different lumen outputs, as may be desired in a classroom, is part of the analysis WCS has undertaken in selecting fixtures.

The vending machine controls (Vending Misers) will reduce energy consumption in unoccupied hours not only in the lighting of the machines, but in setting back the compressors to operate less. The system is driven by occupancy sensing and motion detectors. The various types of HVAC system upgrades are all geared toward improving the efficiency of those systems to better manage the energy consumed.

(3) Bond Issuance: The County is authorized to issue its general obligation bonds for school projects, including the Project, pursuant to Section 49-3-1001, *et seq.*, Tennessee Code Annotated (the “Act”). In accordance with the requirements of the Act, the County plans to issue its general obligation bonds to fund the capital costs of the Project and to pay costs incident to the sale and issuance of the bonds. The applicable professionals, including Bond Counsel, have determined that the Project will comply with applicable federal and state requirements as an eligible use of funds. The QECBs will be issued in a manner consistent with applicable rules and regulations.

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b. **Project Impact:** This approximately \$10 million Project will retain and potentially create labor jobs as it will utilize existing vendors to do the work utilizing existing manufacturers, with oversight and project management being provided by existing engineering firms.

Energy savings is the key impact of this program in that it has identified ECM opportunities that, once installed, will provide significant energy savings across WCS. More exact, it will produce over \$11 million of guaranteed energy savings over the term of the financing and will continue to provide savings for the lifetime of the systems. Due to the conservative nature of the guaranteed savings, WCS expects to realize more savings than guaranteed, thus, further increasing the total savings enjoyed from this investment. It is WCS's intention to reinvest these additional savings in more ECMs as available.

These energy savings also result in positive environmental impacts. Trane predicts that the projected energy reductions will provide a reduction of over 9,000,000 pounds/year of greenhouse gas emissions. This is calculated, using EPA methods, to represent the removal of over 800 vehicles from the road per year, or planting over 100,000 trees per year, or recycling over 1,500 tons of waste per year instead of sending it to a landfill.

The vetting of ECMs has produced a program that enjoys a net simple payback of 16.3 years. This is the combined impact of ECMs with Simple Paybacks as low as 1.82 years and others as high as 45.31 years. The net result is a cash-neutral program that will provide long-term sustainable savings, while upgrading equipment that is critical to WCS's ability to manage the energy usage over the long-term. It does this while using guaranteed savings to pay for all of the debt service out of WCS's existing utility budget level.

Given the ever-increasing utility rate increases and the budgeting pressures to reduce and control spending, this program is a beneficial solution for the County's public schools. Sustainable energy/utility savings fund the improvements and continue to provide positive cash flow throughout the project and after the financing term ends.

The success of the program will be measured and verified using the International Performance Measurement & Validation Protocol ("IPMVP"). Type C M&V procedures will be used for most of the ECMs. WCS's Certified Energy Manager will provide additional oversight on this M&V process. This information will be available through WCS's use of the EPA's *Portfolio Manager* tool. All of WCS schools are currently in Portfolio Manager, thus that data is, and will be, available to TDEC/EPA for any oversight or reporting functions that may be necessary.

Projected outcomes from each individual ECM is shown in the data provided in Appendix C. The projected outcome from each ECM reflects a long-term benefit from this investment. Thus, they represent a significant benefit to the County taxpayers through the avoidance of additional tax revenues needed to otherwise pay for these improvements.

Finally, the Trane program includes energy awareness outreach activities at WCS schools to enhance WCS's already robust curriculum objectives. These proven Trane programs attempt to engage students in the process of reducing energy consumption in the buildings.

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c. **Project Strategy:** The Project is aligned with TDEC's and OEP's objectives in that the ECMs are targeting reductions in energy consumption to reduce overall energy demands and to improve the quality of Tennessee's air and water resources by continuing to reduce WCS's carbon footprint. WCS's overall energy program objectives also include investments in renewable energy opportunities that are not part of this first phase of the ESCO initiative, but that the County hopes to include in a future phase. Through WCS's 5-year participation in TVA's Demand Response program, coupled with the \$173,071 of rebates anticipated from TVA on the ECMs proposed in this application, the County believes WCS's energy goals are also aligned with TVA's objectives of reducing electrical demand. There has been positive community support in the County for the Project.

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d. **Project Readiness:** WCS and Trane are prepared to commence work on these ECMs as soon as financing is provided. Trane has presented “shovel ready” projects based on negotiations they have already had with fully licensed and experienced vendors and sub-contractors. Construction will commence as soon as QECB financing becomes available. The County anticipates all work on these ECMs to be completed with 12-months after commencement of work.

There are no ordinance or permit requirements associated with executing this program since all of the ECMs are upgrades or improvements to existing systems in WCS facilities.

The County has engaged Stephens Inc. to serve as its Financial Advisor and Bass, Berry & Sims PLC to serve as its Bond Counsel on this QECB issue. The County has previously adopted a reimbursement resolution indicating its intent to reimburse itself, if beneficial for the County, for certain expenditures from QECB proceeds. Upon the granting of the County's request herein, the County intends to adopt initial and detailed bond resolutions authorizing the issuance of QECBs at its July County Commission meeting. The County will then proceed to apply for a credit rating on the QECBs and anticipates selling the QECBs at competitive sale in July 2017. Closing of the QECBs is expected to occur approximately two weeks following the sale.

If this QECB request is fully granted, then there will be no additional Project funding needed to execute this phase of projects. Energy savings can be achieved with the requested financing and anticipated Project.

Appendix C provides all the project information and data for each project at each school, including cash flow spread sheets. Appendix D provides a project description matrix to show the types of projects being proposed for each of the fourteen schools, and projects that were considered but not included in the program being proposed. Appendix E provides additional specifics of the program in the form of Trane's Executive Summary to the Williamson County Board of Education. This presentation provides a strong overview of the process that has brought the County to this point, and gives insight into the level of preparation that has already been done to make this program “shovel ready”.

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**4. Supporting Materials – Attachments Required**

- a. A copy of the County's QECB reimbursement resolution adopted on May 8, 2017 is attached hereto as Appendix F.
- b. The proposed issuer is the same entity requesting allocation.
- c. A written letter from legal counsel regarding the eligibility of the Project is attached hereto as Appendix F.

**5. Bond Counsel Information**

Name of Attorney and Firm: Jeffrey Oldham and Lillian Blackshear, Bass, Berry & Sims PLC

Address, City, State, and Zip Code: 150 Third Avenue South, Ste. 2800, Nashville, TN 37201

Telephone & Fax No. and E-Mail: See below.

Jeff Oldham  
615-742-7704 phone • 615-742-2817 fax  
joldham@bassberry.com

Lillian Blackshear  
615-742-7902 phone • 615-248-4245 fax  
LBlackshear@bassberry.com

Any award of QECB allocation to an eligible entity shall not be construed as or relied upon as a statement or decision that any particular project in fact complies with applicable laws, rules, regulations and requirements. To the contrary, by executing this form, the Proposer hereby certifies that (i) the stated project is legally eligible to be funded by QECBs, and (ii) that Proposer will ensure compliance with all applicable laws, rules, regulations and requirements with respect to any QECBs issued and shall ensure any relevant reports are timely made. Additionally, the Proposer hereby releases and agrees to hold completely harmless the Tennessee Local Development Authority, the Tennessee Department of Environment and Conservation, the State of Tennessee, and any employees of any of the foregoing, from any and all matters relating to any QECB capacity awarded or not awarded to the Proposer of QECBs issued or not issued.

The undersigned, on behalf of the Proposer set forth below, hereby certifies that it is authorized by the eligible entity to make the request and certifications contained herein of the eligible entity. I further certify that the information contained in the attached proposal is true and accurate to the best of my knowledge.

\_\_\_\_\_  
Signature of Proposer's Senior Official

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Address

\_\_\_\_\_  
Phone Number of Authorized Official

\_\_\_\_\_  
Date

## **Appendix A: Proposer Checklist**

The following documents are included in this application:

- QECB Proposal
- All ten parts of Section Two, General Information
- Complete, detailed response to all prompts in Section Three, Project Information (with attachments)
- Information about Bond Counsel
- Appendix B: WCS Sustainability Goals and Mission
- Appendix C: Project Information and Data
- Appendix D: Project Description Matrix
- Appendix E: Phase -1 Executive Summary from Trane
- Appendix F: QECB Reimbursement Resolution & Letter from Legal Counsel

## Appendix B: WCS Sustainability Goals and Missions

Williamson County Schools' energy goals are guided by its Board of Education's policy 3.2016, which was revised in July 2015, and reads as follows:

*“It is the policy of Williamson County Schools to ensure that every effort is made to conserve energy and natural resources while exercising sound financial management. To minimize the impact increased energy costs have on the district's operating budget, energy management efforts are to be implemented district-wide without infringement upon the educational mission of Williamson County Schools. Maintenance of the learning environment shall always take precedence over energy conservation measures.*

*The judicious use of the various energy systems of each facility will be the joint responsibility of the Principal and the Maintenance Director to ensure that an efficient energy posture is maintained on a daily basis. It shall be the responsibility of all employees and students to actively participate in conservation efforts.*

*Accurate records of energy consumption and the cost of energy will be maintained by the district's Energy Manager. The Principal will provide leadership and support for energy management and conservation. All operations of facilities will be governed by established administrative rules and guidelines designed to implement the Board's intent to manage and conserve energy resources.*

*Williamson County Schools will comply with the following:*

- 1. The most recent adoption of ASHRAE Standard 90.1 (the minimum standard for energy efficiency);*
- 2. The most recent version of ASHRAE Standard 62.1 (the minimum standard for indoor air quality); and*
- 3. The most recent version of ASHRAE Standard 55 (the minimum standard for human comfort).*

*Legal Reference: T.C.A. 49-17-101”*

WCS's strategy to conserve energy while minimizing the impact on the budget and the educational mission is to focus on the following key efforts:

- A. Energy Savings Performance Contracts, such as the one WCS entered into with Chevron Energy Solutions in 1999, and the current one anticipated to be entered into with Trane, to modernize and upgrade existing systems
- B. Capital Investments that enable WCS to achieve energy consumption reductions
  - Energy Management Systems to Control Consumption (BAS systems)
  - Energy Efficient Equipment
- C. Behavioral Discipline through site-based learning tools for increasing educational awareness and positive energy efficiency behavior change for students, teachers and staff.
- D. Use energy efficient design standards for new schools

As mentioned in the body of the application, the above efforts have reduced WCS' s average EUI from 80 kBtu/SF/Yr to 49 in the past 12 years. WCS intends to reduce that further to the mid-30s with the proposed program of ECMs.

## **Appendix C: Project Information and Data**

**Trane Partnership for Infrastructure Improvement & Operational Excellence**  
**Program Cash Flow Analysis**

**Williamson County Schools Phase I**

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
<b>Program Savings</b>																					
Energy Savings	\$ 371,087	\$ 382,220	\$ 393,686	\$ 405,497	\$ 417,662	\$ 430,192	\$ 443,097	\$ 456,390	\$ 470,082	\$ 484,184	\$ 498,710	\$ 513,671	\$ 529,081	\$ 544,954	\$ 561,302	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,901,815
Operational Savings		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Cost Avoidance (annual cash contribution)	\$ -																				\$ -
Construction Period Savings (12 Months)	\$ 185,543.50																				\$ 185,544
<b>Annual Program Savings</b>	<b>\$ 556,631</b>	<b>\$ 382,220</b>	<b>\$ 393,686</b>	<b>\$ 405,497</b>	<b>\$ 417,662</b>	<b>\$ 430,192</b>	<b>\$ 443,097</b>	<b>\$ 456,390</b>	<b>\$ 470,082</b>	<b>\$ 484,184</b>	<b>\$ 498,710</b>	<b>\$ 513,671</b>	<b>\$ 529,081</b>	<b>\$ 544,954</b>	<b>\$ 561,302</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 7,087,359</b>
<b>Program Cumulative Savings</b>	<b>\$ 556,631</b>	<b>\$ 938,850</b>	<b>\$ 1,332,536</b>	<b>\$ 1,738,033</b>	<b>\$ 2,155,695</b>	<b>\$ 2,585,886</b>	<b>\$ 3,028,984</b>	<b>\$ 3,485,374</b>	<b>\$ 3,955,456</b>	<b>\$ 4,439,640</b>	<b>\$ 4,938,350</b>	<b>\$ 5,452,021</b>	<b>\$ 5,981,103</b>	<b>\$ 6,526,056</b>	<b>\$ 7,087,359</b>	<b>\$ 7,087,359</b>	<b>\$ 7,087,359</b>	<b>\$ 7,087,359</b>	<b>\$ 7,087,359</b>	<b>\$ 7,087,359</b>	<b>\$ 7,087,359</b>
<b>Program Costs</b>																					
Principal & Interest	\$ 367,518	\$ 367,518	\$ 367,518	\$ 367,518	\$ 367,518	\$ 367,518	\$ 367,518	\$ 367,518	\$ 367,518	\$ 367,518	\$ 367,518	\$ 367,518	\$ 367,518	\$ 367,518	\$ 367,518	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,512,775
Annual M&V/CEM Support	\$ 31,042	\$ 31,973	\$ 32,933	\$ 33,921	\$ 34,938	\$ 35,986	\$ 37,066	\$ 38,178	\$ 39,323	\$ 40,503	\$ 41,718	\$ 42,970	\$ 44,259	\$ 45,586	\$ 46,954	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 577,350
Annual Service Support	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Annual Program Costs</b>	<b>\$ 398,560</b>	<b>\$ 399,492</b>	<b>\$ 400,451</b>	<b>\$ 401,439</b>	<b>\$ 402,456</b>	<b>\$ 403,505</b>	<b>\$ 404,584</b>	<b>\$ 405,696</b>	<b>\$ 406,842</b>	<b>\$ 408,021</b>	<b>\$ 409,236</b>	<b>\$ 410,488</b>	<b>\$ 411,777</b>	<b>\$ 413,105</b>	<b>\$ 414,472</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 6,090,124</b>
<b>Program Cumulative Costs</b>	<b>\$ 398,560</b>	<b>\$ 798,052</b>	<b>\$ 1,198,503</b>	<b>\$ 1,599,942</b>	<b>\$ 2,002,398</b>	<b>\$ 2,405,903</b>	<b>\$ 2,810,487</b>	<b>\$ 3,216,183</b>	<b>\$ 3,623,025</b>	<b>\$ 4,031,046</b>	<b>\$ 4,440,283</b>	<b>\$ 4,850,770</b>	<b>\$ 5,262,547</b>	<b>\$ 5,675,652</b>	<b>\$ 6,090,124</b>	<b>\$ 6,090,124</b>	<b>\$ 6,090,124</b>	<b>\$ 6,090,124</b>	<b>\$ 6,090,124</b>	<b>\$ 6,090,124</b>	<b>\$ 6,090,124</b>
<b>Cash Flow</b>																					
<b>Annual Net Cash Flow</b>	<b>\$ 158,070</b>	<b>\$ (17,272)</b>	<b>\$ (6,765)</b>	<b>\$ 4,058</b>	<b>\$ 15,205</b>	<b>\$ 26,687</b>	<b>\$ 38,513</b>	<b>\$ 50,694</b>	<b>\$ 63,240</b>	<b>\$ 76,163</b>	<b>\$ 89,474</b>	<b>\$ 103,183</b>	<b>\$ 117,304</b>	<b>\$ 131,849</b>	<b>\$ 146,830</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 997,234</b>
<b>Cumulative Net Cash Flow</b>	<b>\$ 158,070</b>	<b>\$ 140,798</b>	<b>\$ 134,033</b>	<b>\$ 138,091</b>	<b>\$ 153,296</b>	<b>\$ 179,983</b>	<b>\$ 218,496</b>	<b>\$ 269,190</b>	<b>\$ 332,431</b>	<b>\$ 408,594</b>	<b>\$ 498,067</b>	<b>\$ 601,251</b>	<b>\$ 718,555</b>	<b>\$ 850,404</b>	<b>\$ 997,234</b>	<b>\$ 997,234</b>	<b>\$ 997,234</b>	<b>\$ 997,234</b>	<b>\$ 997,234</b>	<b>\$ 997,234</b>	<b>\$ 997,234</b>

Program Financial Summary	
Program Construction Cost	\$ 5,217,379
Estimated TVA Utility Rebates	\$ 100,117.00
Customer Down Payment	\$ -
Loan/Lease Amount	\$ 5,117,262
Year 1 - Program Savings	\$ 371,087
Year 1 - Simple Payback (years)	14.1
Term - Program Costs	\$ 6,090,124
Term - Program Savings	\$ 7,087,359
Term - Cumulative Payback Ratio	0.86
Annual Interest Rate	1.00%
Loan/Lease Term (years)	15
Payments per Year	12
Construction Interest Considered (yes/no)	no
Total Interest Payments	\$ 395,513
Annual Energy Cost Escalation Factor	3.0%
Annual Operational Cost Escalation Factor	3.0%
Annual Service Program Cost Escalation Factor	3.0%

**Trane Partnership for Infrastructure Improvement & Operational Excellence**  
**Program Cash Flow Analysis**

**Williamson County Schools Phase I**

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
<b>Program Savings</b>																					
Energy Savings	\$ 240,045	\$ 247,246	\$ 254,664	\$ 262,304	\$ 270,173	\$ 278,278	\$ 286,626	\$ 295,225	\$ 304,082	\$ 313,204	\$ 322,600	\$ 332,278	\$ 342,247	\$ 352,514	\$ 363,090	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,464,576
Operational Savings																					
Capital Cost Avoidance (annual cash contribution)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Construction Period Savings (12 Months)	\$ 120,022.50																				\$ 120,023
<b>Annual Program Savings</b>	<b>\$ 360,068</b>	<b>\$ 247,246</b>	<b>\$ 254,664</b>	<b>\$ 262,304</b>	<b>\$ 270,173</b>	<b>\$ 278,278</b>	<b>\$ 286,626</b>	<b>\$ 295,225</b>	<b>\$ 304,082</b>	<b>\$ 313,204</b>	<b>\$ 322,600</b>	<b>\$ 332,278</b>	<b>\$ 342,247</b>	<b>\$ 352,514</b>	<b>\$ 363,090</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 4,584,599</b>
<b>Program Cumulative Savings</b>	<b>\$ 360,068</b>	<b>\$ 607,314</b>	<b>\$ 861,978</b>	<b>\$ 1,124,281</b>	<b>\$ 1,394,454</b>	<b>\$ 1,672,732</b>	<b>\$ 1,959,358</b>	<b>\$ 2,254,583</b>	<b>\$ 2,558,665</b>	<b>\$ 2,871,869</b>	<b>\$ 3,194,470</b>	<b>\$ 3,526,748</b>	<b>\$ 3,868,995</b>	<b>\$ 4,221,509</b>	<b>\$ 4,584,599</b>	<b>\$ 4,584,599</b>	<b>\$ 4,584,599</b>	<b>\$ 4,584,599</b>	<b>\$ 4,584,599</b>	<b>\$ 4,584,599</b>	<b>\$ 4,584,599</b>
<b>Program Costs</b>																					
Principal & Interest	\$ 334,458	\$ 334,458	\$ 334,458	\$ 334,458	\$ 334,458	\$ 334,458	\$ 334,458	\$ 334,458	\$ 334,458	\$ 334,458	\$ 334,458	\$ 334,458	\$ 334,458	\$ 334,458	\$ 334,458	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,016,865
Annual M&V/CEM Support	\$ 25,916	\$ 26,693	\$ 27,494	\$ 28,319	\$ 29,169	\$ 30,044	\$ 30,945	\$ 31,873	\$ 32,829	\$ 33,814	\$ 34,829	\$ 35,874	\$ 36,950	\$ 38,058	\$ 39,200	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 482,007
Annual Service Support	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Annual Program Costs</b>	<b>\$ 360,374</b>	<b>\$ 361,151</b>	<b>\$ 361,952</b>	<b>\$ 362,777</b>	<b>\$ 363,626</b>	<b>\$ 364,501</b>	<b>\$ 365,403</b>	<b>\$ 366,331</b>	<b>\$ 367,287</b>	<b>\$ 368,272</b>	<b>\$ 369,286</b>	<b>\$ 370,331</b>	<b>\$ 371,408</b>	<b>\$ 372,516</b>	<b>\$ 373,658</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 5,498,872</b>
<b>Program Cumulative Costs</b>	<b>\$ 360,374</b>	<b>\$ 721,525</b>	<b>\$ 1,083,476</b>	<b>\$ 1,446,253</b>	<b>\$ 1,809,879</b>	<b>\$ 2,174,381</b>	<b>\$ 2,539,783</b>	<b>\$ 2,906,114</b>	<b>\$ 3,273,401</b>	<b>\$ 3,641,673</b>	<b>\$ 4,010,960</b>	<b>\$ 4,381,291</b>	<b>\$ 4,752,698</b>	<b>\$ 5,125,214</b>	<b>\$ 5,498,872</b>	<b>\$ 5,498,872</b>	<b>\$ 5,498,872</b>	<b>\$ 5,498,872</b>	<b>\$ 5,498,872</b>	<b>\$ 5,498,872</b>	<b>\$ 5,498,872</b>
<b>Cash Flow</b>																					
<b>Annual Net Cash Flow</b>	<b>\$ (306)</b>	<b>\$ (113,905)</b>	<b>\$ (107,288)</b>	<b>\$ (100,473)</b>	<b>\$ (93,453)</b>	<b>\$ (86,223)</b>	<b>\$ (78,776)</b>	<b>\$ (71,106)</b>	<b>\$ (63,205)</b>	<b>\$ (55,068)</b>	<b>\$ (46,686)</b>	<b>\$ (38,053)</b>	<b>\$ (29,161)</b>	<b>\$ (20,002)</b>	<b>\$ (10,568)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ (914,273)</b>
<b>Cumulative Net Cash Flow</b>	<b>\$ (306)</b>	<b>\$ (114,211)</b>	<b>\$ (221,499)</b>	<b>\$ (321,972)</b>	<b>\$ (415,425)</b>	<b>\$ (501,649)</b>	<b>\$ (580,425)</b>	<b>\$ (651,531)</b>	<b>\$ (714,736)</b>	<b>\$ (769,804)</b>	<b>\$ (816,490)</b>	<b>\$ (854,543)</b>	<b>\$ (883,703)</b>	<b>\$ (903,705)</b>	<b>\$ (914,273)</b>	<b>\$ (914,273)</b>	<b>\$ (914,273)</b>	<b>\$ (914,273)</b>	<b>\$ (914,273)</b>	<b>\$ (914,273)</b>	<b>\$ (914,273)</b>

Program Financial Summary	
Program Construction Cost	\$ 4,729,885
Estimated TVA Utility Rebates	\$ 72,954.00
Customer Down Payment	\$ -
Loan/Lease Amount	\$ 4,656,931
Year 1 - Program Savings	\$ 240,045
Year 1 - Simple Payback (years)	19.7
Term - Program Costs	\$ 5,498,872
Term - Program Savings	\$ 4,584,599
Term - Cumulative Payback Ratio	1.20
Annual Interest Rate	1.00%
Loan/Lease Term (years)	15
Payments per Year	12
Construction Interest Considered (yes/no)	no
Total Interest Payments	\$ 359,934
Annual Energy Cost Escalation Factor	3.0%
Annual Operational Cost Escalation Factor	3.0%
Annual Service Program Cost Escalation Factor	3.0%

**Trane Partnership for Infrastructure Improvement & Operational Excellence**  
**Program Cash Flow Analysis**

**Williamson County Schools Phase I**

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
<b>Program Savings</b>																					
Energy Savings	\$ 611,136	\$ 629,470	\$ 648,354	\$ 667,805	\$ 687,839	\$ 708,474	\$ 729,728	\$ 751,620	\$ 774,169	\$ 797,394	\$ 821,316	\$ 845,955	\$ 871,334	\$ 897,474	\$ 924,398	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 11,366,466
Operational Savings		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Cost Avoidance (annual cash contribution)	\$ -																				\$ -
Construction Period Savings (12 Months)	\$ 305,568.00																				\$ 305,568
<b>Annual Program Savings</b>	<b>\$ 916,704</b>	<b>\$ 629,470</b>	<b>\$ 648,354</b>	<b>\$ 667,805</b>	<b>\$ 687,839</b>	<b>\$ 708,474</b>	<b>\$ 729,728</b>	<b>\$ 751,620</b>	<b>\$ 774,169</b>	<b>\$ 797,394</b>	<b>\$ 821,316</b>	<b>\$ 845,955</b>	<b>\$ 871,334</b>	<b>\$ 897,474</b>	<b>\$ 924,398</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 11,672,034</b>
<b>Program Cumulative Savings</b>	<b>\$ 916,704</b>	<b>\$ 1,546,174</b>	<b>\$ 2,194,528</b>	<b>\$ 2,862,333</b>	<b>\$ 3,550,172</b>	<b>\$ 4,258,646</b>	<b>\$ 4,988,374</b>	<b>\$ 5,739,995</b>	<b>\$ 6,514,163</b>	<b>\$ 7,311,557</b>	<b>\$ 8,132,873</b>	<b>\$ 8,978,828</b>	<b>\$ 9,850,162</b>	<b>\$ 10,747,636</b>	<b>\$ 11,672,034</b>	<b>\$ 11,672,034</b>	<b>\$ 11,672,034</b>	<b>\$ 11,672,034</b>	<b>\$ 11,672,034</b>	<b>\$ 11,672,034</b>	<b>\$ 11,672,034</b>
<b>Program Costs</b>																					
Principal & Interest	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,529,641
Annual M&V/CEM Support	\$ 56,958	\$ 58,667	\$ 60,427	\$ 62,240	\$ 64,107	\$ 66,030	\$ 68,011	\$ 70,051	\$ 72,153	\$ 74,317	\$ 76,547	\$ 78,843	\$ 81,208	\$ 83,645	\$ 86,154	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,059,357
Annual Service Support	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Annual Program Costs</b>	<b>\$ 758,934</b>	<b>\$ 760,643</b>	<b>\$ 762,403</b>	<b>\$ 764,216</b>	<b>\$ 766,083</b>	<b>\$ 768,006</b>	<b>\$ 769,987</b>	<b>\$ 772,027</b>	<b>\$ 774,129</b>	<b>\$ 776,293</b>	<b>\$ 778,523</b>	<b>\$ 780,819</b>	<b>\$ 783,185</b>	<b>\$ 785,621</b>	<b>\$ 788,130</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 11,588,998</b>
<b>Program Cumulative Costs</b>	<b>\$ 758,934</b>	<b>\$ 1,519,577</b>	<b>\$ 2,281,980</b>	<b>\$ 3,046,195</b>	<b>\$ 3,812,278</b>	<b>\$ 4,580,284</b>	<b>\$ 5,350,271</b>	<b>\$ 6,122,298</b>	<b>\$ 6,896,427</b>	<b>\$ 7,672,720</b>	<b>\$ 8,451,243</b>	<b>\$ 9,232,062</b>	<b>\$ 10,015,247</b>	<b>\$ 10,800,867</b>	<b>\$ 11,588,998</b>	<b>\$ 11,588,998</b>	<b>\$ 11,588,998</b>	<b>\$ 11,588,998</b>	<b>\$ 11,588,998</b>	<b>\$ 11,588,998</b>	<b>\$ 11,588,998</b>
<b>Cash Flow</b>																					
<b>Annual Net Cash Flow</b>	<b>\$ 157,770</b>	<b>\$ (131,173)</b>	<b>\$ (114,049)</b>	<b>\$ (96,411)</b>	<b>\$ (78,244)</b>	<b>\$ (59,532)</b>	<b>\$ (40,259)</b>	<b>\$ (20,407)</b>	<b>\$ 40</b>	<b>\$ 21,101</b>	<b>\$ 42,793</b>	<b>\$ 65,136</b>	<b>\$ 88,149</b>	<b>\$ 111,853</b>	<b>\$ 136,268</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 83,036</b>
<b>Cumulative Net Cash Flow</b>	<b>\$ 157,770</b>	<b>\$ 26,597</b>	<b>\$ (87,451)</b>	<b>\$ (183,862)</b>	<b>\$ (262,106)</b>	<b>\$ (321,638)</b>	<b>\$ (361,896)</b>	<b>\$ (382,303)</b>	<b>\$ (382,263)</b>	<b>\$ (361,163)</b>	<b>\$ (318,370)</b>	<b>\$ (253,234)</b>	<b>\$ (165,085)</b>	<b>\$ (53,232)</b>	<b>\$ 83,036</b>	<b>\$ 83,036</b>	<b>\$ 83,036</b>	<b>\$ 83,036</b>	<b>\$ 83,036</b>	<b>\$ 83,036</b>	<b>\$ 83,036</b>

Program Financial Summary	
Program Construction Cost	\$ 9,947,264
Estimated TVA Utility Rebates	\$ 173,071
Customer Down Payment	\$ -
Loan/Lease Amount	\$ 9,774,193
Year 1 - Program Savings	\$ 611,136
Year 1 - Simple Payback (years)	16.3
Term - Program Costs	\$ 11,588,998
Term - Program Savings	\$ 11,672,034
Term - Cumulative Payback Ratio	0.99
Annual Interest Rate	1.00%
Loan/Lease Term (years)	15
Payments per Year	12
Construction Interest Considered (yes/no)	no
Total Interest Payments	\$ 755,448
Annual Energy Cost Escalation Factor	3.0%
Annual Operational Cost Escalation Factor	3.0%
Annual Service Program Cost Escalation Factor	3.0%



## Appendix D: Project Description Matrix

Williamson County Schools Phase 1 - ECM Matrix																			Appendix D		
Facility Name	TLED Interior Lighting Upgrades	LED Exterior Lighting Upgrades	Portables/Fieldhouses TLED Lighting Upgrad-	Network BAS Controls	Network BAS Upgrades	Inter-Net Programmable Thermostat	Demand Control Ventilation	Ventilation Controls	HVAC Upgrades	Environmental HVAC Upgrades	WSHP Unit Water Flow T&B	WSHP Loop Pump VFDs	Kitchen Exh Hood&MUA Fan VFDs	Boiler Replacement	Cooling Tower Replacement	Building Weatherization Upgrades	Vend & Snack Misers	Cooling Tower Sub metering	Water Conservation Upgrades		
Bethesda Elementary	X	X (1)		X (2)				X(6)	X (9)	X (20)	X (7)	X (11)				X (14)	3		X		
Brentwood High	X	X	X	X (2)		X (5)	X (5A)				X (7,8)	X (11)	X (16)			X (14)	3		X		
Centennial High	X	X	X	X (2)			X (5A)		X (9)		X (7,8)	X (11)	X (16)	X (12)		X (14)	3	X	X		
Chapman Retreat Elementary	X	X (1)		X (2)				X(6)	X (9)		X (7,8)	X (11)	X (16)				3	X	X		
College Grove Elementary	X	X			X (4)				X (9)		X (7)	X (11)	X (16)			X (14)	3		X		
Fairview High	X	X	X	X (2)		X (5)	X (5A)			X (19)	X (7,8)	X (11)				X (14)	3		X		
Fairview Middle	X	X		X (2)			X (5A)		X (9)		X (7)	X (11)		X (12)		X (14)	3		X		
Franklin High	X	X	X	X (2)		X (5)	X (5A)			X (18)	X (7,8)	X (11)	X (16)	X (12)	X (17)	X (14)	3	X	X		
Grassland Middle	X	X (1)		X (2)			X (5A)		X (9)		X (7)	X (11)		X (12)		X (14)	3		X		
Heritage Middle	X	X		X (2)			X (5A)		X (22)		X (7,8)	X (11)	X (16)			X (14)	3		X		
Pearre Creek Elementary	X	X		X (2)			X (5A)										3		X		
Renaissance High				X (3)					X (10)												
Scales Elementary	X	X		X (3)			X (5A)		X (10)							X (14)	3		X		
Westwood Elementary	X	X		X (2)							X (7)	X (11)				X (14)	3		X		

**Notes:**

- 1 LED lighting and increasing light levels above current lighting
- 2 Replace the existing control with Allerton Network Control System
- 3 Install Alleton Network Control System with HVAC replacment
- 4 Install humity sensors, circulation pumps and comission system
- 5 Honeywell inter-net programmable system
- 5A Gain control of dampers install Co2 sensors and modulate dampers
- 6 Provide 2-position motorized dampers on existing OA intakes
- 7 Perform T&B at units to improve plant efficient
- 8 Install new circuit setter flow control valves @ WSHPs w/ a capacity of 20 tons or larger
- 9 Replace existing old and poorly operating equipment
- 10 Replace existing 4-pipe system and VAV boxes with WSHP system. Install new DOAS units

- 11 Install solenoid valves @ WSHPs and differential pressure sensors to control pump with VFDs and preform T&B at pump(s)
- 12 Install new high efficiency boiler(s) to replace existing
- 14 Install door sweeps and weather-stripping
- 15 Not Used
- 16 Install VFDs on kitchen hood fans to control fan speed based on usage of cooking equipment
- 17 Replace the existing B.A.C. cooling tower with a new Evapco cooling tower
- 18 Replace the existing undersized ductless split system in the server room with a larger ductless split system
- 19 Replace the existing portable cooler with a new ductless split system
- 20 Make adjustments/modification to existing and add RTU to gym
- 21 Being done by WCS Now
- 22 Replace two gym units

**Appendix E: Phase -1 Executive Summary from Trane**



# **Williamson County Schools**

**Guaranteed Energy Efficiency  
Improvements and  
Facility Upgrades**



***TRANE***<sup>®</sup>

**April 13, 2017, Updated June 5, 2017**

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Trane  
601 Grassmere Park Drive, Suite 10  
Nashville, Tennessee 37211  
(615) 242-0311  
[www.trane.com/nashville](http://www.trane.com/nashville)

April 13, 2017

Williamson County Board of Education  
1320 West Main Street Suite 202  
Franklin TN 37064

Subject: **Energy Conservation and Infrastructure Improvement Program**

Dear School Board Members,

Trane is pleased to submit the results of our Investment Grade Audit (IGA) of Williamson County Schools, Phase I. In the following pages, we have summarized the findings of the IGA and outlined a self-funding energy conservation and infrastructure improvement program for the fourteen (14) Williamson County School sites in Phase I, as listed in the attached sections.

Working with Schools' Leadership and Maintenance, we have completed the Investment Grade Audit and developed a program that will significantly improve the *Learning Environment* in Williamson County Schools, paying for itself with guaranteed utility savings.

The benefits of this program are too numerous to mention in this letter. Please take some time to review the enclosed summary documents for a clearer picture. Additionally, please do not hesitate to contact us with any questions you may have. We can be reached at 615-717-5799 / [randy.mauldin@trane.com](mailto:randy.mauldin@trane.com) or 865-755-5869 / [oanevader@trane.com](mailto:oanevader@trane.com). Dr. Mike Looney and Mark Samuels of Williamson County Schools can answer questions about the program, as well.

Trane is fortunate to be the Energy Services Partner of choice for Williamson County Schools. Thank you for the confidence that you place in Trane.

Sincerely,

A handwritten signature in black ink, appearing to read "Randy Mauldin".

Randy Mauldin  
Business Development Manager

A handwritten signature in black ink, appearing to read "Owen M. Nevader".

Owen M. Nevader, LEED™ AP  
District Solutions Leader

Trane U.S., Inc.





Nashville Commercial Office  
601 Grassmere Park Drive, Suite 10  
Nashville, Tennessee 37211  
Tel (615) 342-0311  
www.trane.com/nashville

April 13, 2017, (Updated June 5, 2017 for QECB Funding & True-up)

Dr. Mike Looney, Director of Schools  
Williamson County Schools  
1320 West Main Street Suite 202  
Franklin TN 37064

Subject: **Energy Conservation and Infrastructure Improvement Program**

Dear Dr. Looney:

Trane has completed the Investment Grade Audit (IGA) of the fourteen (14) Williamson County School sites in Phase I, as listed in the attached sections. The goal of the IGA is to identify and confirm energy conservation measures (ECMs) and infrastructure improvements that are needed due to aging infrastructure or dated technology, as well as provide the foundation for final savings guarantees and implementation costs for a guaranteed savings-based performance contract with Trane.

In the following sections, we have included an ECM Matrix, a Scope Summary, Executive Savings Summary a self-funding Cash Flow model and supporting documentation for your review. Within the ECM Matrix and Scope Summary, the items in **green** font represent a \$9,947,264 program that can be implemented at Williamson County Schools in a self-funding manner (the guaranteed energy/operational savings will fund the debt service for these upgrades). The items in **red** font, totaling \$12,635,541, represent the remainder of the IGA results and are ECMs that are too capitolly intense to fund themselves via energy/operational savings; however, they do have guarantee-able savings associated with them so they *can* be included (and guaranteed by Trane) in the program if additional funds were to be contributed. Otherwise, this data can be used to support your future Capital Budgeting process.

At this time, we are outlining specific areas where facility improvements will address aging infrastructure and dated technology within the Williamson County School System and use Energy/Utility/Ops savings to fund the improvements (100%), with the energy/utility use savings guaranteed by Trane. **This program will produce a calculated value of \$11,672,034 in savings over the proposed 15-year term, which will offset Williamson County Schools' budgeting by funding \$9,947,264 in real property improvements, ongoing measurement & verification, Certified Energy Manager (CEM) services and the cost of debt service. These program savings represent a 23% reduction in the utility expenditures compared to the baseline for the fourteen (14) facilities that were evaluated (see the *Financial tab for details*).**

We truly appreciate the time and effort that the Williamson County Schools Maintenance Department has invested in assisting Trane in the development of this Audit and Executive Summary. With this investment of time, we have developed a Preliminary Performance Contracting Program with guaranteed energy/utility use savings that provide immediate and long-term benefits for all of the facilities analyzed.



Our proposed solution addresses the following business issues faced by the Williamson County School System:

- **Updating Aging Infrastructure**

As the buildings in the Williamson County School System age, they require more maintenance and capital replacements. There are also new regulations, mandates and environmental guidelines to satisfy, even though your budget is already tight. To control long-term operating costs and protect your school system's assets, we must update the aging infrastructure.

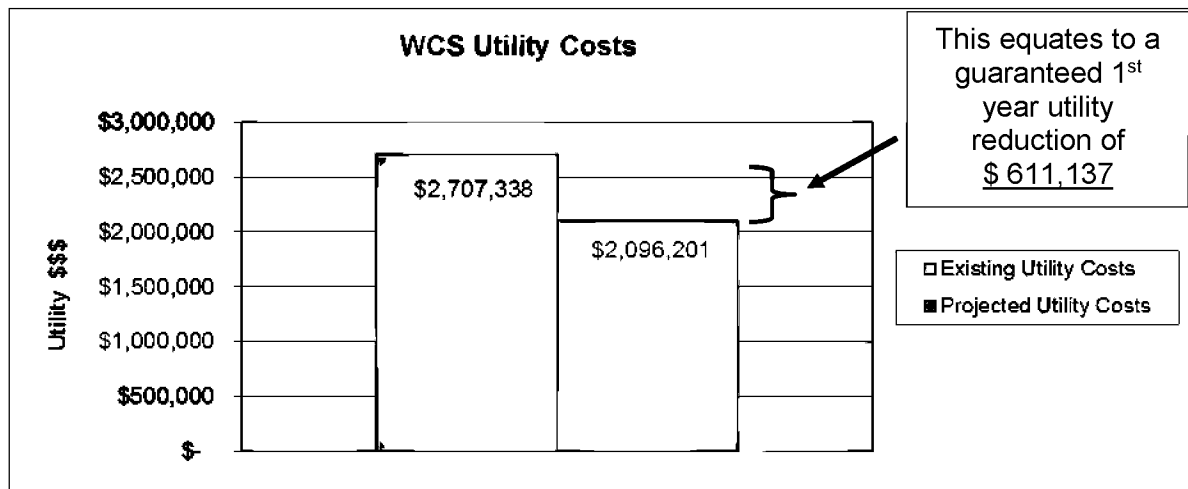
- **Eliminating up-front Capital Expense**

We understand that with Williamson County's rapid growth and future needs securing capital funds can be difficult and typically means long-term debt. Williamson County Schools continually faces the need to undertake projects to update infrastructure, improve environmental conditions and implement new technology upgrades. The best way to accomplish this is to do so without a large up-front capital expenditure. **Our program accomplishes this goal by reinvesting the savings derived from infrastructure investments back into the facilities and guarantees the energy/utility use savings. Additionally, the financial models have been developed to cover all of the expenses (including debt service) associated with the program.**

- **Reducing Operating Costs**

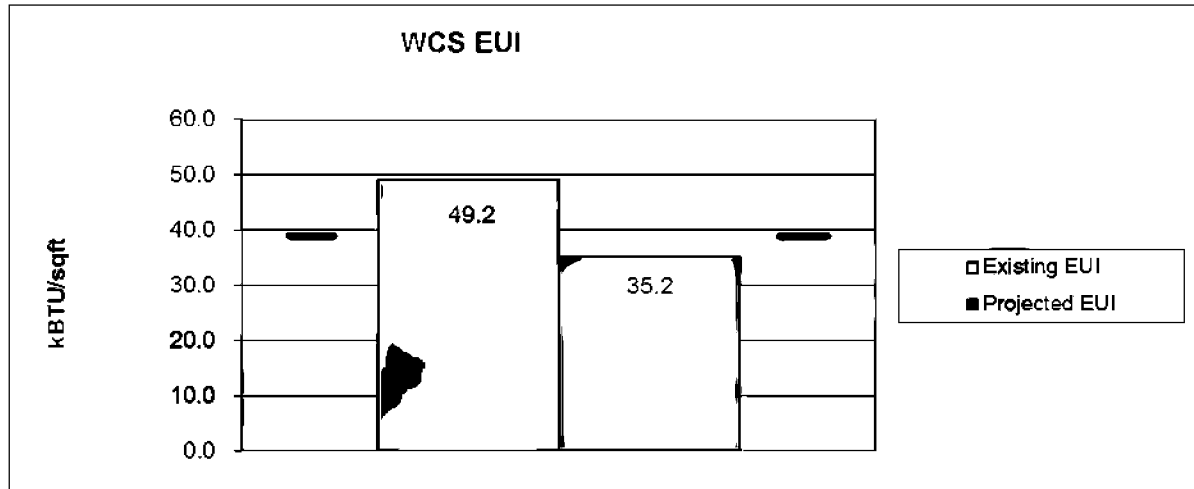
Given the ever-increasing utility rate increases and the budgeting pressures to reduce and control spending, this program is a beneficial solution for our public schools. Sustainable energy/utility savings fund the improvements and continue to provide positive cash flow throughout the project and after the financial term ends.

*Williamson County Schools Projected Impact (Self-funding Program)*





**The resulting EUI (Energy Use Intensity) reductions at each location are impressive - See Savings Summary and Cash Flow Model for details.**



- **Carbon Footprint Reduction**

This Program will also have a significant favorable environmental impact by reducing: CO<sub>2</sub> emissions, Sulfur Dioxide and Nitrous Oxide.

CO <sub>2</sub> emissions	10,769,474	Lbs. / yr.
Sulfur Dioxide	64,895	Lbs. / yr.
Nitrous Oxide	18,647	Lbs. / yr.

- **Visibility and Public Perception**

Williamson County Schools can be a leader in Tennessee by proactively addressing high energy costs and aging infrastructure **without additional burden to Williamson County Tax Payers.**

**This project includes** energy efficient LED lighting platforms, water conserving plumbing, vending machine/plug load optimization, new and/or upgraded heating, ventilating and air-conditioning (HVAC) control and automation systems, new HVAC units and systems, building envelope and weatherization upgrades. **See ECM Matrix Summary for more details (next tab).**

All of these measures will upgrade the Learning Environment in Williamson County Schools, from improving light levels in classrooms, to maintaining the proper amount of outdoor air ventilation and temperature control for optimal indoor space conditions and energy savings. This is truly a great infrastructure improvement program, funded by the utility savings it produces!

**We want to remind you again, that through this project, Williamson County Schools will be redirecting a portion of your existing utility spend toward infrastructure improvements that will generate enough energy- and non-energy-based savings to pay for the project.**

With the School Board's approval and a funding commitment from Williamson County Commission, Trane is prepared to mobilize immediately. The program is estimated to require twelve (12) months to complete with much of the work occurring on second shift, weekends and breaks to minimize disruptions to students and faculty. We thank you for this opportunity and look forward to working with you making the Williamson County Schools program a success.

Thank you again and please let us know if you have any questions.

Sincerely,

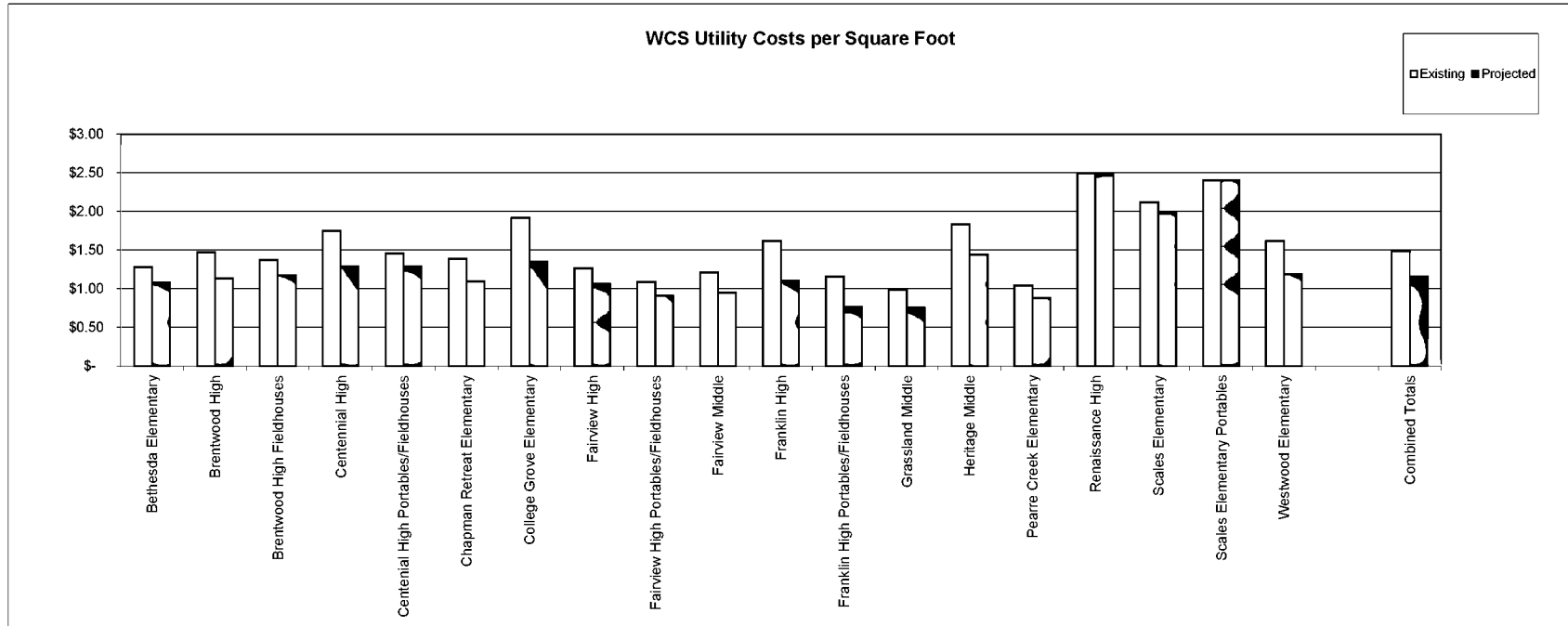
A handwritten signature in black ink, appearing to read "Randy Mauldin". The signature is fluid and cursive, with a large initial "R" and "M".

Randy Mauldin  
Business Development Manager  
Trane U.S, Inc.

C: Owen Nevader, Trane  
Stewart Shunk, Trane  
Jason Land, PE, Trane  
Glen Yearwood, Trane

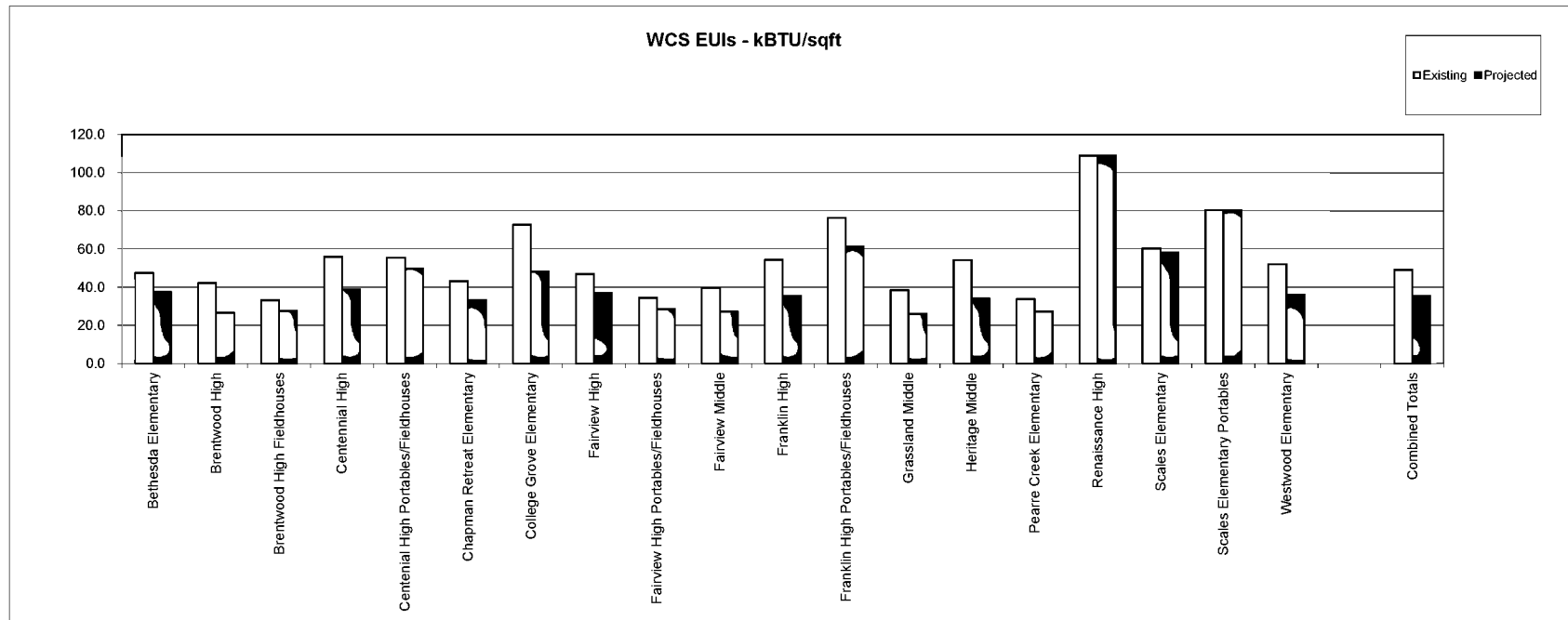
## Estimated Savings Summary

	Ft2	Existing Utility Costs						
		Total, \$ Utility Spend	Existing Kbtu/sqft	Existing \$/Ft2	Guaranteed Savings, \$	Guaranteed \$ Utility Spend	Guaranteed Kbtu/sqft	Guaranteed \$/Ft2
Bethesda Elementary	84,102	\$ 107,439	47.4	\$ 1.28	\$ 16,371	\$ 91,068	37.4	\$ 1.08
Brentwood High	238,867	\$ 352,507	42.1	\$ 1.48	\$ 82,272	\$ 270,235	26.5	\$ 1.13
Brentwood High Fieldhouses	4,400	\$ 6,039	33.2	\$ 1.37	\$ 869	\$ 5,170	27.5	\$ 1.17
Centennial High	244,500	\$ 428,151	56.0	\$ 1.75	\$ 113,283	\$ 314,868	38.8	\$ 1.29
Centennial High Portables/Fieldhouses	5,000	\$ 7,274	55.5	\$ 1.45	\$ 853	\$ 6,421	49.7	\$ 1.28
Chapman Retreat Elementary	86,600	\$ 119,877	43.2	\$ 1.38	\$ 25,137	\$ 94,740	33.3	\$ 1.09
College Grove Elementary	48,102	\$ 92,149	72.9	\$ 1.92	\$ 27,192	\$ 64,958	48.1	\$ 1.35
Fairview High	175,300	\$ 221,748	46.9	\$ 1.26	\$ 35,235	\$ 186,513	37.0	\$ 1.06
Fairview High Portables/Fieldhouses	2,575	\$ 2,804	34.5	\$ 1.09	\$ 460	\$ 2,344	28.3	\$ 0.91
Fairview Middle	109,112	\$ 132,406	39.6	\$ 1.21	\$ 28,919	\$ 103,487	27.2	\$ 0.95
Franklin High	255,535	\$ 414,000	54.4	\$ 1.62	\$ 132,770	\$ 281,230	35.5	\$ 1.10
Franklin High Portables/Fieldhouses	13,750	\$ 15,914	76.5	\$ 1.16	\$ 5,346	\$ 10,568	61.2	\$ 0.77
Grassland Middle	139,820	\$ 137,676	38.4	\$ 0.98	\$ 32,108	\$ 105,568	26.0	\$ 0.76
Heritage Middle	118,000	\$ 216,577	54.2	\$ 1.84	\$ 46,068	\$ 170,509	34.0	\$ 1.44
Pearre Creek Elementary	118,992	\$ 124,316	33.7	\$ 1.04	\$ 19,156	\$ 105,160	27.3	\$ 0.88
Renaissance High	17,000	\$ 42,408	108.9	\$ 2.49	\$ -	\$ 42,408	108.9	\$ 2.49
Scales Elementary	65,095	\$ 137,699	60.3	\$ 2.12	\$ 8,217	\$ 129,482	58.2	\$ 1.99
Scales Elementary Portables	3,400	\$ 8,163	80.5	\$ 2.40	\$ -	\$ 8,163	80.5	\$ 2.40
Westwood Elementary	86,805	\$ 140,190	52.0	\$ 1.62	\$ 36,881	\$ 103,309	36.0	\$ 1.19
<b>Combined Totals</b>	<b>1,816,955</b>	<b>\$ 2,707,338</b>	<b>49.2</b>	<b>\$ 1.49</b>	<b>\$ 611,136</b>	<b>\$ 2,096,201</b>	<b>35.2</b>	<b>\$ 1.15</b>



## Estimated Savings Summary

	F12	Existing Utility Costs						
		Total, \$ Utility Spend	Existing Kbtu/sqft	Existing \$/F12	Guaranteed Savings, \$	Guaranteed \$ Utility Spend	Guaranteed Kbtu/sqft	Guaranteed \$/F12
Bethesda Elementary	84,102	\$ 107,439	47.4	\$ 1.28	\$ 16,371	\$ 91,068	37.4	\$ 1.08
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Westwood Elementary	86,805	\$ 140,190	52.0	\$ 1.62	\$ 36,881	\$ 103,309	36.0	\$ 1.19
<b>Combined Totals</b>	<b>1,816,955</b>	<b>\$ 2,707,338</b>	<b>49.2</b>	<b>\$ 1.49</b>	<b>\$ 611,136</b>	<b>\$ 2,096,201</b>	<b>35.2</b>	<b>\$ 1.15</b>



Williamson County Schools Phase 1 - ECM Matrix																			
Facility Name	TLED Interior Lighting Upgrades	LED Exterior Lighting Upgrades	Portables/Fieldhouses TLED Lighting Upgrade	Network BAS Controls	Network BAS Upgrades	Inter-Net Programmable Thermostat	Demand Control Ventilation	Ventilation Controls	HVAC Upgrades	Environmental HVAC Upgrades	WSHP Unit Water Flow T&B	WSHP Loop Pump VFDs	Kitchen Exh Hood&MUA Fan VFDs	Boiler Replacement	Cooling Tower Replacement	Building Weatherization Upgrades	Vend & Snack Misers	Cooling Tower Sub metering	Water Conservation Upgrades
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Brentwood High	X	X	X	X (2)		X (5)	X (5A)				X (7,8)	X (11)	X (16)			X (14)	3		X
Centennial High	X	X	X	X (2)			X (5A)		X (9)		X (7,8)	X (11)	X (16)	X (12)		X (14)	3	X	X
Chapman Retreat Elementary	X	X (1)		X (2)				X(6)	X (9)		X (7,8)	X (11)	X (16)				3	X	X
College Grove Elementary	X	X			X (4)				X (9)		X (7)	X (11)	X (16)			X (14)	3		X
Fairview High	X	X	X	X (2)		X (5)	X (5A)			X (19)	X (7,8)	X (11)				X (14)	3		X
Fairview Middle	X	X		X (2)			X (5A)		X (9)		X (7)	X (11)		X (12)		X (14)	3		X
Franklin High	X	X	X	X (2)		X (5)	X (5A)			X (18)	X (7,8)	X (11)	X (16)	X (12)	X (17)	X (14)	3	X	X
Grassland Middle	X	X (1)		X (2)			X (5A)		X (9)		X (7)	X (11)		X (12)		X (14)	3		X
Heritage Middle	X	X		X (2)			X (5A)		X (22)		X (7,8)	X (11)	X (16)			X (14)	3		X
Pearre Creek Elementary	X	X		X (2)			X (5A)										3		X
Renaissance High				X (3)					X (10)										
Scales Elementary	X	X		X (3)			X (5A)		X (10)							X (14)	3		X
Westwood Elementary	X	X		X (2)							X (7)	X (11)				X (14)	3		X

**Notes:**

- 1 LED lighting and increasing light levels above current lighting
- 2 Replace the existing control with Allerton Network Control System
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- 8 Install new circuit setter flow control valves @ WSHPs w/ a capacity of 20 tons or larger
- 9 Replace existing old and poorly operating equipment
- 10 Replace existing 4-pipe system and VAV boxes with WSHP system. Install new DOAS units

- 11 Install solenoid valves @ WSHPs and differential pressure sensors to control pump with VFDs and preform T&B at pump(s)
- 12 Install new high efficiency boiler(s) to replace existing
- 14 Install door sweeps and weather-stripping
- 15 Not Used
- 16 Install VFDs on kitchen hood fans to control fan speed based on usage of cooking equipment
- 17 Replace the existing B.A.C. cooling tower with a new Evapco cooling tower
- 18 Replace the existing undersized ductless split system in the server room with a larger ductless split system
- 19 Replace the existing portable cooler with a new ductless split system
- 20 Make adjustments/modification to existing and add RTU to gym
- 21 Being done by WCS Now
- 22 Replace two gym units

**Williamson County Schools Phase 1 - ECM Matrix Scope Summary**

Facilities	Cash Flow	Energy Conservation Measure/Scope Summary
<b>Bethesda Elementary</b>		
Interior Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Exterior Site Lighting Upgrade	X	LED platform with programmable light levels and motion/dusk/dawn auto dimming feature(s) <b>Increasing Light Level</b>
Network BAS Controls	X	Replace the existing Novar Controls with Alerton Controls
Ventilation Control	X	Install motorized damper on the existing outdoor air ducts to shut off during unoccupied periods
HVAC Replacement (older than 96)	X	Remove and replace 25 horizontal WSHPs and install valves
HVAC Replacement (1996 Equ.)	X	Remove and replace 8 horizontal WSHPs installed in 1996
Gym Environmental HVAC Upgrade	X	Adding addition cool capacity to the gym, modify ductwork on existing unit to increase air flow
WSHP Water Flow T&B	X	HVAC equipment test & balance of water flow (on units not recommended for replacement) to restore operation as close to original design intent
WSHP Loop Pump VFD	X	Install variable frequency drives on existing pumps, open triple duty valves and balance load at pumps
Building Weatherization	X	Weather-stripping, door sweeps & astragals
Vending & Snack Misers	X	Local control sensor that uses fuzzy logic to setback vending machines during low/no occupancy
Water/Waste Water Conservation	X	Low flow plumbing fixture retrofit; standardizing on 1.28 GPF toilets and 1.0 GPM bubble stream aerators for laves (includes china & fixtures where applicable).
<b>Brentwood High</b>		
Interior Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Exterior Site Lighting Upgrade	X	LED platform with programmable light levels and motion/dusk/dawn auto dimming feature(s)
Network BAS Controls	X	Replace the existing Novar Controls with Alerton Controls
Demand Control Ventilation	X	CO2-based (occupancy) outside air ventilation for increased energy efficiency (Gym, Auditorium and common areas)
WSHP Water Flow T&B	X	HVAC equipment test & balance water to restore operation as close to original design intent
WSHP Loop Pump VFD & Valves	X	Install variable frequency drives on existing pumps, open triple duty valves, install two-way valves on 45 units and balance load at pumps
Kitchen Exh Hood&MAU VFD	X	Install variable frequency drives and sensors (exhaust temp) on makeup air and exhaust fans to reduce conditioned air exhaust
Building Weatherization	X	Weather-stripping, door sweeps & astragals
Vending & Snack Misers	X	Local control sensor that uses fuzzy logic to setback vending machines during low/no occupancy
Water/Waste Water Conservation	X	Low flow plumbing fixture retrofit; standardizing on 1.28 GPF toilets and 1.0 GPM bubble stream aerators for laves (includes china & fixtures where applicable)
<b>Brentwood High Athletic Buildings</b>		
Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Inter-Net Programmable Thermostat	X	Install Internet access programmable Thermostat
<b>Brentwood High Portables</b>		
Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
<b>Centennial High</b>		
Interior Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Exterior Site Lighting Upgrade	X	LED platform with programmable light levels and motion/dusk/dawn auto dimming feature(s)
Network BAS Controls	X	Replace the existing Novar Controls with Alerton Controls
Demand Control Ventilation	X	CO2-based (occupancy) outside air ventilation for increased energy efficiency (Gym & Auditorium)
HVAC Replacement	X	Remove and replace 74 horizontal WSHP that are at end of life
WSHP Water Flow T&B	X	Install eight circuit sets and test & balance water flow in 23 units to restore operation as close to original design intent
WSHP Loop Pump VFD & Valves	X	Install variable frequency drives on existing pumps, open triple duty valves, install two-way valves on 54 units and balance load at pumps
Kitchen Exh Hood&MAU VFD	X	Install variable frequency drives and sensors (exhaust temp) on makeup air and exhaust fans to reduce conditioned air exhaust
Boiler Replacement	X	Replace the existing boilers with high efficiency condensing boilers with controls
Building Weatherization	X	Weather-stripping, door sweeps & astragals
Vending & Snack Misers	X	Local control sensor that uses fuzzy logic to setback vending machines during low/no occupancy
Cooling Tower Sub-metering	X	Install sewer credit/adjustment meter, the water from evaporation, blowdown and drift are not return to the sewer
Water/Waste Water Conservation	X	Low flow plumbing fixture retrofit; standardizing on 1.28 GPF toilets and 1.0 GPM bubble stream aerators for laves (includes china & fixtures where applicable). Retrofit garbage to 8gpm

**Williamson County Schools Phase 1 - ECM Matrix Scope Summary**

Facilities	Cash Flow	Energy Conservation Measure/Scope Summary
<b>Centennial High Athletic Buildings</b>		
Interior Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
<b>Chapman's Retreat Elementary</b>		
Interior Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Exterior Site Lighting Upgrade	X	LED platform with programmable light levels and motion/dusk/dawn auto dimming feature(s) <b>Increasing Light Level</b>
Network BAS Controls	X	Replace the existing Novar Controls with Alerton Controls
Ventilation Control	X	Install motorized damper on the existing outdoor air ducts to shut off during unoccupied periods
HVAC Replacement	X	Remove and replace 48 horizontal and 5 vertical WSHP that are at end of life
WSHP Water Flow T&B	X	HVAC equipment test & balance water to restore operation as close to original design intent
WSHP Loop Pump VFD & Valves	X	Install variable frequency drives on existing pumps, open triple duty valves, install two-way valves on 9 units and balance load at pumps
Kitchen Exh Hood&MAU VFD	X	Install variable frequency drives and sensors (exhaust temp) on makeup air and exhaust fans to reduce conditioned air exhaust
Vending & Snack Misers	X	Local control sensor that uses fuzzy logic to setback vending machines during low/no occupancy
Cooling Tower Sub-metering	X	Install sewer credit/adjustment meter, the water from evaporation, blowdown and drift are not return to the sewer
Water/Waste Water Conservation	X	Low flow plumbing fixture retrofit; standardizing on 1.28 GPF toilets and 1.0 GPM bubble stream aerators for laves (includes china & fixtures where applicable). Retrofit garbage to 8gpm
<b>College Grove Elementary</b>		
Interior Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Exterior Site Lighting Upgrade	X	LED platform with programmable light levels and motion/dusk/dawn auto dimming feature(s)
Network BAS Controls Upgrade	X	Install seven humidity sensors, domestic circulation pumps and commission system
HVAC Replacement	X	Remove and replace 24 horizontal and 1 vertical WSHP that are at end of life
WSHP Water Flow T&B	X	HVAC equipment test & balance water to restore operation as close to original design intent
WSHP Loop Pump VFD & Valves	X	Install variable frequency drives on existing pumps, open triple duty valves, install two-way valves on 8 units and balance load at pumps
Kitchen Exh Hood&MAU VFD	X	Install variable frequency drives and sensors (exhaust temp) on makeup air and exhaust fans to reduce conditioned air exhaust
Building Weatherization	X	Weather-stripping, door sweeps & astragals
Vending & Snack Misers	X	Local control sensor that uses fuzzy logic to setback vending machines during low/no occupancy
Water/Waste Water Conservation	X	Low flow plumbing fixture retrofit; standardizing on 1.28 GPF toilets and 1.0 GPM bubble stream aerators for laves (includes china & fixtures where applicable). Retrofit garbage to 8gpm
<b>Fairview High</b>		
Interior Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Exterior Site Lighting Upgrade	X	LED platform with programmable light levels and motion/dusk/dawn auto dimming feature(s)
Network BAS Controls	X	Replace the existing Novar Controls with Alerton Controls
Demand Control Ventilation	X	CO2-based (occupancy) outside air ventilation for increased energy efficiency (Gym & Auditorium)
Environmental HVAC Upgrade	X	Remove the portable cooler in janitor office and install ductless split
WSHP Water Flow T&B	X	HVAC equipment test & balance water to restore operation as close to original design intent
WSHP Loop Pump VFD & Valves	X	Install variable frequency drives on existing pumps, open triple duty valves, install two-way valves on 31 units and balance load at pumps
Building Weatherization	X	Weather-stripping, door sweeps & astragals
Vending & Snack Misers	X	Local control sensor that uses fuzzy logic to setback vending machines during low/no occupancy
Water/Waste Water Conservation	X	Low flow plumbing fixture retrofit; standardizing on 1.28 GPF toilets and 1.0 GPM bubble stream aerators for laves (includes china & fixtures where applicable). Retrofit garbage to 8gpm
<b>Fairview High Athletic Buildings</b>		
Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Inter-Net Programmable Thermostat	X	Install Internet access programmable Thermostat

**Williamson County Schools Phase 1 - ECM Matrix Scope Summary**

Facilities	Cash Flow	Energy Conservation Measure/Scope Summary
<b>Fairview Middle</b>		
Interior Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Exterior Site Lighting Upgrade	X	LED platform with programmable light levels and motion/dusk/dawn auto dimming feature(s)
Network BAS Controls	X	Replace the existing Novar Controls with Alerton Controls
Demand Control Ventilation	X	CO2-based (occupancy) outside air ventilation for increased energy efficiency (Gym & Auditorium)
HVAC Replacement	X	Remove and replace 44 horizontal and 3 vertical WSHP that are at end of life
WSHP Water Flow T&B	X	HVAC equipment test & balance water to restore operation as close to original design intent
WSHP Loop Pump VFD & Valves	X	Install variable frequency drives on existing pumps, open triple duty valves, install two-way valves on 17 units and balance load at pumps
Boiler Replacement	X	Replace the existing boilers with high efficiency condensing boilers with controls
Building Weatherization	X	Weather-stripping, door sweeps & astragals
Vending & Snack Misers	X	Local control sensor that uses fuzzy logic to setback vending machines during low/no occupancy
Water/Waste Water Conservation	X	Low flow plumbing fixture retrofit; standardizing on 1.28 GPF toilets and 1.0 GPM bubble stream aerators for laves (includes china & fixtures where applicable).
<b>Franklin High</b>		
Interior Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Exterior Site Lighting Upgrade	X	LED platform with programmable light levels and motion/dusk/dawn auto dimming feature(s)
Network BAS Controls	X	Replace the existing Novar Controls with Alerton Controls
Demand Control Ventilation	X	CO2-based (occupancy) outside air ventilation for increased energy efficiency (Gym & Auditorium)
Boiler Replacement	X	Replace the existing boilers with high efficiency condensing boilers with controls
WSHP Water Flow T&B	X	Install six circuit sets and test & balance water flow in 133 units to restore operation as close to original design intent
WSHP Loop Pump VFD & Valves	X	Install variable frequency drives on existing pumps, open triple duty valves, install two-way valves on 55 units and balance load at pumps
Kitchen Exh Hood&MAU VFD	X	Install variable frequency drives and sensors (exhaust temp) on makeup air and exhaust fans to reduce conditioned air exhaust
New Cooling Tower	X	Replace the BAC cooling tower with Evapco fluid cooler
Environmental HVAC Upgrade	X	Replace the existing undersized ductless split in the server room with one to match current load
Building Weatherization	X	Weather-stripping, door sweeps & astragals
Vending & Snack Misers	X	Local control sensor that uses fuzzy logic to setback vending machines during low/no occupancy
Cooling Tower Sub-metering	X	Install sewer credit/adjustment meter, the water from evaporation, blowdown and drift are not return to the sewer
Water/Waste Water Conservation	X	Low flow plumbing fixture retrofit; standardizing on 1.28 GPF toilets and 1.0 GPM bubble stream aerators for laves (includes china & fixtures where applicable). Retrofit garbage to 8gpm
<b>Franklin High Athletic Building</b>		
Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Inter-Net Programmable Thermostat	X	Install Internet access programmable Thermostat
<b>Grassland Middle</b>		
Interior Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Exterior Site Lighting Upgrade	X	LED platform with programmable light levels and motion/dusk/dawn auto dimming feature(s) <b>Increasing Light Level</b>
Network BAS Controls	X	Replace the existing Novar Controls with Alerton Controls
Demand Control Ventilation	X	CO2-based (occupancy) outside air ventilation for increased energy efficiency (Gym & Auditorium)
WSHP Water Flow T&B	X	HVAC equipment test & balance water to restore operation as close to original design intent
HVAC Replacement (1986 Equ.)	X	Remove and replace 26 horizontal and 3 vertical WSHP that are at end of life
HVAC Replacement (1996 Equ.)	X	Remove and replace 16 horizontal and 1 vertical WSHP that are at end of life
WSHP Loop Pump VFD & Valves	X	Install variable frequency drives on existing pumps, open triple duty valves, install two-way valves on 29 units and balance load at pumps
Boiler Replacement	X	Replace the existing boilers with high efficiency condensing boilers with controls
Building Weatherization	X	Weather-stripping, door sweeps & astragals
Vending & Snack Misers	X	Local control sensor that uses fuzzy logic to setback vending machines during low/no occupancy
Water/Waste Water Conservation	X	Low flow plumbing fixture retrofit; standardizing on 1.28 GPF toilets and 1.0 GPM bubble stream aerators for laves (includes china & fixtures where applicable).



**Williamson County Schools Phase 1 - ECM Matrix Scope Summary**

Facilities	Cash Flow	Energy Conservation Measure/Scope Summary
<b>Heritage Middle</b>		
Interior Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Exterior Site Lighting Upgrade	X	LED platform with programmable light levels and motion/dusk/dawn auto dimming feature(s)
Network BAS Controls	X	Replace the existing Novar Controls with Alerton Controls
Demand Control Ventilation	X	CO2-based (occupancy) outside air ventilation for increased energy efficiency (Gym & Auditorium)
HVAC Replacement Two Gym Units	X	Replace two 20 ton gym units
WSHP Water Flow T&B	X	HVAC equipment test & balance water to restore operation as close to original design intent
WSHP Loop Pump VFD & Valves	X	Install variable frequency drives on existing pumps, open triple duty valves, install two-way valves on 20 units and balance load at pumps
Kitchen Exh Hood&MAU VFD	X	Install variable frequency drives and sensors (exhaust temp) on makeup air and exhaust fans to reduce conditioned air exhaust
Building Weatherization	X	Weather-stripping, door sweeps & astragals
Vending & Snack Misers	X	Local control sensor that uses fuzzy logic to setback vending machines during low/no occupancy
Water/Waste Water Conservation	X	Low flow plumbing fixture retrofit; standardizing on 1.28 GPF toilets and 1.0 GPM bubble stream aerators for laves (includes china & fixtures where applicable). Also convert garbage to 8gpm.
<b>Pearre Creek Elem</b>		
Interior Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Exterior Site Lighting Upgrade	X	LED platform with programmable light levels and motion/dusk/dawn auto dimming feature(s)
Network BAS Controls	X	Replace the existing Novar Controls with Alerton Controls
Demand Control Ventilation	X	CO2-based (occupancy) outside air ventilation for increased energy efficiency (Gym & Auditorium)
Vending & Snack Misers	X	Local control sensor that uses fuzzy logic to setback vending machines during low/no occupancy
Water/Waste Water Conservation	X	Low flow plumbing fixture retrofit; standardizing on 1.28 GPF toilets and 1.0 GPM bubble stream aerators for laves (includes china & fixtures where applicable). Retrofit garbage to 8gpm
<b>Renaissance High</b>		
HVAC Replacement (Convert to VRF)	X	Replace the existing system with DOAS units, VRF systems
Network BAS	X	Replace the existing Novar Controls with Alerton Controls (Only if HVAC Equipment is Replaced)
<b>Scales Elementary</b>		
Interior Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Exterior Site Lighting Upgrade	X	LED platform with programmable light levels and motion/dusk/dawn auto dimming feature(s)
Network BAS Controls & DCV	X	Replace the existing Novar Controls with Alerton Controls (Only if HVAC Equipment is Replaced)
HVAC Replacement (Convert to VRF)	X	Replace the existing system with DOAS units, VRF systems
Building Weatherization	X	Weather-stripping, door sweeps & astragals
Vending & Snack Misers	X	Local control sensor that uses fuzzy logic to setback vending machines during low/no occupancy
Water/Waste Water Conservation	X	Low flow plumbing fixture retrofit; standardizing on 1.28 GPF toilets and 1.0 GPM bubble stream aerators for laves (includes china & fixtures where applicable). Retrofit garbage to 8gpm
<b>Westwood Elementary</b>		
Interior Lighting Upgrade	X	Replace all fluorescent and incandescent lighting with LED technology and removing all ballast
Exterior Site Lighting Upgrade	X	LED platform with programmable light levels and motion/dusk/dawn auto dimming feature(s)
Network BAS Controls	X	Replace the existing Novar Controls with Alerton Controls
WSHP Water Flow T&B	X	HVAC equipment test & balance water to restore operation as close to original design intent
WSHP Loop Pump VFD & Valves	X	Install variable frequency drives on existing pumps, open triple duty valves, install two-way valves on 13 units and balance load at pumps
Building Weatherization	X	Weather-stripping, door sweeps & astragals
Vending & Snack Misers	X	Local control sensor that uses fuzzy logic to setback vending machines during low/no occupancy
Water/Waste Water Conservation	X	Low flow plumbing fixture retrofit; standardizing on 1.28 GPF toilets and 1.0 GPM bubble stream aerators for laves (includes china & fixtures where applicable). Retrofit garbage to 8gpm

**Trane Partnership for Infrastructure Improvement & Operational Excellence**  
**Program Cash Flow Analysis**  
**Williamson County Schools Phase I**

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
<b>Program Savings</b>																					
Energy Savings	\$ 611,136	\$ 629,470	\$ 648,354	\$ 667,805	\$ 687,839	\$ 708,474	\$ 729,728	\$ 751,620	\$ 774,169	\$ 797,394	\$ 821,316	\$ 845,955	\$ 871,334	\$ 897,474	\$ 924,398	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 11,366,466
Operational Savings	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Cost Avoidance (annual cash contribution)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Construction Period Savings (12 Months)	\$ 305,568.00																				\$ 305,568
<b>Annual Program Savings</b>	<b>\$ 916,704</b>	<b>\$ 629,470</b>	<b>\$ 648,354</b>	<b>\$ 667,805</b>	<b>\$ 687,839</b>	<b>\$ 708,474</b>	<b>\$ 729,728</b>	<b>\$ 751,620</b>	<b>\$ 774,169</b>	<b>\$ 797,394</b>	<b>\$ 821,316</b>	<b>\$ 845,955</b>	<b>\$ 871,334</b>	<b>\$ 897,474</b>	<b>\$ 924,398</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 11,672,034</b>
Program Cumulative Savings	\$ 916,704	\$ 1,546,174	\$ 2,194,528	\$ 2,862,333	\$ 3,550,172	\$ 4,258,646	\$ 4,988,374	\$ 5,739,995	\$ 6,514,163	\$ 7,311,557	\$ 8,132,873	\$ 8,978,828	\$ 9,850,162	\$ 10,747,636	\$ 11,672,034	\$ 11,672,034	\$ 11,672,034	\$ 11,672,034	\$ 11,672,034	\$ 11,672,034	\$ 11,672,034
<b>Program Costs</b>																					
Principal & Interest	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ 701,976	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,529,641
Annual M&V/CEM Support	\$ 56,958	\$ 58,667	\$ 60,427	\$ 62,240	\$ 64,107	\$ 66,030	\$ 68,011	\$ 70,051	\$ 72,153	\$ 74,317	\$ 76,547	\$ 78,843	\$ 81,208	\$ 83,645	\$ 86,154	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,059,357
Annual Service Support	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Annual Program Costs</b>	<b>\$ 758,934</b>	<b>\$ 760,643</b>	<b>\$ 762,403</b>	<b>\$ 764,216</b>	<b>\$ 766,083</b>	<b>\$ 768,006</b>	<b>\$ 769,987</b>	<b>\$ 772,027</b>	<b>\$ 774,129</b>	<b>\$ 776,293</b>	<b>\$ 778,523</b>	<b>\$ 780,819</b>	<b>\$ 783,185</b>	<b>\$ 785,621</b>	<b>\$ 788,130</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 11,588,998</b>
Program Cumulative Costs	\$ 758,934	\$ 1,519,577	\$ 2,281,980	\$ 3,046,195	\$ 3,812,278	\$ 4,580,284	\$ 5,350,271	\$ 6,122,298	\$ 6,896,427	\$ 7,672,720	\$ 8,451,243	\$ 9,232,062	\$ 10,015,247	\$ 10,800,867	\$ 11,588,998	\$ 11,588,998	\$ 11,588,998	\$ 11,588,998	\$ 11,588,998	\$ 11,588,998	\$ 11,588,998
<b>Cash Flow</b>																					
Annual Net Cash Flow	\$ 157,770	\$ (131,173)	\$ (114,049)	\$ (96,411)	\$ (78,244)	\$ (59,532)	\$ (40,259)	\$ (20,407)	\$ 40	\$ 21,101	\$ 42,793	\$ 65,136	\$ 88,149	\$ 111,853	\$ 136,268	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 83,036
Cumulative Net Cash Flow	\$ 157,770	\$ 26,597	\$ (87,451)	\$ (183,862)	\$ (262,106)	\$ (321,638)	\$ (361,896)	\$ (382,303)	\$ (382,263)	\$ (361,163)	\$ (318,370)	\$ (253,234)	\$ (165,085)	\$ (53,232)	\$ 83,036	\$ 83,036	\$ 83,036	\$ 83,036	\$ 83,036	\$ 83,036	\$ 83,036

Program Financial Summary	
Program Construction Cost	\$ 9,947,264
Estimated TVA Utility Rebates	\$ 173,071
Customer Down Payment	\$ -
Loan/Lease Amount	\$ 9,774,193
Year 1 - Program Savings	\$ 611,136
Year 1 - Simple Payback (years)	16.3
Term - Program Costs	\$ 11,588,998
Term - Program Savings	\$ 11,672,034
Term - Cumulative Payback Ratio	0.99
Annual Interest Rate	1.00%
Loan/Lease Term (years)	15
Payments per Year	12
Construction Interest Considered (yes/no)	no
Total Interest Payments	\$ 755,448
Annual Energy Cost Escalation Factor	3.0%
Annual Operational Cost Escalation Factor	3.0%
Annual Service Program Cost Escalation Factor	3.0%



# **Williamson County Schools**

**Guaranteed Energy Efficiency  
Improvements and  
Facility Upgrades**



***TRANE***<sup>®</sup>

**April 13, 2017, Updated June 5, 2017**

# Program Development Process



- Nov 2015** – Williamson County Schools published RFQ for district wide Energy Management Services.
- Feb 2016** – Williamson County Schools conducted oral interviews with responding Energy Services Companies.
- Mar 2016** – Williamson County Schools conducted final interviews with finalists selected by a panel of WCS representatives, WCS Leadership and State of Tennessee representatives and **selected TRANE as the Energy Services partner for WCS.**
- Apr 2016** – Williamson County Schools and TRANE developed and finalized a phased approach for school district.
- May 2016** – TRANE began performing Utility Analysis of Phase I of schools.
- May 2016** – **TRANE worked with Mark Samuels** and submitted applications with State of Tennessee Energy Efficient Schools Initiative for energy conservation measures.
- June 2016** – TRANE performed site surveys and audits of Phase I schools.
- Aug 2016** – TRANE performed **“mock-ups” of Fairview High School lighting options for classrooms.** WCS selection committee and leadership toured the classrooms and decided on lighting standards for WCS.
- Sept 2016** – Review findings of Preliminary Audit of Phase I Schools and lighting of all schools.
- Oct 2016** – Received approval from Williamson County Schools for Investment Grade Audit of Phase I Schools.
- Dec 2016** – TRANE developed **“Big Picture” view** of all phases of Williamson County Schools – **each phase will support a self-funding Program approximately \$9M - \$10M** of improvements for schools in each phase.
- Mar 2017** – TRANE completed the IGA of Phase I Schools.
- April 2017** – **Williamson County Schools selection process of Energy Conservation Measures** with TRANE
- April 2017** – Presentation to Williamson County Schools Board of Education for approval to proceed with Phase I of a guaranteed energy savings program.
- June 2017** – Updated for QECB funding and tried for scope & cost.



# Phased Approach



Phase I	Phase II	Phase III
Bethesda ES	Fairview ES	Allendale ES
Brentwood HS	Heritage ES	Brentwood MS
Centennial HS	Hillsboro ES/MS	Clovercroft ES
Chapmans Retreat ES	Kenrose ES	Crockett ES
College Grove ES	Oak View ES	Edmondson ES
Fairview MS	Page HS	Grassland ES
Fairview HS	Ravenwood HS	Hunters Bend ES
Franklin HS	Renaissance HS	Independence HS
Grassland MS	Spring Station MS	Lipscomb ES
Heritage MS	Summit HS	Longview ES
Pearre Creek ES	Trinity ES	Nolensville ES
Scales ES	Winstead ES	Page MS
Westwood ES	Woodland MS	Sunset ES/MS
		Walnut Grove ES



# Progress to date



✓ **Trane & Client execute Feasibility Study**

- Utility Data collection
- Comparative Analysis

✓ **Present results from Feasibility Study**

- Will a PC Model work in this scenario?
- Does client understand the business proposition?
- Does client want to move forward?

✓ **Letter to Proceed authorizing Preliminary Audit**

✓ **Preliminary Audit Results & Initial Proposal**

✓ **Letter of Commitment authorizing Investment Grade Audit**

- 1<sup>st</sup> financial commitment by client
- Validate preliminary findings
- Secure Program financing
- Finalize Program scope, cost & contract terms

• **Final Program authorization**

- Funding, Legal Reviews and Approval

• **Program Installation & Commissioning**

- Notice to Proceed, Mobilization

• **Commence Maintenance & Verification Services Agreement**

• **Training & On-Going Technical Support Services**

**Introduction of  
Performance Contracting**

**Feasibility Study**

**Feasibility Results**

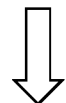
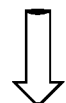
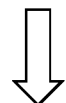
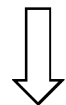
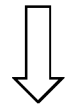
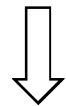
**Preliminary Audit**

**Preliminary Proposal**

**Investment Grade Audit**

**Final Proposal  
and Authorization**

**Program Fulfillment**



## Goals of the Program



- ***Update & Improve the learning environment*** by using “over-spend” on your existing utilities as a means to pay for the improvements.
- ***No*** “new” money
- ***Trane Guarantees the Results & Performance***
- ***100%*** of any excess utility savings goes to Williamson County Schools

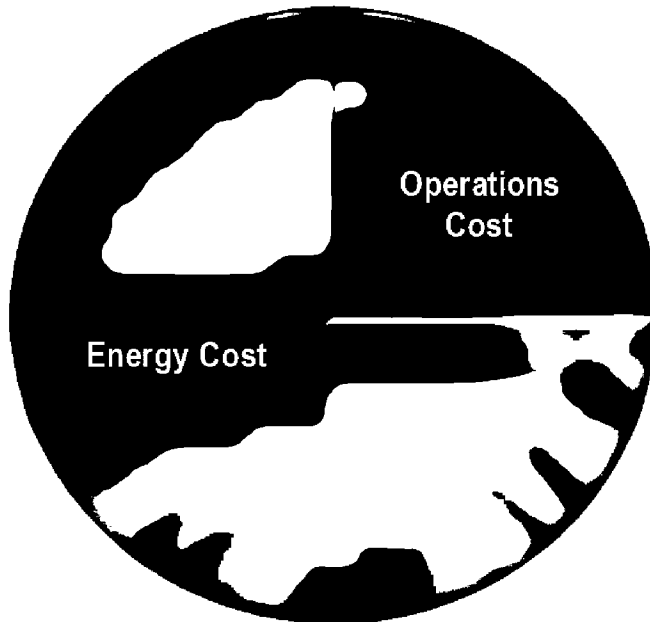


## How does this work?

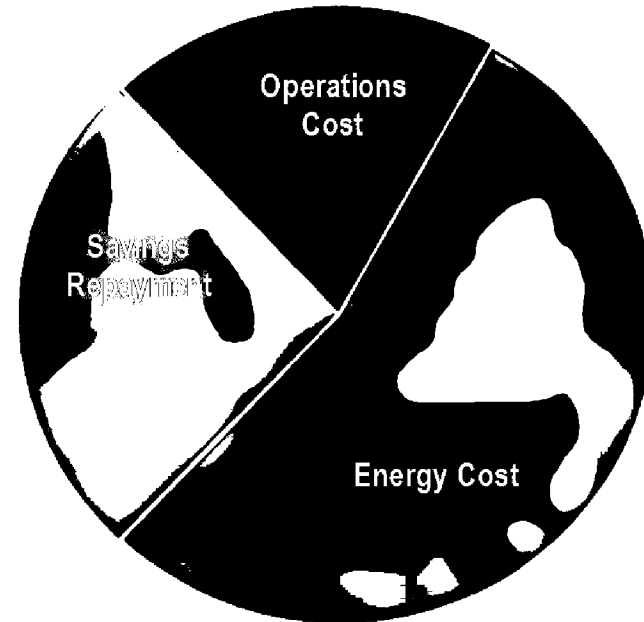


Trane guarantees that cost avoidance (utility & operations expenses) will meet or exceed the savings guarantees or Trane will pay the difference.

Pre Program



Post Program



Note: The utility budget remains the same, a portion of utility budget is re-allocated to pay debt service.



## Our Goal – A Self Funding Program



- During the Investment Grade Engineering Audit, we identify energy/utility/operational-based facility needs.
- Recognize that all of these needs cannot be addressed through a self-funding energy conservation Program – *they never can*.
- Evaluate each “need” from a (life cycle) cost versus savings (utilities, maintenance, etc.) potential.
- Prioritize the needs.
- Blend together a program that has a positive impact on ALL schools, funded by utility & operational savings over a 15-year term (average life expectancy of the recommended Program measures), while being guaranteed by TRANE.



# Investment Grade Audit



## Two Deliverables:

- 1 - 3rd-party Investment Grade Audit of Williamson County Schools.
- 2 - Proposal for the Energy Conservation Measures selected by Williamson County Schools from the IGA to build the Program you want for your schools.



## Results of the Investment Grade Audit



- Primary focus was to identify aged/inefficient infrastructure in an effort to address:
  1. **Obsolescence** of Building Automation Systems
  2. **LED Lighting** – interior & exterior
  3. **Reduce Energy Use Intensity (EUI)** across the School District **to the mid 30's** – *lofty goal!*
- We identified **\$22,825,805 (total)** in beneficial infrastructure upgrades that will yield \$706,487 in 1<sup>st</sup>-year guarantee-able reoccurring utility & operational savings.
- Working with School's Leadership & Staff, we developed a **\$9,947,264 program that will fund itself** through guaranteed utility & operational savings over a 15-year term @ 1% interest rate (QECP) (\$611,136 in 1<sup>st</sup>-year guarantee-able reoccurring savings).
- Guaranteed savings will be used for debt service repayment.



# Phase I - Self Funding Program Findings



## **Bethesda Elementary**

Interior Lighting Upgrades  
Exterior Site Lighting Upgrades  
Network BAS Controls  
Gym Environmental HVAC Upgrade  
Building Weatherization  
Vending & Snack Misers

## **Brentwood High School**

Interior Lighting Upgrades  
Exterior Site Lighting Upgrades  
Network BAS Controls  
Demand Controlled Ventilation  
WSHP Pump VFDs & Valves  
Building Weatherization  
Vending & Snack Misers  
Water/Waste Water Conservation

## **Athletic Buildings and Portables:**

Interior Lighting Upgrades

## **Centennial High School**

Interior Lighting Upgrades  
Exterior Site Lighting Upgrades  
Network BAS Controls  
Demand Controlled Ventilation  
WSHP Pump VFDs & Valves  
Building Weatherization  
Vending & Snack Misers  
Cooling Tower Sub-Metering  
Water/Waste Water Conservation

## **Athletic Buildings:**

Interior Lighting Upgrades

## **Chapman's Retreat Elementary**

Interior Lighting Upgrades  
Exterior Site Lighting Upgrades  
Network BAS Controls  
Ventilation Control  
WSHP Unit Water Side T&B  
WSHP Pump VFDs & Valves  
Vending & Snack Misers  
Cooling Tower Sub-Metering  
Water/Waste Water Conservation

## **College Grove Elementary**

Interior Lighting Upgrades  
Exterior Site Lighting Upgrades  
Existing BAS Controls Upgrade  
WSHP Pump VFDs & Valves  
Building Weatherization  
Vending & Snack Misers  
Water/Waste Water Conservation

## **Fairview High School**

Interior Lighting Upgrades  
Exterior Site Lighting Upgrades  
Network BAS Controls  
Ductless Split  
WSHP Pump VFDs & Valves  
Building Weatherization  
Vending & Snack Misers  
Water/Waste Water Conservation

## **Athletic Buildings:**

Interior Lighting Upgrades  
Inter-Net Programmable Thermostat



# Phase I - Self Funding Program Findings



## Fairview Middle School

Interior Lighting Upgrades  
Exterior Site Lighting Upgrades  
Network BAS Controls  
Demand Controlled Ventilation  
WSHP Pump VFDs & Valves  
Building Weatherization  
Vending & Snack Misers

## Franklin High School

Interior Lighting Upgrades  
Exterior Site Lighting Upgrades  
Network BAS Controls  
Demand Controlled Ventilation  
WSHP Pump VFDs & Valves  
Environmental HVAC Ductless Split IT  
Building Weatherization  
Vending & Snack Misers  
Cooling Tower Sub-Metering  
Water/Waste Water Conservation

## Athletic Buildings:

Interior Lighting Upgrades  
Inter-Net Programmable Thermostat

## Grassland Middle School

Interior Lighting Upgrades  
Exterior Site Lighting Upgrades  
Network BAS Controls  
Demand Controlled Ventilation  
WSHP Pump VFDs & Valves  
Building Weatherization  
Vending & Snack Misers

## Heritage Middle School

Interior Lighting Upgrades  
Exterior Site Lighting Upgrades  
Network BAS Controls  
Demand Controlled Ventilation  
WSHP Pump VFDs & Valves  
Building Weatherization  
Vending & Snack Misers  
Water/Waste Water Conservation

## Pearre Creek Elementary

Interior Lighting Upgrades  
Exterior Site Lighting Upgrades  
Network BAS Controls  
Vending & Snack Misers  
Water/Waste Water Conservation

## Scales Elementary

Interior Lighting Upgrades  
Exterior Site Lighting Upgrades  
Building Weatherization  
Vending & Snack Misers  
Water/Waste Water Conservation

## Westwood Elementary

Interior Lighting Upgrades  
Exterior Site Lighting Upgrades  
Network BAS Controls  
WSHP Pump VFDs & Valves  
Building Weatherization  
Vending & Snack Misers  
Water/Waste Water Conservation

Total Estimated  
Phase I Program =  
\$9,947,264

Guaranteed  
1<sup>st</sup>-year Utility  
Savings =  
\$ 611,136

## Self Funding Program Summary



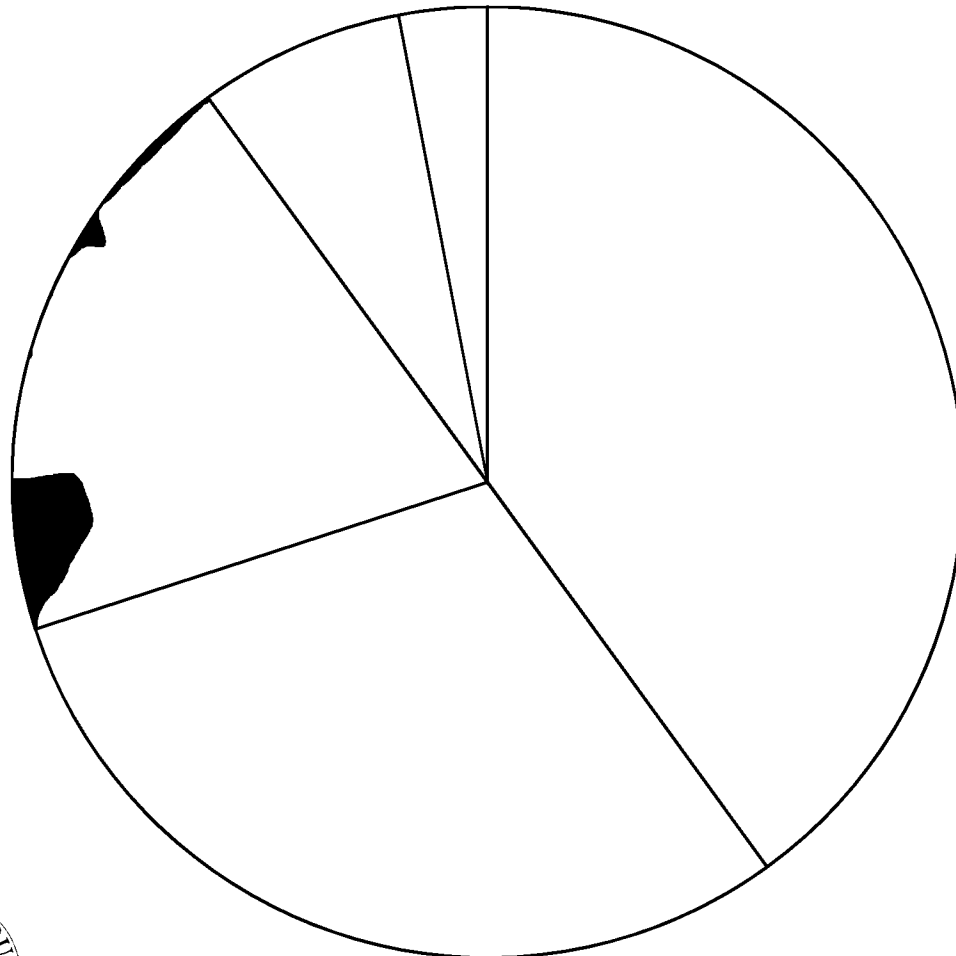
- For these 14 school facilities and out buildings, Williamson County Schools currently has Projected Annual Utility Expenditures for this school year of over **\$2,707,338**
- The combined 1<sup>st</sup>-year Utility savings is \$611,136. This represents a **reduction in annual utility expense of 23%**.
- This reduction in utility & operational expense, reallocated toward an infrastructure upgrade program, **will fund \$9,947,264 of real property improvements, including all program costs**, when financed over a 15 year term @ 1% interest (QECCB)
- Savings over term for the Phase 1 Program of **\$11,672,034**
- No “new” money needed.



# Percentage of Program by Category



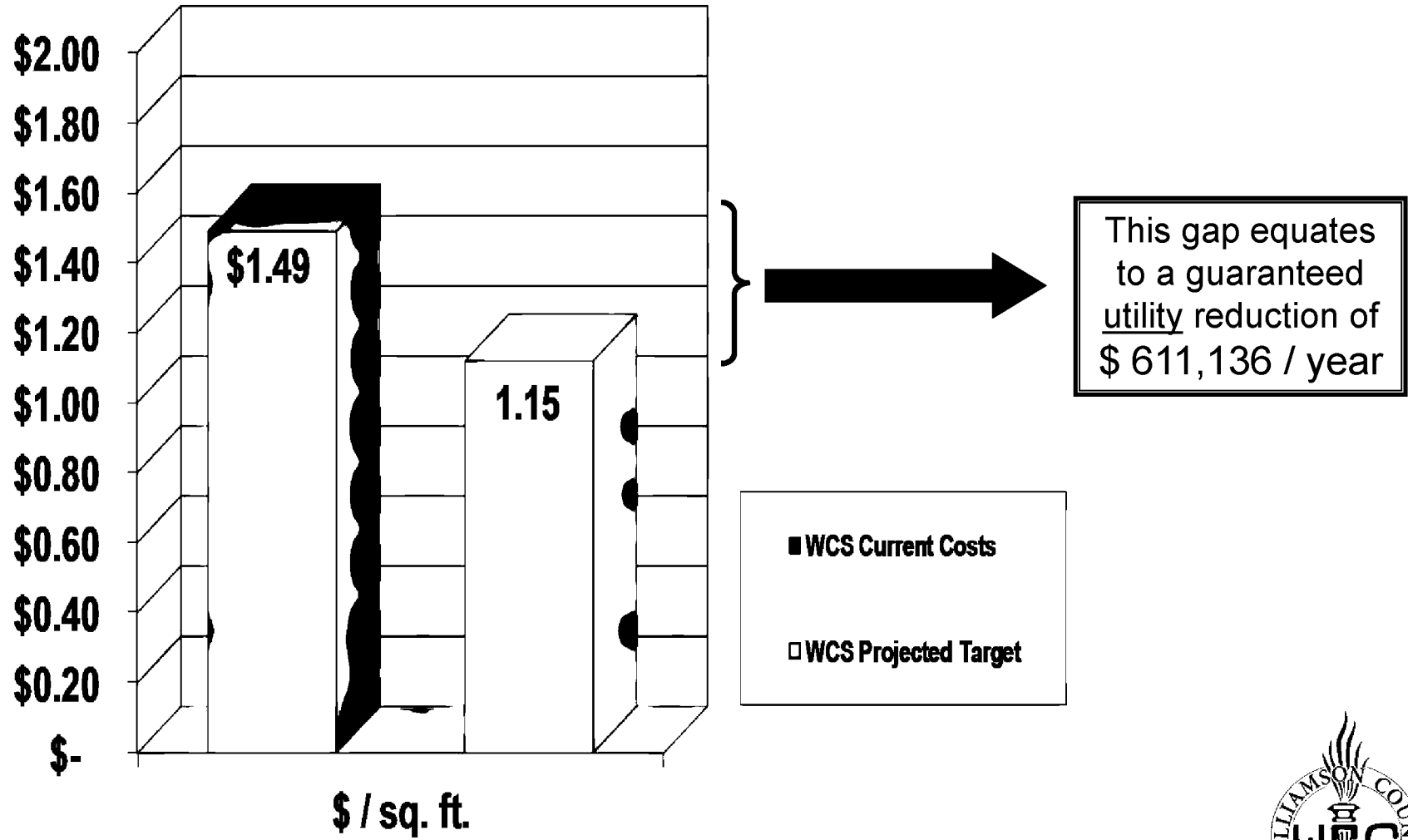
## Program Percentage



- Lighting (int. & ext.) - 40%
- Building Controls - 30%
- HVAC Equipment - 20%
- Water/Waste-water - 7%
- Weatherization - 3%

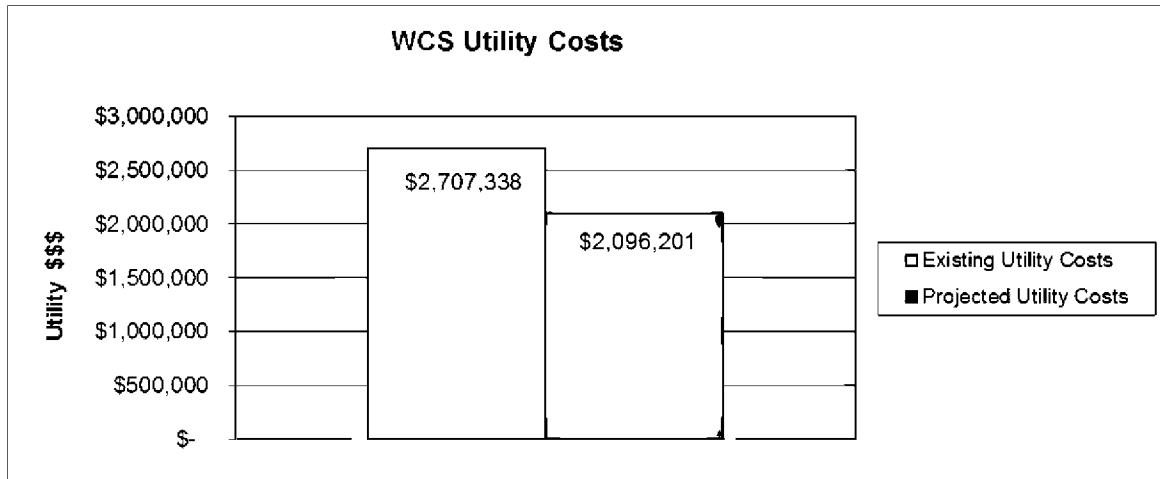


# Guaranteed Savings Results

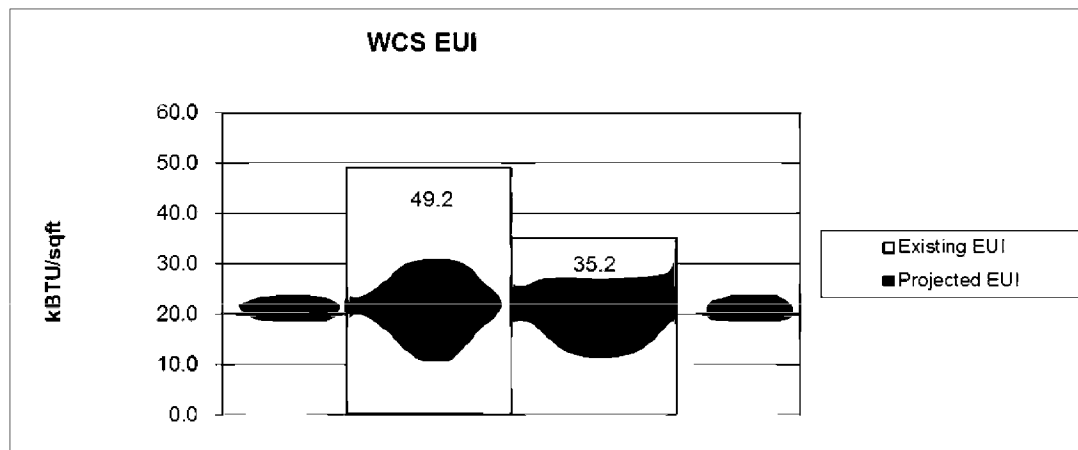




# Performance Impact of Program



Annual Utility Cost reduction of \$611,136 per year



## Energy Use

**Intensity (EUI)** is a metric to express a building's energy use as a function of a building characteristic, such as square-feet, over a year's time. A low EUI signifies good energy performance.



## Program Impact on the Environment



In addition to upgrading your facilities, a program with this magnitude of utility reduction will also have a significant impact on the environment by reducing:

<b>CO<sub>2</sub> Emissions</b>	<b>10,769,474</b>	<b>Lbs. / yr.</b>
<b>Sulfur Dioxide</b>	<b>64,895</b>	<b>Lbs. / yr.</b>
<b>Nitrous Oxide</b>	<b>18,647</b>	<b>Lbs. / yr.</b>

It will reduce the greenhouse gas emissions in Williamson County by ~ 10.8M pounds per year!

According to the United States EPA, this is equivalent to one of the following:



Removing over 970 vehicles from the road per year.

Planting over 118,492 trees per year.

Recycling over 1,654 tons of waste per year, instead of sending it to a landfill.



## Extra Credit Points – *Student Engagement*



- The Trane BTU Crew - A completely researched, “baked-out” and prepared curriculum enrichment program that supports 4<sup>th</sup>, 5<sup>th</sup> & 6<sup>th</sup> Grade Teachers in meeting the required State of Tennessee Science Content Standard 14.0 for Energy.



- Light Switch Sticker Contest – Sponsorship of a Light Switch Sticker Contest for students to design light switch stickers to encourage occupants to turn lights off when areas are unoccupied.



- The Trane Energy Patrol - A Program for K-8 Students to assist their school in the further reduction of utility expense through behavior change. Featuring a contest between schools.



- Science Fairs, Career Days, Internships, Guest Speakers, etc. Trane wants more K-12 students pursuing the path for STEM careers. We have several initiatives to encourage and support students on this path.

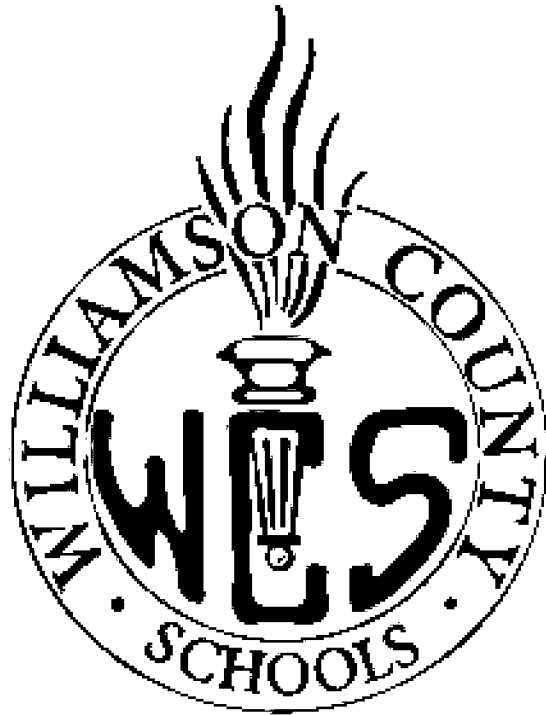
## Next Steps



- Present Investment Grade Audit results and program selection to Williamson County Board of Education.
- Board of Education to approve the program authorizing Dr. Looney and Trane to develop and finalize program contracts, and seek funding through Williamson County Commission.
- Installation of the Phase I Program @ Williamson County Schools.
- Proceed with the Investment Grade Audit of Phase II sites.



Questions & Open Discussion



**Appendix F: QECB Reimbursement Resolution & Letter from Legal Counsel**

23064223.2

**STATE OF TENNESSEE, WILLIAMSON COUNTY**

I, Elaine Anderson, County Clerk of Williamson County, do hereby certify that the foregoing is a true

and perfect copy of: A Resolution Declaring the Intent of Williamson County to Reimburse Itself for Certain Expenditures Relating to Public Works Projects With the Proceeds of General Obligation Bonds, Which May Include One or More Series of Qualified Energy Conservation Bonds And/OR County District School Bonds, to be Issued in an Approximate Amount of \$12,000,000.

as the same appears of record in Minute Book No. 28 Page \_\_\_\_\_ on file in my office at Franklin.

Witness my hand and seal, at office, this 7<sup>th</sup> day of June, 2017.

Elaine Anderson , Clerk

By Jessie Wilcutt , D.C.

RESOLUTION NO. 5-17-10  
Requested by: Budget Director

**A RESOLUTION DECLARING THE INTENT OF WILLIAMSON COUNTY TO REIMBURSE ITSELF FOR CERTAIN EXPENDITURES RELATING TO PUBLIC WORKS PROJECTS WITH THE PROCEEDS OF GENERAL OBLIGATION BONDS, WHICH MAY INCLUDE ONE OR MORE SERIES OF QUALIFIED ENERGY CONSERVATION BONDS AND/OR COUNTY DISTRICT SCHOOL BONDS, TO BE ISSUED IN AN APPROXIMATE AMOUNT OF \$12,000,000**

WHEREAS, it is the intention of the Board of County Commissioners (the "Board") of Williamson County, Tennessee (the "County") to issue bonds to (i) finance (a) all or a portion of the costs to improve, upgrade, modify and equip public buildings and facilities within the County for the purpose of energy conservation, including without limitation, the installation of energy-efficient public street lights, energy-efficient lighting in public buildings and facilities and energy-efficient upgrades to HVAC systems in public buildings and facilities, (b) acquisition of all property, real and personal, appurtenant to the foregoing and (c) legal, fiscal, administrative, architectural and engineering costs incident to all the foregoing (collectively, the "Projects") and (ii) pay costs incident to the issuance and sale of such bonds; and

WHEREAS, it is the intention of the Board to pay all or a portion of the costs associated with the Projects by the sale of general obligation bonds, which such bonds may be issued as county district school bonds and/or federally taxable qualified energy conservation bonds in accordance with the provisions of the Internal Revenue Code of 1986, as amended (the "Code"); and

WHEREAS, it is anticipated that it will be necessary to make expenditures in payment of said costs prior to the issuance of said bonds; and

WHEREAS, the Board wishes to state its intentions with respect to reimbursement for said expenditures in accordance with the requirements of final regulations applicable thereto promulgated by the United States Department of the Treasury.

NOW, THEREFORE, BE IT RESOLVED by the Board of County Commissioners of Williamson County, Tennessee, as follows:

Section 1. It is reasonably expected that the County will reimburse itself for certain expenditures, in an approximate amount of \$12,000,000 made by the County in connection with the Projects described above. The County intends to reimburse all such expenditures by issuing its general obligation bonds described above. The expenditures made prior to the issuance of said general obligation bonds for the Projects are expected to be paid from the fund balance in the Education Capital Projects Fund. Debt service on such bonds is expected to be paid from unlimited ad valorem taxes to be levied on all taxable property within the County. To the extent that a series of bonds is issued as qualified energy conservation bonds, debt service on such bonds is also expected to be paid from certain interest subsidy payments received by the County with respect to such series from the United States Treasury.

Section 2. The approximate principal amount of bonds expected to be issued to finance the Projects hereinabove described is not greater than \$12,000,000.

Section 3. This resolution shall be placed in the minutes of the Board and shall be made available for inspection by the general public at the office of the County Clerk.

Section 4. It is the County's reasonable expectation that it will reimburse the original expenditures from the proceeds of bonds.

Section 5. This resolution constitutes a declaration of official intent under applicable United States Treasury Regulations and applicable provisions of the Code, including Treas. Reg. §1.150-2 and Section 54A(d)(2)(D) of the Code, as and if applicable.

Section 6. All resolutions or parts of resolutions in conflict herewith are hereby repealed, and this resolution shall be in immediate effect from and after its adoption.

Adopted and approved this \_\_\_\_\_ day of \_\_\_\_\_, 2017.

  
Commissioner

ATTEST:

\_\_\_\_\_  
County Clerk

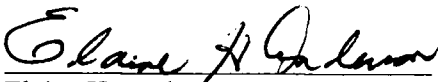


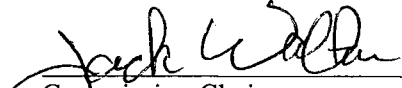
Resolution No. \_\_\_\_\_

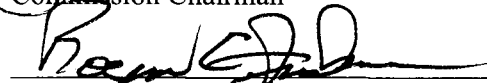
COMMITTEES REFERRED TO AND ACTION TAKEN:

Budget Committee	For <u>4</u>	Against <u>0</u>
Education Committee	For <u>7</u>	Against <u>0</u>

COMMISSION ACTION TAKEN: For 22\* Against 0 Pass \_\_\_ Out \_\_\_ Abstain \_\_\_ Absent \_\_\_ \*As amended

  
Elaine H. Anderson, County Clerk

  
Commission Chairman

  
Rogers Anderson, County Mayor

5-19-17  
Date

\*As amended- See attached

Amendments to Resolution 5-17-10

WHEREAS, the Williamson County Board of Commissioners and the Williamson County Board of Education acknowledge and agree to negotiate in good faith a memorandum of understanding providing that Williamson County government shall retain any and all utility cost savings realized from the energy savings program to reimburse Williamson County for the payment of principal and interest on the bonds, notes, and any other related purpose; and

**BASS BERRY ♦ SIMS, PC**

**Lillian M. Blackshear**  
lblackshear@bassberry.com  
(615) 742- 7902

June 9, 2017

Office of Energy Programs  
c/o Molly Cripps, Director  
Tennessee Department of Environment  
and Conservation  
Wm. Snodgrass Tennessee Tower  
312 Rosa Parks Ave, 2<sup>nd</sup> Floor  
Nashville, Tennessee 37243

Re: Application by Williamson County, Tennessee to Receive an Allocation of Qualified  
Energy Conservation Bonds

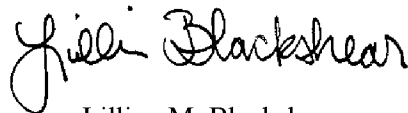
Dear Director Cripps:

We are submitting this letter to your office as part of the application (the "Application") submitted by Williamson County, Tennessee (the "County") to your office to receive an allocation of qualified energy conservation bonds to finance certain energy conservation projects within the County (collectively, the "Project").

We have reviewed the Application, and the Project appears to be a project eligible for financing by qualified energy conservation bonds under the Internal Revenue Code of 1986, as amended, and other applicable laws and regulations. The County expects to own and operate the Project for the benefit of the public, and the proposed financing of the Project does not appear to exceed the 30% allocation restriction on private activity bonds.

Please feel free to contact us should you have any questions or comments.

Sincerely,



Lillian M. Blackshear

DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
DIVISION OF WATER RESOURCES

**Clean Water State Revolving Fund (CWSRF) Loan Program**  
**Funds Available for Loan Obligation**  
**June 22, 2017**

**Unobligated Balance as of April 6, 2017** **\$ 157,611,853**

**Increases:** **\$ -**

**Unobligated Balance as of June 22, 2017** **\$ 157,611,853**

<b><u>Applicants:</u></b>	<b><u>Loan Number</u></b>	<b><u>Loan Amount</u></b>	
Greenbrier	SRF 2017-380	\$ 2,163,700	
Memphis	SRF 2015-355	\$ 25,000,000	
Millersville (Subsidized @ \$51,800)	CW6 2017-391	\$ 518,000	
Oakland	SRF 2016-369	\$ 1,010,365	
Oak Ridge	SRF 2017-396	\$ 3,100,000	
Parrottsville (Subsidized @ \$30,000)	CW5 2017-378	\$ 200,000	
		<u>\$ 31,992,065</u>	
<b>Remaining Funds Available for Loan Obligations</b>		<b><u>\$ 125,619,788</u></b>	

# FACT SHEET

JUNE 22, 2017

**Borrower:** City of Greenbrier  
**Population:** 8,400  
**County:** Robertson County  
**Consulting Engineer:** Westerman Engineering, LLC.  
**Project Number:** SRF 2017-380  
**Priority List Ranking/Points:** 4(FY 2015)/117  
**Recommended Term:** 20 years  
**Recommended Rate:**  $(2.57 \times 30\%) - (0.25\%) = 0.52\%$

**Project Description:** Wastewater Treatment Plant Upgrades (Construction of a SBR, digester, and effluent filter, add blowers; and replace pumps and controls)

**Total Project Cost:** \$ 5,890,700

**Sources of Funding:**

SRF Loan Principal	\$ 2,163,700
Local Funds	\$ -0-
Other Funds (CW5 2016-370)	\$ 1,500,000
Other Funds (SRF 2016-371)	\$ 2,227,000

**State-Shared Taxes:** \$ 800,125

**Debt Service:**

Prior Loans: (including SRF)	\$ 290,802	36.34%
Proposed Loan:	\$ 113,932	14.24%
Total:	\$ 404,734	50.58%

**Residential User Charge:** (5,000 gal/month)

Current Rate: \$ 49.50

**Public Meeting:** April 28, 2016

**REPRESENTATION OF THE LOCAL GOVERNMENT  
AS TO LOANS AND STATE-SHARED TAXES  
City of Greenbrier  
SRF 2017-380**

The Local Government hereby represents that:

- (1) The total amount of State-Shared Taxes received by the Local Government in the prior fiscal year of the State is \$800,125.

- (2) (a) The prior loans which have been funded for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Loan #	Original \$/Amt	Principal Forgiveness	Max: Annual Debt Service
SRF/Sewer	SRF 99-124	\$1,593,462	-	\$105,024
SRF/Sewer	SRF 01-152	\$78,190	-	\$4,992
SRF/Sewer	CW5 16-370	\$1,500,000	\$225,000	\$65,820
SRF/Water	CWF 16-371	\$2,227,000	-	\$114,966

- (b) The maximum aggregate annual debt service is \$290,802

- (3) (a) The loans which have been applied for or have been approved with funding not yet provided, for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Anticipated Interest Rate	Original \$/Amt	Principal Forgiveness	Anticipated Max. Annual Debt Service
SRF/Sewer	0.52%	\$2,163,700	-	\$113,932

- (b) The anticipated maximum aggregate annual debt service is \$113,932.

- (4) (a) State-Shared Taxes have been pledged by the Local Government to secure other obligations describe below:

Type of Obligation	Identifying #	Original \$/Amt	Max. Annual Pledge of State-Shared Taxes
N/A			

- (b) The anticipated maximum aggregate annual pledge of State-Shared Taxes pursuant of other obligations is \$0.


- (5) The amount of Local Government indebtedness Subparagraphs (2)(b), (3)(b) and (4)(b) having a lien on the State-Shared Taxes referred above is \$404,734.

- (6) The amount set forth in Subparagraph (1) less the amount set forth in Subparagraph (5) is \$395,391.

Duly signed by an authorized representative of the Local Government on this 10th day of January, 2017.

*This is the Comptroller's certificate as required by TCA 4-31-108. The approval of the loan(s) is contingent upon approval by the Tennessee Local Development Agency.*

LOCAL GOVERNMENT

BY:   
Bonnette Dawson, Mayor

# FACT SHEET

JUNE 22, 2017

**Borrower:** City of Memphis  
**Population:** 646,889  
**County:** Shelby County  
**Consulting Engineer:** CDM Smith Consultants  
**Project Number:** SRF 2015-355  
**Priority List Ranking/Points:** 64(FY 2014)/111  
**Recommended Term:** 20 years  
**Recommended Rate:**  $(2.00 \times 50\%) - (0.25\%) = 0.75\%$

**Project Description:** Modifications and upgrades to the existing treatment processes and the addition of disinfection facilities at the T. E. Maxson Wastewater Treatment Plant.

**Total Project Cost:** \$ 25,000,000

**Sources of Funding:**

SRF Loan Principal	\$ 25,000,000
Other Funds	\$ -0-
Local Funds	\$ -0-

**State-Shared Taxes:** \$ 90,692,107

**Debt Service:**

Prior Loans: (including SRF)	\$ 6,898,835	7.61%
Proposed Loan:	<u>\$ 1,346,483</u>	<u>1.48%</u>
Total:	\$ 8,245,318	9.09%

**Residential User Charge:** (5,000 gal/month)

Current Rate: \$ 11.34

**Public Meeting:** May 06, 2015



**REPRESENTATION OF THE LOCAL GOVERNMENT  
AS TO LOANS AND STATE-SHARED TAXES  
City of Memphis SRF 2015-355**

The Local Government hereby represents that:

- (1) The total amount of State-Shared Taxes received by the Local Government in the prior fiscal year of the State is \$90,692,107.
- (2) (a) The prior loans which have been funded for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Loan #	Loan Amount	Principal Forgiven	Max. Annual Debt Service
SRF/Sewer	06-195	\$3,988,541	-	\$255,732
QZAB	2003 Z12	\$1,084,000	-	\$72,267
SRF/Sewer	13-309	\$22,000,000	-	\$1,184,905
SRF/Sewer	13-311	\$100,000,000	-	\$5,385,931

- (3) (b) The maximum aggregate annual debt service is \$6,898,835.
- (a) The loans which have been applied for or have been approved with funding not yet provided, for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Anticipated Interest Rate	Loan Amount	Principal Forgiven	Anticipated Max. Annual Debt Service
SRF/Sewer	0.75%	\$25,000,000	-	\$1,346,483

- (b) The anticipated maximum aggregate annual debt service is \$1,346,483.
- (4) (a) State-Shared Taxes have been pledged by the Local Government to secure other obligations describe below:

Type of Obligation	Identifying #	Loan Amount	Principal Forgiven	Max. Annual Pledge of State-Shared Taxes
	None			

- (b) The anticipated maximum aggregate annual pledge of State-Shared Taxes pursuant of other obligations is \$0.
- (5) The amount of Local Government indebtedness (Subparagraphs (2)(b), (3)(b), and (4)(b) having a lien on the State-Shared Taxes referred above is \$8,245,318.
- (6) The amount set forth in (1) less the amount set forth in Paragraph (5) is \$82,446,789.

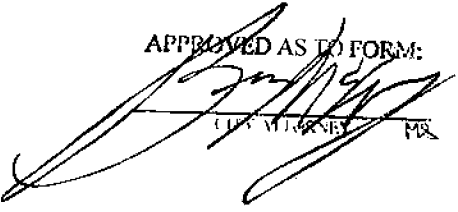
Duly signed by an authorized representative of the Local Government on this 1<sup>st</sup> day of June, 2016.

This is the Comptroller's certificate as required by TCA 4-31-108. The approval of the loan(s) is contingent upon the approval by the Tennessee Local Development Agency.

LOCAL GOVERNMENT

Acknowledged by:   
Jim Strickland, Mayor

APPROVED AS TO FORM:

  
CLIFF W. JONES MR me

ATTEST

  
Deputy Comptroller

# FACT SHEET

JUNE 22, 2017

**Borrower:** City of Millersville

**Population:** 6,600

**County:** Sumner & Robertson Counties

**Consulting Engineer:** OHM Advisors

**Project Number:** CW6 2017-391

**Priority List Ranking/Points:** 23(FY 2016)/30

**Recommended Term:** 20 years

**Recommended Rate:**  $(2.64 \times 20\%) - (0.25\%) = 0.28\%$

**Project Description:** I/I Corrections (SSES and rehabilitation of the City's sewer collection system)

**Total Project Cost:** \$ 518,000

**Sources of Funding:**

SRF Loan Principal (90%)	\$ 466,200	
Principal Forgiveness (10%)	\$ 51,800	
Other Funds	\$ -0-	

**State-Shared Taxes:** \$ 795,251

**Debt Service:**

Prior Loans: (including SRF)	\$ -0-	-0-%
Proposed Loan:	<u>\$ 23,971</u>	<u>3.01%</u>
Total:	\$ 23,971	3.01%

**Residential User Charge:** (5,000 gal/month)

Current Rate:	\$ 34.56
Proposed Rate:	\$ 35.61 (Effective Date: July 1, 2017)
Proposed Rate:	\$ 36.68 (Effective Date: July 1, 2018)

**Public Meeting:** February 21, 2017

**REPRESENTATION OF THE LOCAL GOVERNMENT  
AS TO LOANS AND STATE-SHARED TAXES  
City of Millersville  
CW6 2017-391**

The Local Government hereby represents that:

(1) The total amount of State-Shared Taxes received by the Local Government in the prior fiscal year of the State is \$795,251.

(2) (a) The prior loans which have been funded for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Loan #	Original \$/Amt	Max: Annual Debt Service
N/A			

(b) The maximum aggregate annual debt service is \$0.

(3) (a) The loans which have been applied for or have been approved with funding not yet provided, for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Anticipated Interest Rate	Original \$/Amt	Principal Forgiveness	Anticipated Max. Annual Debt Service
SRF/Sewer	0.28%	\$518,000	\$51,800	\$23,971

(b) The anticipated maximum aggregate annual debt service is \$23,971.

(4) (a) State-Shared Taxes have been pledged by the Local Government to secure other obligations describe below:

Type of Obligation	Identifying #	Original \$/Amt	Max. Annual Pledge of State-Shared Taxes
N/A			

(b) The anticipated maximum aggregate annual pledge of State-Shared Taxes pursuant of other obligations is \$0.

(5) The amount of Local Government indebtedness Subparagraphs (2)(b), (3)(b) and (4)(b) having a lien on the State-Shared Taxes referred above is \$23,971.

(6) The amount set forth in Subparagraph (1) less the amount set forth in Subparagraph (5) is \$771,280.

Duly signed by an authorized representative of the Local Government on this 3rd day of April, 2017.

*This is the Comptroller's certificate as required by TCA 4-31-108. The approval of the loan(s) is contingent upon approval by the Tennessee Local Development Agency.*

LOCAL GOVERNMENT

BY:   
Tim Lassiter, Mayor

# FACT SHEET

JUNE 22, 2017

**Borrower:** **Town of Oakland**  
**Population:** **7,000**  
**County:** Fayette County  
**Consulting Engineer:** **King Engineering Consultants, Inc.**  
**Project Number:** **SRF 2016-369**  
**Priority List Ranking/Points:** **18 (FY 2015)/45**  
**Recommended Term:** 20 years  
**Recommended Rate:**  $(2.64 \times 70\%) - (0.25\%) = 1.60\%$

**Project Description:** Collection System Expansion (Provide sewer service to customers along Highway 64/Eastside and to the Wellington Place Subdivision) and replacement of existing 175 MGD Pumping Station (P.S.) with a 400 MGD P.S.

**Total Project Cost:** \$ 1,010,365

**Sources of Funding:**

SRF Loan Principal	\$ 1,010,365
Other Funds	\$ -0-

**State-Shared Taxes:** \$ 846,225

**Debt Service:**

Prior Loans: (including SRF)	\$ 52,336	6.18%
Proposed Loan:	<u>\$ 59,065</u>	<u>6.98%</u>
Total:	\$111,401	13.16%

**Residential User Charge:** (5,000 gal/month)

Current Rate: \$ 17.60

**Public Meeting:** April 21, 2016

**REPRESENTATION OF THE LOCAL GOVERNMENT  
AS TO LOANS AND STATE-SHARED TAXES  
Oakland SRF 2016-369**

The Local Government hereby represents that:

- (1) The total amount of State-Shared Taxes received by the Local Government in the prior fiscal year of the State is \$846,225.
- (2) (a) The prior loans which have been funded for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Loan #	Original \$/Amt	Principal Forgiveness	Max: Annual Debt Service
SRF/Water	DG5 2016-179	\$1,249,850	\$312,463	\$52,336

- (b) The maximum aggregate annual debt service is \$52,336.
- (3) (a) The loans which have been applied for or have been approved with funding not yet provided, for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Anticipated Interest Rate	Original \$/Amt	Anticipated Max. Annual Debt Service
SRF/Sewer	1.60%	\$1,010,365	\$59,065

- (b) The anticipated maximum aggregate annual debt service is \$59,065.
- (4) (a) State-Shared Taxes have been pledged by the Local Government to secure other obligations describe below:

Type of Obligation	Identifying #	Original \$/Amt	Max. Annual Pledge of State-Shared Taxes
N/A			

- (b) The anticipated maximum aggregate annual pledge of State-Shared Taxes pursuant of other obligations is \$0.
- (5) The amount of Local Government indebtedness Subparagraphs (2)(b), (3)(b) and (4)(b) having a lien on the State-Shared Taxes referred above is \$111,401.
- (6) The amount set forth in Subparagraph (1) less the amount set forth in Subparagraph (5) is \$734,824.

Duly signed by an authorized representative of the Local Government on this 21 day of April, 2017.

*This is the Comptroller's certificate as required by TCA 4-31-108. The approval of the loan(s) is contingent upon approval by the Tennessee Local Development Agency.*

LOCAL GOVERNMENT

BY:

A handwritten signature in black ink, appearing to read "Chris Goodman", written over a horizontal line.

Mr. Chris Goodman, Mayor



# FACT SHEET

JUNE 22, 2017

**Borrower:** City of Oak Ridge  
**Population:** 29,330  
**County:** Anderson/Roane Counties  
**Consulting Engineer:** Trestles, LLC  
**Project Number:** SRF 2017-396  
**Priority List Ranking/Points:** 41 (FY 2017)/30  
**Recommended Term:** 20 years  
**Recommended Rate:**  $(2.42 \times 80\%) - (0.25\%) = 1.69\%$

**Project Description:** Project Includes modifying the existing wetwell; replacing existing pumps, valves, and associated piping; replacing the existing emergency generator, and electrical and controls upgrades.

**Total Project Cost:** \$ 3,100,000

**Sources of Funding:**

SRF Loan Principal	\$ 3,100,000
Other Funds	\$ -0-

**State-Shared Taxes:** \$ 4,612,337

**Debt Service:**

Prior Loans: (including SRF)	\$ 1,708,251	37.04%
Proposed Loan:	<u>\$ 182,776</u>	<u>3.96%</u>
Total:	\$ 1,891,027	41.00%

**Residential User Charge:** (5,000 gal/month)

Current Rate:	\$ 55.98
Proposed Rates	\$ 59.33 (Effective Date: January 01, 2018)

**Public Meeting:** May 08, 2017

**REPRESENTATION OF THE LOCAL GOVERNMENT  
AS TO LOANS AND STATE-SHARED TAXES  
Oak Ridge SRF 2017-396**

The Local Government hereby represents that:

(1) The total amount of State-Shared Taxes received by the Local Government in the prior fiscal year of the State is \$4,612,337.

(2) (a) The prior loans which have been funded for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Loan #	Original \$/Amt	Principal Forgiveness	Max: Annual Debt Service
SRF/Sewer	CW1 13-324	\$4,000,000	\$400,000	\$201,024
SRF/Sewer	SRF 13-325	\$14,000,000		\$708,504
SRF/Sewer	SRF 14-337	\$3,000,000		\$177,551
SRF/Sewer	CG4 17-356	\$2,000,000	\$140,000	\$111,754

(b) The maximum aggregate annual debt service is \$1,198,833.

(3) (a) The loans which have been applied for or have been approved with funding not yet provided, for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Anticipated Interest Rate	Original \$/Amt	Anticipated Max. Annual Debt Service
SRF/Sewer	1.69%	\$3,100,000	\$182,776

(b) The anticipated maximum aggregate annual debt service is \$182,776.

(4) (a) State-Shared Taxes have been pledged by the Local Government to secure other obligations describe below:

Type of Obligation	Identifying #	Original \$/Amt	Max. Annual Pledge of State-Shared Taxes
QZAB	2004 Z16	\$7,049,360	\$440,585
QZAB	2005 Z20	\$1,320,500	\$68,833

(b) The anticipated maximum aggregate annual pledge of State-Shared Taxes pursuant of other obligations is \$509,418.

(5) The amount of Local Government indebtedness Subparagraphs (2)(b), (3)(b) and (4)(b) having a lien on the State-Shared Taxes referred above is \$1,891,027.

(6) The amount set forth in Subparagraph (1) less the amount set forth in Subparagraph (5) is \$2,721,310.

Duly signed by an authorized representative of the Local Government on this 31st day of May, 2017.

*This is the Comptroller's certificate as required by TCA 4-31-108. The approval of the loan(s) is contingent upon approval by the Tennessee Local Development Agency.*

LOCAL GOVERNMENT

BY:



**Mark S. Watson, City Manager**

# FACT SHEET

JUNE 22, 2017

**Borrower:** **Town of Parrottsville**

**Population:** **265**

**County:** **Cocke County**

**Consulting Engineer:** **CE Designers, Inc.**

**Project Number:** **CW5 2017-378**

**Priority List Ranking/Points:** **1(FY 2015)/129**

**Recommended Term:** **20 years**

**Recommended Rate:**  **$(2.64 \times 40\%) - (0.25\%) = 0.81\%$**

**Project Description:** WWTP Improvements- Advanced Treatment (Repair and filter and subsurface area around filter and recirculation tank; install new UV disinfection system; and construct of an effluent stair aeration)

**Total Project Cost:** **\$ 200,000**

**Sources of Funding:**

SRF Loan Principal (85%) **\$ 170,000**

Principal Forgiveness (15%) **\$ 30,000**

Other Funds **\$ -0-**

**State-Shared Taxes:** **\$ 38,504**

**Debt Service:**

Prior Loans: (including SRF)	<b>\$ -0-</b>	<b>0%</b>
Proposed Loan:	<b><u>\$ 9,210</u></b>	<b><u>23.92%</u></b>
Total:	<b>\$ 9,210</b>	<b>23.92%</b>

**Residential User Charge: (5,000 gal/month)**

Current Rate: **\$ 35.00**

**Public Meeting:** **August 05, 2016**

**REPRESENTATION OF THE LOCAL GOVERNMENT  
AS TO LOANS AND STATE-SHARED TAXES  
Town of Parrottsville  
CW5 2017-378**

The Local Government hereby represents that:

(1) The total amount of State-Shared Taxes received by the Local Government in the prior fiscal year of the State is \$38,504.

(2) (a) The prior loans which have been funded for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Loan #	Original \$/Amt	Max: Annual Debt Service
N/A			

(b) The maximum aggregate annual debt service is \$0.

(3) (a) The loans which have been applied for or have been approved with funding not yet provided, for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Anticipated Interest Rate	Original \$/Amt	Principal Forgiveness	Anticipated Max. Annual Debt Service
SRF/Sewer	0.81%	\$200,000	\$30,000	\$9,210

(b) The anticipated maximum aggregate annual debt service is \$9,210.

(4) (a) State-Shared Taxes have been pledged by the Local Government to secure other obligations describe below:

Type of Obligation	Identifying #	Original \$/Amt	Max. Annual Pledge of State-Shared Taxes
N/A			

(b) The anticipated maximum aggregate annual pledge of State-Shared Taxes pursuant of other obligations is \$0.

(5) The amount of Local Government indebtedness Subparagraphs (2)(b), (3)(b) and (4)(b) having a lien on the State-Shared Taxes referred above is \$9,210.

(6) The amount set forth in Subparagraph (1) less the amount set forth in Subparagraph (5) is \$29,294.

Duly signed by an authorized representative of the Local Government on this 13 day of April, 2017.  
DD

*This is the Comptroller's certificate as required by TCA 4-31-108. The approval of the loan(s) is contingent upon approval by the Tennessee Local Development Agency.*

LOCAL GOVERNMENT

BY:



Dewayne Dahiel, Mayor

DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
DIVISION OF WATER RESOURCES

**Drinking Water State Revolving Fund (DWSRF) Loan Program**  
**Funds Available for Loan Obligation**  
**June 22, 2017**

**Unobligated Balance as of April 6, 2017** **\$ 43,002,788**

<u><b>Increases:</b></u>	<u><b>Loan Number</b></u>	<u><b>Loan Amount</b></u>	
Loan Decrease (see note below)		* \$ 5,000	\$ 5,000

**Unobligated Balance as of June 22, 2017** **\$ 43,007,788**

<u><b>Applicants:</b></u>	<u><b>Loan Number</b></u>	<u><b>Loan Amount</b></u>	
Cleveland (Subsidized @ 200,000)	DW6 2017-192	\$ 1,000,000	
Cleveland	DWF 2017-193	\$ 195,000	
Smith Utility District	DWF 2017-194	\$ 250,000	
			\$ 1,445,000

**Remaining Funds Available for Loan Obligations** **\$ 41,562,788**

**\* Change to previous loans**

<u><b>Loan Decreases</b></u>	<u><b>Loan Number</b></u>	<u><b>Amount</b></u>
25 Utility District	DW3 2014-141	\$ 5,000
		\$ 5,000

# FACT SHEET

JUNE 22, 2017

**Borrower:** City of Cleveland  
**Population:** 77,507  
**County:** Bradley County  
**Consulting Engineer:** Jacobs Engineering Group Inc.  
**Project Number:** DW6 2017-192  
**Priority List Ranking/Points:** 11(FY 2016)/45  
**Recommended Term:** 20 years  
**Recommended Rate:**  $(2.64 \times 70\%) - (0.25\%) = 1.60\%$

**Project Description:** Construct a 0.5 million gallon above ground concrete storage tank, a new 600 gallons per minute water booster pump station on Georgetown Road, replacement of approximately 3,000 linear feet of 12-inch diameter ductile iron pipe (DIP) main extension along Georgetown Road, and construction of approximately 1,000 linear feet of 12-inch diameter DIP transmission main along Georgetown Circle to the proposed Georgetown Road storage tank

**Total Project Cost:** \$ 1,195,000

## Sources of Funding:

SRF Loan Principal (80%)	\$ 800,000
Principal Forgiveness (20%)	\$ 200,000
Other Funds (DWF 2017-193)	\$ 195,000

**State-Shared Taxes:** \$ 7,470,545

## Debt Service:

Prior Loans: (including SRF)	\$ 1,370,125	18.34%
Proposed Loan:	<u>\$ 58,167</u>	<u>0.78%</u>
Total:	\$ 1,428,292	19.12%

## Residential User Charge: (5,000 gal/month)

Current Rate: \$ 22.83

**Public Meeting:** March 30, 2017



**REPRESENTATION OF THE LOCAL GOVERNMENT  
AS TO LOANS AND STATE-SHARED TAXES  
Cleveland DW6 2017-192**

The Local Government hereby represents that:

- (1) The total amount of State-Shared Taxes received by the Local Government in the prior fiscal year of the State is \$7,470,545.
- (2) (a) The prior loans which have been funded for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Loan #	Original \$/Amt	Principal Forgiveness	Max: Annual Debt Service
SRF/Sewer	13-319	\$1,862,000	\$451,022	\$76,991
SRF/Sewer	13-320	\$8,174,000.00	\$0	\$457,696
SRF/Sewer	09-241	\$1,359,000	\$543,600	\$50,011
SRF/Sewer	15-349	\$2,500,00	\$175,000	\$133,092
SRF/Sewer	17-379	\$110,418	\$5,521	\$5,722
SRF/Water	14-151	\$2,500,000	\$500,000	\$115,811
SRF/Water	16-172	\$3,725,500	\$0	\$207,802
QSCB	BFC0100	\$4,160,000	\$0	\$323,000

- (b) The maximum aggregate annual debt service is \$1,370,125.
- (3) (a) The loans which have been applied for or have been approved with funding not yet provided, for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Anticipated Interest Rate	Original \$/Amt	Principal Forgiveness	Anticipated Max. Annual Debt Service
SRF/Water	1.60%	\$1,000,000	\$200,000	\$46,767
SRF/Water	1.60%	\$195,000	\$0	\$11,400

- (b) The anticipated maximum aggregate annual debt service is \$58,167.
- (4) (a) State-Shared Taxes have been pledged by the Local Government to secure other obligations describe below:

Type of Obligation	Identifying #	Original \$/Amt	Max. Annual Pledge of State-Shared Taxes
N/A			

- (b) The anticipated maximum aggregate annual pledge of State-Shared Taxes pursuant of other obligations is \$0.

- (5) The amount of Local Government indebtedness Subparagraphs (2)(b), (3)(b) and (4)(b) having a lien on the State-Shared Taxes referred above is \$1,428,292.
- (6) The amount set forth in Subparagraph (1) less the amount set forth in Subparagraph (5) is \$6,042,253.

Duly signed by an authorized representative of the Local Government on this 27th day of April, 2017

*This is the Comptroller's certificate as required by TCA 4-31-108. The approval of the loan(s) is contingent upon approval by the Tennessee Local Development Agency.*

LOCAL GOVERNMENT

BY: 

Mr. Tim Henderson, President /CEO, Cleveland UB

# FACT SHEET

JUNE 22, 2017

**Borrower:** City of Cleveland  
**Population:** 77,507  
**County:** Bradley County  
**Consulting Engineer:** Jacobs Engineering Group Inc.,  
**Project Number:** DWF 2017-193  
**Priority List Ranking/Points:** 11(FY 2016)/45  
**Recommended Term:** 20 years  
**Recommended Rate:**  $(2.64 \times 70\%) - (0.25\%) = 1.60\%$

**Project Description:** Construct a 0.5 million gallon above ground concrete storage tank, a new 600 gallons per minute water booster pump station on Georgetown Road, replacement of approximately 3,000 linear feet of 12-inch diameter ductile iron pipe (DIP) main extension along Georgetown Road, and construction of approximately 1,000 linear feet of 12-inch diameter DIP transmission main along Georgetown Circle to the proposed Georgetown Road storage tank

**Total Project Cost:** \$ 1,195,000

## Sources of Funding:

SRF Loan Principal	\$ 195,000
Other Funds (DW6 2017-192)	\$ 1,000,000

**State-Shared Taxes:** \$ 7,470,545

## Debt Service:

Prior Loans: (including SRF)	\$ 1,370,125	18.34%
Proposed Loan:	<u>\$ 58,167</u>	<u>0.78%</u>
Total:	\$ 1,428,292	19.12%

## Residential User Charge: (5,000 gal/month)

Current Rate: \$ 22.83

**Public Meeting:** March 30, 2017

**REPRESENTATION OF THE LOCAL GOVERNMENT  
AS TO LOANS AND STATE-SHARED TAXES  
Cleveland DWF 2017-193**

The Local Government hereby represents that:

- (1) The total amount of State-Shared Taxes received by the Local Government in the prior fiscal year of the State is \$7,470,545.
- (2) (a) The prior loans which have been funded for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Loan #	Original \$/Amt	Principal Forgiveness	Max: Annual Debt Service
SRF/Sewer	13-319	\$1,862,000	\$451,022	\$76,991
SRF/Sewer	13-320	\$8,174,000.00	\$0	\$457,696
SRF/Sewer	09-241	\$1,359,000	\$543,600	\$50,011
SRF/Sewer	15-349	\$2,500,00	\$175,000	\$133,092
SRF/Sewer	17-379	\$110,418	\$5,521	\$5,722
SRF/Water	14-151	\$2,500,000	\$500,000	\$115,811
SRF/Water	16-172	\$3,725,500	\$0	\$207,802
QSCB	BFC0100	\$4,160,000	\$0	\$323,000

- (b) The maximum aggregate annual debt service is \$1,370,125.
- (3) (a) The loans which have been applied for or have been approved with funding not yet provided, for which the Local Government has pledged its State-Shared Taxes are as follows:

Loan Type	Anticipated Interest Rate	Original \$/Amt	Principal Forgiveness	Anticipated Max. Annual Debt Service
SRF/Water	1.60%	\$1,000,000	\$200,000	\$46,767
SRF/Water	1.60%	\$195,000	\$0	\$11,400

- (b) The anticipated maximum aggregate annual debt service is \$58,167.
- (4) (a) State-Shared Taxes have been pledged by the Local Government to secure other obligations describe below:

Type of Obligation	Identifying #	Original \$/Amt	Max. Annual Pledge of State-Shared Taxes
N/A			

- (b) The anticipated maximum aggregate annual pledge of State-Shared Taxes pursuant of other obligations is \$0.

- (5) The amount of Local Government indebtedness Subparagraphs (2)(b), (3)(b) and (4)(b) having a lien on the State-Shared Taxes referred above is \$1,428,292.
- (6) The amount set forth in Subparagraph (1) less the amount set forth in Subparagraph (5) is \$6,042,253.

Duly signed by an authorized representative of the Local Government on this 27th day of April, 2017

*This is the Comptroller's certificate as required by TCA 4-31-108. The approval of the loan(s) is contingent upon approval by the Tennessee Local Development Agency.*

LOCAL GOVERNMENT

BY: 

Mr. Tim Henderson, President /CEO, Cleveland UB

# FACT SHEET

JUNE 22, 2017

**Borrower:** **Smith Utility District**  
**Population:** **7,986**  
**County:** **Smith County**  
**Consulting Engineer:** **Warren and Associates Engineering, PLLC.**  
**Project Number:** **DWF 2017-194**  
**Priority List Ranking/Points:** **5(FY 2015)/45**  
**Recommended Term:** **20 years**  
**Recommended Rate:**  **$(2.53 \times 40\%) - (0.25\%) = 0.76\%$**   
**Project Description:** **Waterline Replacements along Main St. and Downtown/Cedar St. Areas**

**Total Project Cost:** \$ 1,714,500

**Sources of Funding:**

SRF Loan Principal \$ 250,000  
Other Funds (DW5 2016-182) \$ 1,464,500

**Gross Revenues:** \$ 2,153,855

**Debt Service:**

Prior Loans: (including SRF)	\$ 329,431	15.29%
Proposed Loan:	<u>\$ 13,478</u>	<u>0.63%</u>
Total:	\$ 342,909	15.92%

**Residential User Charge:** (5,000 gal/month)

Current Rate: \$ 36.95

**Public Meeting:** June 23, 2016

**REPRESENTATION OF THE LOCAL GOVERNMENT  
AS TO OUTSTANDING LOANS  
Smith UD  
DWF 2017-194**

The Local Government hereby represents that:

- (1) The total amount of revenues of the system received by the Local Government in the prior fiscal year of the State is \$2,153,855.
- (2) (a) The prior loans which have been funded for which the Local Government has pledged its revenues are as follows:

Loan Type	Loan #	Original \$/Amt.	Principal Forgiveness	Max: Annual Debt Service
Waterworks Revenue Bond	Series 1981	\$948,000	N/A	\$55,970
Waterworks Revenue Bond	Series 1982	\$500,000	N/A	\$29,520
Waterworks Revenue Bond	Series 2003	\$550,000	N/A	\$29,772
Waterworks Revenue Bond	Series 2002	\$120,000	N/A	\$6,840
Waterworks Revenue Bond	Series 2012	\$3,149,000	N/A	\$139,068
SRF/Water	DWA 09-094	\$300,000	\$120,000	\$10,368
SRF/Water	DW5 16-182	\$1,464,500	\$366,125	\$57,893

- (b) The maximum aggregate annual debt service is \$329,431.
- (3) (a) The loans which have been applied for or have been approved with funding not yet provided, for which the Local Government has pledged its revenues are as follows:

Loan Type	Anticipated Interest Rate	Original \$/Amt.	Anticipated Max. Annual Debt Service
SRF/Water	0.76%	\$250,000	\$13,478

- (b) The anticipated maximum aggregate annual debt service is \$13,478.

- (4) The amount of Local Government indebtedness (Subparagraphs (2)(b) and (3)(b) having a lien on the revenues referred above is \$342,909.
- (5) The amount set forth in Subparagraph (1) less the amount set forth in Subparagraph (4) is \$1,810,946.

Duly signed by an authorized representative of the Local Government on this 7<sup>th</sup> day of April, 2017.

*This is the Comptroller's certificate as required by TCA 4-31-108. The approval of the loan(s) is contingent upon approval by the Tennessee Local Development Agency.*

LOCAL GOVERNMENT

BY:   
Mack Gann, UD General Manager