Messiah Lutheran Church ELCA- Congregational Council Meeting

Sunday, August 18, 2024 at 11:00 am | Fellowship Hall

LEADERSHIP TEAM

Reporting Group	Leader	Council Liaison	Action	Notes
MINISTRY TEAMS				
Care	Illy Wood	Susan Hamilton		
Disciple	Mary Williamson	Michele Wilson		Ministry Fair / Parents Night Out / Theology Pub
Invite	Kate Spears	Davin Henrik		
Serve	Connie Cole	Jack Wilder		
Worship	Jane Mason	Jon Driskill		
SUPPORT TEAMS				
Badenhop	Mary Ellen Whitson	Becky Breeden		
Connect	Michele Wilson	Susan Hamilton		
Finance	Steve Hess	Michele Wilson		
Personnel	Michele Wilson	Davin Henrik		
Property	Jon Driskill	Michele Wilson		Women's Restroom
SPECIAL GROUPS				
BAM *(Disciple)*	Don Lawhorn	Carolyn Lawhorn		
DJC *(Serve)*	L. Wilder, M. Driskill	Jack Wilder		
Fellowship *(Invite)*	C. Lawhorn, J. Mennel	Cristall Mount		
Policy *(Support)*	Mike Driskill	Angela Kronau		
Stewardship *(Finance)*	Michele Wilson	Becky Breeden		
WELCA *(Disciple)*	Anne Tinker	Cristall Mount		
STAFF				
Parish Nurse	Mary Sophia Hawks	n/a		
Interim Senior Pastor	Pastor Mark Cerniglia	n/a		
Director of Music	Mary Phillips	n/a		

AGENDA:

1. **Call to Order: Angela | Lunch by Susan Hamilton & Opening Devotion by Michele Wilson**
2. **Approval of July Minutes**
3. **Tree Line on Golf Club Road – Mike Tinker**
4. **Finance Update - Steve Hess**
    a. **Stock Gift**
5. **Correspondence –Sullivan Weakly Land Acquisition, Updates, Teach Group, Building Use requests, etc.**
6. **Monthly Reports**
7. **Ministry Fair Assistance by Liaisons**
8. **Call Committee Update**
9. **Sign Up for Meal & Devotion for September 2024**
10. **Other Business**
11. **Adjourn with prayer**

NEXT COUNCIL MEETING: Sunday, September 15 at 11 am, Devotion & Meal: TBD

UPCOMING DATES:

Reports Due: ***Thursday, September 5***

Executive Committee Meeting: ***Tuesday, September 10*** **at 6:30pm via Zoom**

Messiah Lutheran Church | ELCA – Council Meeting

Sunday, July 21, 2024 at 11:15 noon | Messiah Fellowship Hall

Council members present: Michele Wilson, Carolyn Lawhorn, Jon Driskill, Angela Kronau, Susan Hamilton, Becky Breeden, Cristall Mount, Pastor Mark

Council members absent: Davin Henrik, Jack Wilder

LEADERSHIP TEAM

Reporting Group	Leader	Council Liaison	Action	Notes
MINISTRY TEAMS				
Care	Illy Wood	Susan Hamilton		
Disciple	Mary Williamson	Michele Wilson	X	
Invite	Kate Spears	Davin Henrik	X	New Members
Serve	Connie Cole	Jack Wilder		
Worship	Jane Mason	Jon Driskill	X	Sound System/Live Streaming/Worship Assistant scheduling
SUPPORT TEAMS				
Badenhop	Mary Ellen Whitson	Becky Breeden		
Connect	Michele Wilson	Susan Hamilton		
Finance	Steve Hess	Michele Wilson		
Personnel	Michele Wilson	Davin Henrik	X	Staff Requests/Gift for Pastor Laura
Property	Jon Driskill	Michele Wilson	X	Trees/Teach Group/Use of tables/chairs
SPECIAL GROUPS				
BAM *(Disciple)*	Don Lawhorn	Carolyn Lawhorn		Need for new leader
DIC *(Serve)*	L. Wilder, M. Driskill	Jack Wilder		
Fellowship *(Invite)*	C. Lawhorn, J. Mennel	Cristall Mount		
Policy *(Support)*	Mike Driskill	Angela Kronau		
Stewardship *(Finance)*	Michele Wilson	Becky Breeden		
WELCA *(Disciple)*	Anne Tinker	Cristall Mount		
STAFF				
Parish Nurse	Mary Sophia Hawks	n/a		
Interim Senior Pastor	Pastor Mark Cerniglia	n/a		
Director of Music	Mary Phillips	n/a		

AGENDA

1. **Call to Order: Angela | Lunch & Opening Devotion: Michele Wilson | Approval of June Minutes**

   Angela called the meeting to order at 11:55. Michele opened with a devotion. Angela requested a motion to accept the May Council Meeting Minutes; Susan H. so moved that they be approved, Michele W. seconded that motion and they were approved unanimously by all Council members. Angela then requested a motion to accept the June Council Retreat Minutes: Michele W. made a motion to accept the June Council Retreat Minutes, Jon D. seconded the motion and they were approved unanimously by all Council members.

2. Tree Line on Golf Club Road—Mike Tinker

This topic is postponed until a later meeting, since Mike T. was unable to attend today's meeting.

3. Finance Update – Steve Hess

Hi Council, please find attached the **May** and **YTD** Financials.

- **2024** Income and Spending plan $29,878 per month
- **May** General Fund **Income** was $8,060 below plan. (73% of plan)
  - General Fund Income is $3,124 below plan YTD. 4%
  - General Fund Income is $2,610 below last year at this same time.
- **April** General Fund **Expenses** were $3,215 below Plan.
  - General Fund Expenses are $1,276 above plan YTD.
  - General Fund Expenses are $7,403 below last year at this same time.
- April General Fund **Unrestricted Cash** reserves increased to **$20,754**
  - This is 3.0 weeks' worth of cash.
  - At this uncomfortably low level of unrestricted cash, I recommend spending below plan where possible for June.
- Other **May** items to note:
  - Members may have diverted giving from general fund to Water heater
    - In 5 months, Pastor Mark spent 78% of his Continuing Ed allowance.
  - In 5 months, Pastor Mark has spent 163% of our Sr. Pastor Auto allowance.
  - In 5 months, Supply Clergy expense through May is at 174% of annual plan.
  - In 5 months, Building repairs are at 68% of our planned spending at $10,917.
    - Luther ridge Camp fund is negative $756 because initial payments have been made
    - $7,855 has been paid for the Kitchen Hot Water Heater - $11K is on hand for completion
    - $3,400 2024 Creekmore endowment was received

Please let me know if you have any questions regarding **May** and YTD financials.

Please make sure Purchase orders are being completed and approved ***before*** making purchases.

Kindest Regards,

Steve

Hi Council, please find attached the **June** and **YTD** Financials.

- **2024** Income and Spending plan $29,878 per month
- **June** General Fund **Income** was $2,639 below plan.
  - General Fund income is $5,763 below plan YTD. 3% off (giving is 5% off)
  - General Fund Income is $3,508 below last year at this same time.
- **June** General Fund **Expenses** were $1,314 below Plan.
  - General Fund Expenses are $39 below plan YTD.
  - General Fund Expenses are $9,845 below last year at this same time.
- **June** General Fund **Unrestricted Cash** reserves increased to **$19,429**
  - This is 2.8 weeks' worth of cash.
  - At this uncomfortably low level of unrestricted cash, I recommend spending below plan where possible for July.
- Other **June** items to note:
  - In 6 months, Pastor Mark has spent 215% of our Sr. Pastor Auto allowance.
  - In 6 months, Supply Clergy expense is at 174% of annual plan.
  - In 6 months, Building repairs are at 68% of our planned spending at $10,917.
  - Luther ridge Camp fund is negative $756 - we need to make up this difference now that the camp is complete
  - Kitchen Hot Water Heater is complete - $2,075 balance will be added to building maintenance fund next month
  - $1000 in giving was delayed to next month - unsigned member check
  - A Christmas tree $1,501 and Hymn Board $180 was charged to memorial fund
  - Starting July 1 Kristin will move to 20 hrs. per week and ½ Salary
-

Please let me know if you have any questions regarding **June** and YTD financials.

Please make sure Purchase orders are being completed and approved ***before*** making purchases.

Kindest Regards,

Steve

4. **Correspondence, updates, building use requests, etc.**

   A question about a building use request submitted by UT Medical Center, Brain & Spine Institute was raised as to the fee assessed—was the fee monthly or yearly? Council members agreed that the fee was a monthly charged and will be changed to reflect that.

   Dr. Sarah King, director of the TEACH Group, LLC responded to an email that the Executive Council Committee had requested after Dr. King approached Messiah outlining her plans to expand her program at our church. As a result of the committee's communications with Dr. King, we have arranged to meet with her, via

Zoom, Wednesday, July 24th, to discuss, in more detail, what she will need and expect from us to carry out her plans for expansion of her program.

5. **Monthly Reports**

Disciple: The Disciple Committee has been very pleased with the Orange Curriculum used during the 2023-2024 year and would like to use it again for the upcoming 2024-2025 year. The cost has increased to $1007.00 and will come from the Disciple account. Cristall M. made a motion to approve that purchase and Jon Dr. seconded the motion. Council approved the motion unanimously.

Personnel: Pastor Laura Henrik has submitted her resignation as Youth Pastor for Messiah since she has accepted the interim chaplin position at the Episcapol School of Knoxville. She will still to continue supporting children and youth activities here at Messiah on a volunteer basis. Council proposed that we purchase a gift for her and host a "farewell" event Sunday, August 4th, in appreciation of her service to Messiah.

Michele W. also introduced the newly formed Mutual Ministry Team at Messiah. This is a team that will act as a liason to staff should there develop issues that parishoners encounter, but do not feel comfortable speaking directly with staff members. The team will meet quarterly and the meeting will be announced several weeks prior, so that any concerns can be presented to the team members, who will then present those concerns to the intended staff member(s) for resolution. The current team members are Mike Driskill, Beth Ford and Craig Stewart.

Invite: The New Member Orientation will be held Sunday, July 28th. New members will be introduced to the polity of Messiah and have the opportunity to meet members who work on the different committees and teams here, as well. The new members include Paul Jones, Joyce Caldwell, Paul and Millie Abelquist, Lawrence Terry, our visiting family from Burundi (Marcel, Cesarie, Cedrick, Fazilli, Ornella, and Destine Lwanga), David Achoto, Debbie Roser and Mike Valpredo. Michele W. moves that Council accepts these persons as new members to Messiah, Carolyn L. seconds the motion and Council approves the motion unanimously.

Worship: The Worship Committee wants to reschedule the outdoor Service (that was rained out in June) to Sunday, September 15th. A concern about siting the assembly on the west side of the building was brought up and a discussion of alternative sites ensued. Jon D. agreed to speak with the Worship committee about these concerns.

Badenhop Fund Steering Committee : Concerns from our online service members about the lack of quality sound equipment, which affects their ability to hear presentations during service was addressed. The committee has agreed to offer monies to update the current tech equipment in the sanctuary. Steve Hess says that there is $600 available to allow that expenditure.

Pastor Mark brought up the fact that, after reviewing his yearly mileage was spent primarily visiting Messiah's elderly members who use our online services. He has brought this to Mary Sophia's attention and she will be presenting this at the next Badenhop Fund Committee meeting.

Property: Jon D. reported that over the past couple of months the church's water bill almost tripled, resulting in a notification sent to Messiah from KUB about the increase usage. Though the handicapped toilet in the ladies room had been repaired earlier this year, Jon discovered that it had started leaking again, but that the second toilet in that restroom was also leaking, though he could not determine where the leak was coming from. He turned off the water line running to the second toilet and will notify a plumber to come in and check/repair both toilets. Since cutting the water to the second toilet, the water bill has dropped back to previous normal levels.

Pastor's Report: Pastor Mark wants to use his third and fourth weeks of annual vacation the week of December 26-January 2 and one week in February (which is slightly past his one year anniversary). He reminded Council that as we approach the one-year mark of his contract that we will need to decide if we want to extend his contract. He says that typical extensions for an interim is for three months at a time, depending on how close the Call Committee is to recommending a candidate.

Pastor Mark has planned a field trip to Montgomery to visit the Legacy Museum and the National Memorial for Peace and Justice. The dates chosen are September 19-21 and this is a trip that is open to anyone who might be interested in attending. He is requesting that the remainder of his continuing education funds be used to help cover his expenses for the trip.

6. Updated Benevolence Policy to Review and Approved

The updated Benevolence Policy was reviewed by Council. After questions about the inclusion of Justice Knox as a resource, Michele W. made a motion to approve

the updated Benevolence Policy (with corrections), Becky B. seconded the motion and Council approved the motion unanimously.

7. **Call Committee Update**
   The Call Committee will hold their first in-person meeting Tuesday, July 23. Their first task will be to choose a chair person that will be their contact with the Bishop's office. There are also a few narrative questions on the Ministry Site Profile (MSP) that they will need to complete.

8. **Sign Up for Meals & Devotions for August-December 2024**

August 18:	Meal: Susan Hamilton	Devotion: Angela Kronau
September 15:	Meal:	Devotion:
October:	Meal; Jack Wilder	Devotion: Jack Wilder
November 17:	Meal: Cristall Mount	Devotion:
December:	Meal: TBD	Devotion: Becky Breeden

9. **Updated Wedding Policy to Review and Approve**
   After reviewing the updated Wedding Policy, a recommendation was made to reword the item on pg. 69 (under **Use of the Church**) from

   "Alcoholic beverages are strictly forbidden and are not permitted anywher on church premises (with the exception of wine expressly for use in Holy Communion.)"

   To

   "Alcoholic beverages can be permitted on a case-by-case basis with approval by pastor and facilitator."

   Council agreed also that the fees listed will be updated to parallel fees charged in other settings comparable to Messiah's facilities.

   Michele W. made a motion to accept the updated Wedding Policy (with corrections), Jon D. seconded the motion and Council voted unanimously to approve the updated Wedding Policy (with corrections).

10. Other Business

None.

11. Adjourn with prayer

Pastor Mark adjourned us with prayer. The meeting adjourned at 12:45 pm.

NEXT COUNCIL MEETING: Sunday, August 18 at 11:00 am in the Fellowship Hall. Susan Hamilton will provide lunch and Angela Kronau will provide the devotion.

Reports due: Thursday, August 8.

Executive Committee: Tuesday, August 13 at 6:30 via Zoom.

Minutes submitted by: Carolyn Lawhorn Date: July 23, 2024

Messiah Evangelical Lutheran Church - Knoxville TN
Balance Sheet as of July 31, 2024

Account #	Account Name	Beginning Balance	Previous Period Balance	Period Activity	YTD Balance
Assets					
1.100.100	Operating Checking Account	114,161.58	163,277.22	(17,637.84)	145,639.38
1.200.100	Designated Funds Savings Account	40,383.10	40,385.10	0.36	40,385.46
1.250.100	Columbarium Savings Account	17,677.28	18,037.18	0.16	18,037.34
1.400.100	Thrivent Limited Maturity Bond Account	4,589.13	1,395.51	922.50	2,318.01
1.500.100	Land	16,300.00	16,300.00	0.00	16,300.00
1.500.200	Building	2,613,778.56	2,613,778.56	0.00	2,613,778.56
1.500.300	Pews, Organ & Furnishings	187,748.66	187,748.66	0.00	187,748.66
1.600.100	Pre-Paid Expense	7,579.81	3,499.89	121.15	3,621.04
	Total Assets	**$3,002,218.12**	**$3,044,422.12**	**($16,593.67)**	**$3,027,828.45**
Liabilities					
2.000.100	Accrued Liabilities	0.00	499.98	(83.33)	416.65
2.100.100	Mortgage Payable	484,297.67	454,819.73	(4,965.07)	449,854.66
2.600.100	Deferred Income	30,251.00	15,125.48	(2,520.92)	12,604.56
	Total Liabilities	**$514,548.67**	**$470,445.19**	**($7,569.32)**	**$462,875.87**
Fund Balances					
3.100.100	Unrestricted Operating Fund Balance	37,153.98	19,429.25	(2,687.99)	16,741.26
3.200.100	Badenhop Fund Balance	48,635.64	114,669.62	(14,146.04)	100,523.58
3.300.100	Sharon Olson Fund Balance	7,696.77	9,279.67	(759.97)	8,519.70
3.305.100	Balanced Budget Fund Balance	0.00	6,000.00	(1,000.00)	5,000.00
3.509.100	AV Equipment Fund Balance	599.99	599.99	0.00	599.99
3.510.100	Altar Flowers Balance	81.97	79.20	(40.00)	39.20
3.513.200	Building Maintenance Fund Balance	2,708.55	5,741.08	200.00	5,941.08
3.514.100	Brothers at Messiah Balance	557.58	471.89	40.00	511.89
3.517.100	Children and Youth Faith Formation Balance	6,898.37	6,898.37	2,773.44	9,671.81
3.518.100	Come to the Water Balance	202.75	302.75	0.00	302.75
3.519.100	Columbarium Fund Balance	17,677.28	18,037.18	(43.74)	17,993.44
3.540.100	Creekmore Music Endowment Balance	9,483.32	11,004.23	0.00	11,004.23
3.550.100	ELCA Disaster Relief Balance	0.00	101.00	(101.00)	0.00
3.576.100	Hot Water Heater Fund Balance	0.00	2,075.00	1,000.00	3,075.00
3.590.100	Feeding Ministries	604.14	604.14	0.00	604.14
3.620.100	Landscaping Balance	662.21	662.21	0.00	662.21
3.630.100	Library Balance	637.52	637.52	0.00	637.52
3.655.100	Lutheridge Camp Fund Balance	0.00	(755.85)	755.85	0.00
3.670.100	Memorial/Honorarium Gifts Balance	8,376.30	7,001.35	428.00	7,429.35
3.680.100	Mena Eckerd Endowment Fund Balance	3,589.13	1,395.51	922.50	2,318.01
3.710.100	Music Program Balance	316.75	316.75	0.00	316.75
3.715.100	One Year To Live Balance	1,621.00	1,621.00	0.00	1,621.00
3.716.100	Open Doors Balance	458.82	458.82	0.00	458.82
3.757.100	Serve Strategies Balance	1,656.80	1,656.80	0.00	1,656.80
3.780.100	Staff Gifts Balance	3,022.71	0.00	0.00	0.00
3.793.100	Summer Art Program Balance	1.65	1.65	0.00	1.65
3.812.100	VBS Registration Balance	267.47	1,170.04	(1,170.04)	0.00
3.837.100	WELCA Eggs for Carecuts Balance	677.58	858.66	(60.44)	798.22
3.840.100	World Hunger Balance	0.00	99.99	(99.99)	0.00
3.855.100	Youth Room Renovations Balance	426.46	426.46	0.00	426.46
3.857.100	Youth Scholarships Balance	1,950.00	1,950.00	0.00	1,950.00
3.999.999	Equity & Fixed Assets Balance	2,331,704.71	2,361,182.65	4,965.07	2,366,147.72
	Total Fund Balances	**$2,487,669.45**	**$2,573,976.93**	**($9,024.35)**	**$2,564,952.58**
	Total Liabilities and Fund Balances	**$3,002,218.12**	**$3,044,422.12**	**($16,593.67)**	**$3,027,828.45**

MESSIAH LUTHERAN CHURCH
Monthly Summary for the Month of July 2024
Percent of Budget Year = 58.3%

Messiah Mission	Monthly Activity	YTD Activity	YTD 2023 Activity	2024 Full Year Budget	% of Budget
Mission Contributions	$ 25,321.56	$ 198,826.67	$ 207,733.77	$ 358,531.00	55.5%
Mission Expenses					
Wider Church Mission Support	$ 1,000.00	$ 6,000.00	$ 12,180.00	$ 12,000.00	50.0%
Staff Expenses	$ 10,899.13	$ 86,502.22	$ 102,535.19	$ 153,302.00	56.4%
Leadership Support	$ -	$ 1,362.74	$ 1,426.16	$ 600.00	227.1%
Supplies and Other	$ 1,423.27	$ 9,814.55	$ 12,091.48	$ 16,049.00	61.2%
Facility Expenses	$ 14,165.12	$ 101,206.31	$ 89,214.44	$ 172,185.00	58.8%
Ministry Support	$ 522.03	$ 2,353.57	$ 2,369.79	$ 4,395.00	53.6%
Total Mission Expenses	$ 28,009.55	$ 207,239.39	$ 219,817.06	$ 358,531.00	57.8%
Balanced Budget Adjustment	$ -	$ (12,000.00)	$ (12,000.00)	$ (12,000.00)	
Impact on Available Unrestricted Cash	**$ (2,687.99)**	**$ (20,412.72)**	**$ (24,083.29)**	**$ (12,000.00)**	

OWLs Program	Monthly Activity	YTD Activity	YTD 2023 Activity	2024 Full Year Budget	% of Budget
Contributions	$ -	$ 124,090.69	$ 115,312.26	$ 115,000.00	107.9%
Expenses	$ 14,146.04	$ 72,202.75	$ 73,220.56	$ 115,000.00	62.8%
Impact on Owls Program Fund	$ (14,146.04)	$ 51,887.94	$ 42,091.70	$ -	

Available Unrestricted Cash	Month Ending Total
Cash	
Operating Checking Account	$ 145,639.38
Savings Account	$ 40,385.46
Columbarium Savings Account	$ 18,037.34
Total Cash	$ 204,062.18
Designated Funds	
Badenhop Fund	$ 100,523.58
Building Maintenance Fund	$ 5,941.08
Memorial Gifts Balance	$ 7,429.35
Columbarium Fund	$ 17,993.44
Sharon Olson Fund	$ 8,519.70
Hot Water Heater Fund	$ 3,075.00
Other Designated Funds	$ 36,262.44
Total Designated Funds (Incl. OWLS)	$ 179,744.59
Liabilities, Prepaids, and Equity	$ 7,575.33
Available Unrestricted Cash	$ 16,742.26
Memo: Mena Eckerd Fund Balance	$ 2,318.01

Messiah Evangelical Lutheran Church - Knoxville TN
Treasurer's Report as of July 2024

Account #	Account Name	Period Activity	Monthly Budget	YTD Balance	Annual Budget	% of Annual Budget
Income						
General Mission & Operating Contributions						
4.100.100	Unrestricted Offering	22,264.20	26,555.00	174,329.36	318,660.00	55
4.102.100	Badenhop Building Use	1,600.00	1,600.00	11,200.00	19,200.00	58
4.103.100	Loose Offering	262.00	292.00	2,151.10*	3,500.00	61
4.110.100	Interest and Dividends	0.36	0.00	2.36*	4.00	59
4.115.100	Coffee Hour Proceeds	42.00	38.00	437.85*	459.00	95
4.125.100	Building Usage Fee/Donation	100.00	349.00	3,170.00*	4,193.00	76
4.130.100	Miscellaneous	0.00	0.00	0.00	1.00	0
4.135.100	Thrivent Choice dollars	53.00	43.00	536.00*	514.00	104
4.140.100	Balance Budget	1,000.00	1,000.00	7,000.00	12,000.00	58
	Subtotal General Mission & Operating Contributions	**$25,321.56**	**$29,877.00**	**$198,826.67**	**$358,531.00**	**55**
OWLs Program Contributions						
4.200.100	Badenhop Fund Earnings	0.00	9,583.00	124,090.69*	115,000.00	108
4.210.100	OWLS Offerings	0.00	0.00	0.00	0.00	0
	Subtotal OWLs Contributions	**$0.00**	**$9,583.00**	**$124,090.69***	**$115,000.00**	**108**
Designated Funds Contributions						
4.300.100	Sharon Olson Fund Income	0.00		5,200.00		
4.510.100	Altar Flowers Income	0.00		1,464.00		
4.513.200	Building Maintenance Fund Income	200.00		5,232.53		
4.514.100	BAM Income	40.00		69.00		
4.517.100	Children and Youth Faith Formation Income	3,400.00		3,400.00		
4.518.100	Come to the Water Inc	0.00		100.00		
4.519.100	Columbarium Inc	0.16		401.01		
4.521.100	CareCuts Income	0.00		797.00		
4.540.100	Creekmore Music Endowment Income	0.00		3,405.91		
4.550.100	ELCA Domestic Disaster Relief Income	0.00		101.00		
4.576.100	Hot Water Heater Fund Income	1,000.00		22,055.00		
4.591.100	Guatemalan Mission Income	0.00		278.00		
4.655.100	Lutheridge Camp Income	755.85		1,881.50		
4.670.100	Memorial/Honorarium Gifts Income	428.00		734.38		
4.680.100	Mena Eckerd Endowment Fund Income	922.50		2,328.88		
4.812.100	VBS Registration Income	0.00		2,310.79		
4.837.100	WELCA Eggs for CareCuts Income	45.38		437.66		
4.840.100	World Hunger Income	0.00		199.99		
	Subtotal Designated Funds Contributions	**$6,791.89**		**$50,396.65**		

Account #	Account Name	Period Activity	Monthly Budget	YTD Balance	Annual Budget	% of Annual Budget
	Total Income	**$32,113.45**	**$39,460.00**	**$373,314.01**	**$473,531.00**	**68**
Expenses						
General Mission & Operating Expenses						
5.100.100	Synod Mission Support	1,000.00	1,000.00	7,000.00	12,000.00	58
5.100.110	UT Campus Ministry	0.00	0.00	0.00	0.00	0
5.100.120	ELCA World Hunger	0.00	0.00	0.00	0.00	0
5.100.130	Seminarian Support	0.00	0.00	(1,000.00)	0.00	0
	Subtotal Wider Church Mission Support	**$1,000.00**	**$1,000.00**	**$6,000.00**	**$12,000.00**	**50**
5.105.100	Sr. Pastor's Salary	4,000.00	4,000.00	26,000.00	48,000.00	54
5.105.200	Sr. Pastor's Housing	1,148.52	1,400.00	7,931.30	16,800.00	47
5.105.300	Sr. Pastor's Social Security	248.00	248.00	1,612.00	2,976.00	54
5.105.400	Sr. Pastor's Moving Expenses	0.00		934.89		
	Subtotal Sr. Pastor's Compensation	**$5,396.52**	**$5,648.00**	**$36,478.19**	**$67,776.00**	**52**
5.110.100	Sr. Pastor's Pension	0.00	0.00	0.00	0.00	0
5.110.200	Sr. Pastor's LH&D Benefits	326.00	326.00	2,119.00	3,912.00	54
	Subtotal Sr. Pastor's Benefits	**$326.00**	**$326.00**	**$2,119.00**	**$3,912.00**	**54**
5.115.100	Sr. Pastor's Auto Expense	0.00	40.00	1,032.47*	480.00	215
5.115.200	Sr. Pastor's Book Allowance	0.00	42.00	0.00	500.00	0
5.115.300	Sr. Pastor's Continuing Education	0.00	83.00	783.17*	1,000.00	78
	Subtotal Sr. Pastor's Expenses	**$0.00**	**$165.00**	**$1,815.64***	**$1,980.00**	**92**
5.140.100	Administrative Assistant Salary	1,571.26	3,132.00	20,425.66	37,582.00	54
5.140.200	Administrative Assistant Soc. Sec.	119.68	246.00	1,593.84	2,954.00	54
	Subtotal Administrative Assistant Compensation	**$1,690.94**	**$3,378.00**	**$22,019.50**	**$40,536.00**	**54**
5.140.240	Administrative Assistant Pension	188.55	189.00	1,319.85	2,263.00	58
5.140.250	Administrative Assistant Health Ins.	682.64	382.00	2,893.16*	4,587.00	63
	Subtotal Administrative Assistant Benefits	**$871.19**	**$571.00**	**$4,213.01***	**$6,850.00**	**62**
5.135.100	Director of Music Salary	2,428.68	2,429.00	17,000.76	29,144.00	58
5.135.200	Director of Music Soc. Sec.	185.80	186.00	1,335.49*	2,229.00	60
5.135.300	Director of Music Cont. Ed.	0.00	0.00	0.00	0.00	0
	Subtotal Director of Music	**$2,614.48**	**$2,615.00**	**$18,336.25***	**$31,373.00**	**58**
5.150.100	Nursery Attendant Salary	0.00	0.00	0.00	0.00	0
5.150.200	Nursey Attendant Soc. Sec.	0.00	0.00	0.00	0.00	0
	Subtotal Nursery Attendent	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**0**
5.155.100	Supply Clergy (Honorarium)	0.00	73.00	1,520.63*	875.00	174
5.155.200	Supply Organist (Honorarium)	0.00	0.00	0.00	0.00	0

Account #	Account Name	Period Activity	Monthly Budget	YTD Balance	Annual Budget	% of Annual Budget
	Subtotal Supply	**$0.00**	**$73.00**	**$1,520.63***	**$875.00**	**174**
	Subtotal Staff	**$10,899.13**	**$12,776.00**	**$86,502.22**	**$153,302.00**	**56**
5.160.100	Synod Assembly	0.00	50.00	1,122.74*	600.00	187
5.160.200	Leadership Programs	0.00		240.00		
	Subtotal Leadership Support	**$0.00**	**$50.00**	**$1,362.74***	**$600.00**	**187**
5.170.100	Office Equipment	621.28	517.00	4,106.03*	6,200.00	66
5.170.200	Computer Maintenance	0.00	129.00	456.25	1,552.00	29
5.170.250	Computer Hardware & Software	332.15	134.00	1,155.35*	1,610.00	72
5.170.300	Office Supplies	36.92	150.00	715.52	1,800.00	40
5.170.400	Postage	0.00	25.00	68.00	300.00	23
5.170.600	Bank Charges/Service Fees	393.27	255.00	2,643.68*	3,065.00	86
5.170.650	Background Check Fees	0.00	21.00	0.00	250.00	0
5.170.700	Kitchen/Coffee Supplies	0.00	20.00	232.27*	240.00	97
5.170.800	Publications	0.00	0.00	0.00	0.00	0
5.170.900	Electronic Communications	39.65	86.00	437.45	1,032.00	42
	Subtotal Supplies and Other	**$1,423.27**	**$1,337.00**	**$9,814.55***	**$16,049.00**	**61**
5.175.100	Utilities	3,524.00	2,881.00	21,540.00*	34,573.00	62
5.175.200	Telephone	157.95	274.00	2,305.65*	3,293.00	70
5.175.300	Property - Repairs	831.00	1,342.00	11,748.06*	16,100.00	73
5.175.400	Property/Liability Insurance	1,052.12	733.00	5,976.10*	8,793.00	68
5.175.500	Worker's Compensation Insurance	53.00	73.00	608.00*	878.00	69
5.175.600	Building Maintenance - Contracts	2,208.05	2,669.00	14,232.13	32,024.00	44
5.175.650	Cleaning/Bathroom Supplies	0.00	37.00	423.37*	444.00	95
5.175.700	Mortgage Principal	4,965.07	4,818.00	34,443.01*	57,816.00	60
5.175.800	Mortgage Interest	1,373.93	1,522.00	9,929.99	18,264.00	54
	Subtotal Facility Expenses	**$14,165.12**	**$14,349.00**	**$101,206.31***	**$172,185.00**	**59**
	Subtotal Office and Facility	**$15,588.39**	**$15,686.00**	**$111,020.86**	**$188,234.00**	**59**
5.180.100	Disciple - Adult Faith Formation	0.00	13.00	0.00	150.00	0
5.180.150	Disciple - Children & Youth Faith Formation	52.95	19.00	88.92	225.00	40
5.180.200	Care - Congregation Care	0.00	0.00	127.73*	0.00	0
5.180.300	Care - Fellowship	0.00	0.00	0.00	0.00	0
5.180.390	Connect	0.00	0.00	0.00	0.00	0
5.180.400	Invite - Publicity	0.00	33.00	0.00	400.00	0
5.180.450	Support - Stewardship	0.00	18.00	203.30*	220.00	92
5.180.500	Worship - Worship & Music	469.08	225.00	1,671.91*	2,700.00	62

Account #	Account Name	Period Activity	Monthly Budget	YTD Balance	Annual Budget	% of Annual Budget
5.180.550	Worship - Worship & Music - Altar Supplies	0.00	58.00	261.71	700.00	37
	Subtotal Ministry Support	**$522.03**	**$366.00**	**$2,353.57**	**$4,395.00**	**54**
5.190.100	Balance Budget Adjustment	0.00	0.00	12,000.00	12,000.00	100
	Subtotal General Mission & Operating Expenses	**$28,009.55**	**$29,878.00**	**$219,239.39**	**$370,531.00**	**59**
OWLS Ministry						
5.225.100	Parish Nurse Salary	3,708.34	3,708.00	25,958.38*	44,500.00	58
5.225.200	Parish Nurse Social Security	260.06	263.00	1,855.30*	3,159.00	59
	Parish Nurse Compensation	**$3,968.40**	**$3,971.00**	**$27,813.68***	**$47,659.00**	**58**
5.227.100	Parish Nurse Pension	222.50	223.00	1,557.50	2,670.00	58
5.227.200	Parish Nurse LH&D Insurance	774.08	770.00	5,418.56*	9,241.00	59
	Parish Nurse Benefits	**$996.58**	**$993.00**	**$6,976.06***	**$11,911.00**	**59**
5.230.100	Parish Nurse Auto Expense	0.00	317.00	1,454.57	3,800.00	38
5.230.300	Parish Nurse Continuing Education	(352.96)	163.00	2,227.77*	1,950.00	114
	Parish Nurse Expenses	**($352.96)**	**$480.00**	**$3,682.34***	**$5,750.00**	**64**
	Subtotal Staff - OM	**$4,612.02**	**$5,444.00**	**$38,472.08**	**$65,320.00**	**59**
5.280.100	Fellowship Events - OM	510.00	567.00	3,006.81	6,800.00	44
5.280.200	Office Supplies - OM	0.00	20.00	68.58	240.00	29
5.280.300	Postage - OM	0.00	50.00	2.83	600.00	0
5.280.400	Medical Devises, Storage & Upkeep - OM	0.00	70.00	207.00	840.00	25
5.280.475	Middle School Program Support - OM	3,400.00	617.00	5,194.96*	7,400.00	70
5.280.480	Building Use - OM	1,600.00	1,600.00	11,200.00	19,200.00	58
5.280.500	Publications - OM	24.02	10.00	24.02	120.00	20
5.280.600	Transportation - OM	0.00	25.00	188.00*	300.00	63
5.280.700	Care Assistance	4,000.00	1,182.00	13,838.47*	14,180.00	98
	Subtotal OWLs Ministry Support	**$9,534.02**	**$4,141.00**	**$33,730.67***	**$49,680.00**	**68**
	Owls Ministry	**$14,146.04**	**$9,585.00**	**$72,202.75**	**$115,000.00**	**63**
Designated Funds Expense						
5.300.100	Sharon Olson Fund Expense	759.97		4,377.07		
5.305.100	Balance Budget Expense	1,000.00		(5,000.00)		
5.510.100	Altar Flowers Expense	40.00		1,506.77		
5.513.200	Building Maintenance Fund Expense	0.00		2,000.00		
5.514.100	BAM Expense	0.00		114.69		
5.517.100	Children and Youth Faith Formation Expense	626.56		626.56		
5.519.100	Columbarium Exp	43.90		84.85		
5.521.100	CareCuts Expense	0.00		797.00		

Messiah Evangelical Lutheran Church - Knoxville TN
Treasurer's Report as of July 2024

Account #	Account Name	Period Activity	Monthly Budget	YTD Balance	Annual Budget	% of Annual Budget
5.540.100	Creekmore Music Endowment Expense	0.00		1,885.00		
5.550.100	ELCA Domestic Disaster Relief Expense	101.00		101.00		
5.576.100	Hot Water Heater Fund Expense	0.00		18,980.00		
5.591.100	Guatemalan Mission Expense	0.00		278.00		
5.655.100	Lutheridge Camp Expense	0.00		1,881.50		
5.670.100	Memorial/Honorarium Gifts Expense	0.00		1,681.33		
5.680.100	Mena Eckerd Endowment Fund Expense	0.00		3,600.00		
5.780.100	Staff Gifts Expense	0.00		3,022.71		
5.812.100	VBS Registration Expense	1,170.04		2,578.26		
5.837.100	WELCA Eggs for CareCuts Expense	105.82		317.02		
5.840.100	World Hunger Expense	99.99		199.99		
	Subtotal Designated Funds Expense	**$3,947.28**		**$39,031.75**		
	Total Expenses	**$46,102.87**	**$39,463.00**	**$330,473.89**	**$485,531.00**	**60**
	Difference	**($13,989.42)**	**($3.00)**	**$42,840.12**	**($12,000.00)**	

* = Income/Expense exceeds amount budgeted to date

Re: Messiah Lutheran Church - Council Packet for August 18 Meeting

From: Steve Hess (shess@miratechcorp.com)

To: jacdrisk@gmail.com

Cc: vollady4@aol.com; arkronau@yahoo.com; bbreeden_37807@yahoo.com; jwilder482@yahoo.com; clawh53@gmail.com; cristallmount@gmail.com; susanhami@gmail.com; henrik.davin@gmail.com; pastormark@messiahknoxville.org; tlcrmnc@aol.com; wdmason7@ptd.net; jwckt621@aol.com

Date: Thursday, August 15, 2024 at 11:35 AM EDT

Hi Council

This is General Fund member Giving and will help to improve the overall health of the General Fund
Unrestricted funds have fallen to $16K - about 2.4 weeks of expenses
This will move our unrestricted funds closer to 4 weeks - a healthier level

We are and can continue to spend what is needed on building repair
We can continue and are overspending the plan on building repair
The repairs are needed and important
We should continue to watch every penny of general fund spending in all other areas to maintain the health of the general fund
These are the important decisions we make daily to balance income / expenses and financial health

We need to bring forward the list of building needs with timing and make a plan to complete these items
While maintaining financial health

From: Jonathan Driskill <jacdrisk@gmail.com>
Sent: Thursday, August 15, 2024 11:17 AM
To: Steve Hess <shess@miratechcorp.com>
Cc: Michele Wilson <vollady4@aol.com>; Angela Kronau <arkronau@yahoo.com>; Rebecca Breeden <bbreeden_37807@yahoo.com>; Jack Wilder <jwilder482@yahoo.com>; Carolyn Lawhorn <clawh53@gmail.com>; Cristall Mount <cristallmount@gmail.com>; Susan Hamilton <susanhami@gmail.com>; Davin Henrik <henrik.davin@gmail.com>; Pastor Mark <pastormark@messiahknoxville.org>; Pr. Mark Cerniglia <tlcrmnc@aol.com>; Doug Mason <wdmason7@ptd.net>; Jon Toth <jwckt621@aol.com>
Subject: Re: Messiah Lutheran Church - Council Packet for August 18 Meeting

Since there is no specific designation would it be possible to put all or at least some portion of this donation into our building fund to go towards capital replacements?

Jonathan Driskill
Chair, Property Committee

On Thu, Aug 15, 2024, 10:43 AM Steve Hess <shess@miratechcorp.com> wrote:

> Please add an item to the agenda or you can vote by email today
> A member has gifted stock shares to Messiah through Thrivent - Approximate value of $12K
> We have verified the gift is for "General Fund" with no special instructions or designation
> We recommend proceeding with sale of stock and transfer of proceeds to Messiah General Fund

Please communicate your approval and we will proceed to sale and transfer
Thanks

From: Michele Wilson <vollady4@aol.com>
Sent: Wednesday, August 14, 2024 5:25 PM
To: Angela Kronau <arkronau@yahoo.com>; Michele Wilson <vollady4@aol.com>; Rebecca Breeden <bbreeden_37807@yahoo.com>; Jon Driskill <jacdrisk@gmail.com>; Jack Wilder <jwilder482@yahoo.com>; Carolyn Lawhorn <clawh53@gmail.com>; Cristall Mount <cristallmount@gmail.com>; Susan Hamilton <susanhami@gmail.com>; Davin Henrik <henrik.davin@gmail.com>; Pastor Mark <pastormark@messiahknoxville.org>; Pr. Mark Cerniglia <tlcrmnc@aol.com>; Steve Hess <shess@miratechcorp.com>
Subject: Messiah Lutheran Church - Council Packet for August 18 Meeting

Good afternoon!

I've attached the Council Packet for our meeting this Sunday at 11:00 am. Thanks to Susan Hamilton for agreeing to provide our lunch!

Please take the time to review the report prior to our meeting.

Blessings to each of you,

Michele

Fwd: 45 Golf Club Rd, Knoxville, TN 37919

From: Office (office@messiahknoxville.org)

To: arkronau@yahoo.com; vollady4@aol.com; pastormark@messiahknoxville.org

Date: Thursday, August 15, 2024 at 07:24 AM EDT

Get Outlook for iOS

From: Wyatt England <wyatt@sullivanwickley.com>
Sent: Wednesday, August 14, 2024 2:48 PM
To: Office <office@messiahknoxville.org>
Subject: 45 Golf Club Rd, Knoxville, TN 37919

Good Afternoon,

I hope that this email finds you well. We are a commercial real estate development and acquisition firm out of Atlanta. I am emailing you regarding your property at 45 Golf Club Rd, Knoxville, TN 37919. We would like to purchase an acre of this property, and I wanted to see if it is something that you would consider selling.

Feel free to reach out via email or phone with any questions.

Thanks,

WYATT ENGLAND
Land Acquisition Associate
Direct: 706.206.3366 | Mobile: 678.999.4320
4151 Ashford Dunwoody Road, Suite 155
Atlanta, Georgia 30319

SULLIVAN WICKLEY

www.sullivanwickley.com

MEMORANDUM OF UNDERSTANDING
between
MESSIAH EVANGELICAL LUTHERAN CHURCH
and
THE TEACH GROUP

1.0 PURPOSE

The purpose of this MOU is to promote a sustainable partnership and mutual understanding between the Messiah Evangelical Lutheran Church (hereinafter referred to as "MELC") at 6900 Kingston Pike, Knoxville, TN 37919 and The Teach Group (hereinafter referred to as "Teach") at 1240 Old Weisgarber Road, Knoxville, TN 37909. Both MELC and TEACH may be referred to individually as the "party" or collectively as the "parties".

2.0 SCOPE OF ACTIVITIES

MELC and TEACH aim to undertake cooperation in areas that include, but are not restricted to, the following:

a. Provided by MELC:
    a. Provide spaces inside and outside the building that are ADA compliant (for example: classrooms, bathrooms, hallway, outdoor playground, Fellowship Hall [on an as needed basis]) on the days and hours agreed upon by both parties.
    b. Weekly cleaning service to keep spaces tidy and hygienic.
    c. Accessible parking / drop-off and pick-up area.
    d. Refrigerator space for snacks / lunches.

b. Provided by TEACH:
    a. Facilitation of PLAY class that serves children with autism and/or behavioral challenges. PLAY is a contrived preschool class where skills such as following directions in a group, communication and language, social skills, and play skills are taught.
    b. Monthly fee.

3.0 MONTHLY FEE & TERM

MELC agrees to accept a rate of $315 per month through December 31, 2024. This fee will be reviewed by the MELC Executive Council and TEACH for renewal or revision for the January 2025 through June 2025 time period. The term can be extended only by agreement of MELC and TEACH.

4.0 LIABILITY

No liability will arise or be assumed between MELC or TEACH. TEACH will maintain a commercial general liability insurance policy in an amount of no less than one million dollars ($1,000,000.00). MELC shall be named as an additional insured on the commercial general liability policy and the Certificate of Insurance shall include an additional endorsement page.

5.0 GOVERNING LAW

The Memorandum shall be construed in accordance with the laws of the State of Tennessee.

6.0 ASSIGNMENT

Neither party may assign or transfer the responsibilities or agreement made herein without the prior written consent of the non-assigning party, which approval shall not be unreasonably withheld.

7.0 AMENDMENT

The Memorandum may be amended or supplemented in writing, if the writing is signed by the party obligated under this Memorandum.

8.0 SIGNATORIES

This Agreement shall be signed on behalf of Messiah Evangelical Lutheran Church by Angela Kronau, Council President, and on behalf of The Teach Group by Dr. Sarah King. This Agreement shall be effective as of the date it is signed by both parties.

By: _____ 7/31/24

Messiah Evangelical Lutheran Church — Date
Angela Kronau, Council President

By: Dr. Sarah King, Ed.D, BCBA, LBA 7-31-24

The Teach Group — Date
Dr. Sarah King, Ed.D., BCBA

TRISURA

Trisura Specialty Insurance Company
210 Park Avenue, Suite 1400
Oklahoma City, OK 73102

In consideration of the payment of premium when due, it is agreed and understood that, solely with respect to the Insured(s) set forth in Item #1 of this Declarations, the PRIVATE EDUCATORS PROFESSIONAL LIABILITY POLICY on Form 4000 PL applies as specified.

PRIVATE PRACTICE EDUCATORS PROFESSIONAL LIABILITY POLICY

DECLARATIONS PAGE

THIS IS A CLAIMS MADE AND DEFENSE WITHIN LIMITS POLICY. PLEASE READ IT CAREFULLY.
Limits of Liability may be reduced or completely exhausted by Defense Expenses, as defined in the policy.

Policy Number: TPP-0000640861-06 **Client ID:** 0000055102 **Association:** AAE

ITEM 1. The Teach Group Llc
1240 Old Weisgarber Rd
Knoxville, TN, 37909

ITEM 2. **Policy Period** - At 12:01 AM at the address shown in Item 1. above.

Inception Date: 06/20/2024 **Expiration Date:** 06/20/2025

ITEM 3. **Retroactive Date:** 6/20/2012

Surplus Lines Producer's Name & Address:

Richard F. Jones, Jr., Agent / Broker
c/o FORREST T. JONES & COMPANY, INC.
P.O. Box 418131
Kansas City, MO 64141-8131
Phone: (800) 821-7303

ITEM 4. **Limits of Liability (including Defense Costs, Charges and Expenses):**

A. **Private Educators Professional Liability Acts or Omissions:**	$1,000,000	Per **Claim** Limit of Liability
B. **Private Educators Professional Liability Acts or Omissions:**	$3,000,000	Aggregate Limit for all **Claims**
C. Off-Premises Liability Coverage:	N/A	Per **Claim** Limit for each **Occurrence**
D. Off-Premises Liability Coverage:	N/A	Aggregate Limit for all **Claims**
E. Activities as a Board of Certification member:	$25,000 $25,000	Per Claim Aggregate Limit for all **Claims**
F. Sexual Misconduct Defense Coverage Limit:	$25,000 $25,000	Per **Claim** Aggregate Limit for all **Claims**
G. Psychologists & Counselors **Defense Expense** Coverage Limit:	N/A N/A	Per **Claim** Aggregate Limit for all **Claims**

ITEM 5. Deductible:

A. **Private Educators Professional Liability Acts or Omissions**:	$500	Per **Claim** Deductible
B. Off-Premises Liability Coverage:	N/A	Per **Claim** Deductible

ITEM 6. **Basic Premium:** $3,822.64
Surplus Lines Tax: $191.13
Total: $4,013.77

Stamping Fee*: $0.00

ITEM 7. **Insured's** Educational Specialty: See Item #2 of attached Application
The following forms and endorsements are made a part of and attached to this policy at inception:

Form Number	Form Name
1003 PL 0120	Certificate of Insurance
1005 PL 0123	Policy Change Form
4010 PL 0120	Declarations Page
4025 PL 0120	Additional Ins Designated Person Or Organization
Private Practice Proposal - PNBT_TIE	PNBT Proposal - TIE
Private Practice Proposal - PNBT_TIE	PNBT Proposal - TIE

Richard F. Jones
(Authorized Representative)

Issue Date: 06/20/2024

Association Member of Trust for Insuring Educators

This Insurance Contract is issued by a nonadmitted insurer which is not licensed by nor under the jurisdiction of the South Dakota Insurance Director.

*State Stamping Fees are paid by FTJ in all states except Pennsylvania.

Trisura Specialty Insurance Company
210 Park Avenue, Suite
1400
Oklahoma City, OK 73102

POLICY CHANGES

**THIS ENDORSEMENT CHANGES THE POLICY
PLEASE READ CAREFULLY.**

Policy Number: TPP-0000640861-06

Policy Change Number: 001

Client ID: 0000055102

Policy Change Effective Date: 07/31/2024

Company: Trisura Specialty Insurance Company

Name of Insured: The TEACH Group LLC

Coverage Parts Affected: Private Educators Professional Liability

Changes:

In consideration of the premium shown below it is hereby understood and agreed that the following changes are added to the policy:

- Additional Insureds Added/Removed - See New Declaration Page & Endorsements

Premium:	$84.54
Surplus Lines Tax:	$4.23
Total:	$88.77
Stamping Fee*:	$0.00

*State Stamping Fees are paid by FTJ in all states except Pennsylvania.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - DESIGNATED PERSON OR ORGANIZATION

This endorsement modifies the insurance provided under the following:

PRIVATE EDUCATORS PROFESSIONAL LIABILITY POLICY - 4000 PL

This endorsement modifies the insurance provided under the following:

SCHEDULE

Name Of Person Or Organization:

Messiah Evangelical Lutheran Church
6900 Kingston Pike
Knoxville , TN 37919

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

Section VI - Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for damages and **Defense Expenses** resulting from a **Private Educators Professional Liability Act or Omission** committed, in whole or in part, by you or those acting on your behalf, in connection with the performance of, or failure to perform, your professional educational duties.

All other terms, conditions, definitions and exclusions remain the same.

TRISURA

Trisura Specialty Insurance Company
210 Park Avenue, Suite 1400
Oklahoma City, OK 73102

CERTIFICATE OF INSURANCE

Named Insured: The TEACH Group LLC
1240 Old Weisgarber Rd
Knoxville, TN 37909

Policy Number: TPP-0000640861-06

Client ID: 0000055102

Policy Effective Date: 07/31/2024

Policy Expiration Date: 06/20/2025

This Certificate is provided only for information purposes and confers no rights upon the Certificate Holder. It does not amend, extend, reduce or otherwise alter the coverage afforded by the policy shown above, nor does it constitute a contract between this insurance company, or its authorized representative or producer, and the Certificate Holder.

IMPORTANT: If the Certificate holder is an additional insured, the policy must be endorsed.

Surplus Lines Producer's Name & Address:

Richard F. Jones, Jr., Agent / Broker
c/o FORREST T. JONES & COMPANY, INC.
P.O. Box 418131
Kansas City, MO 64141-8131
Phone: (800) 821-7303

Certificate Holder:

Messiah Evangelical Lutheran Church
6900 Kingston Pike
Knoxville, TN 37919

Coverage: Additional Insured - Professional Liability

Coverages:

This certifies that the policy of insurance shown above was issued to the Named Insured above for the policy period stated herein, commencing with the policy effective date and concluding with the policy expiration. The insurance afforded by the policy is subject to all the terms, exclusions and conditions of such policy in spite of any requirement, term or condition of any other contract or document with respect to which this Certificate may pertain. The Limit of Liability

Private Educators Professional Liability (Claims Made)

Limit of Liability:

$1,000,000 per **Claim** Limit of Liability

$3,000,000 Aggregate Limit for all **Claims**

Deductible: $500

Off Premises

Limit of Liability:

N/A per **Claim** Limit of Liability

N/A Aggregate Limit for all **Claims**

Deductible: N/A

Cancellation:
In the event the above described policy is cancelled before the expiration date shown above, notice of cancellation will be delivered in accordance with the policy provisions.

Richard F. Jones Jr.
Authorized Representative

Issue Date: 7/31/2024

Trust for Insuring Educators

Private Practice Professional Liability Insurance

Underwritten by Trisura Specialty Insurance Company

Rated A- (Excellent) by A.M. Best

Endorsement Proposal Valid Until 08/30/2024

Policy Number: TPP-0000640861-06

Client ID: 0000055102

The TEACH Group LLC
Sarah Harrison King
1240 Old Weisgarber Rd
Knoxville, TN 37909

Policy Period At 12:01 AM at the address above - Inception Date: 06/20/2024 **Expiration Date: 06/20/2025**

Retroactive Date: 6/20/2012 Endorsement Effective Date: 07/31/2024

Coverage	Premium
Additional Insured Amendment	

Totals:	$84.54
Surplus Lines Taxes:	$4.23
Total Amount Due:	$88.77

PLEASE NOTE - THIS IS A CLAIMS MADE AND REPORTED POLICY AND DEFENSE WITHIN THE LIMITS

By accepting this proposal and paying the total amount due, you agree to the terms and conditions of this policy once issued.

Trust for Insuring Educators

Private Practice Professional Liability Insurance

Underwritten by Trisura Specialty Insurance Company

Rated A- (Excellent) by A.M. Best

Endorsement Proposal Valid Until 08/30/2024

Policy Number: TPP-0000640861-06

Client ID: 0000055102

The TEACH Group LLC
Sarah Harrison King
1240 Old Weisgarber Rd
Knoxville, TN 37909

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Brothers At Messiah

August 5, 2024 Meeting Minutes

Present: Larry Perry, Pastor Mark Cerniglia, Dennis Osland, Rich Paton, Jack Wilder, Tom Cole, Paul Jones, Jon Driskill, Mike Driskill, Gordon Burghardt, Larry Moeller, Jeffrey Crick (guest speaker), and Don Lawhorn

We met in the church fellowship hall and enjoyed a meal of fried chicken, salads, slaw, and desserts.

Don welcomed Larry Perry, a first-time attendee to BAM, and Jeffrey Crick, our guest speaker, to the meeting.

Don asked that all remember Bob and Cathy Hutchins, as Cathy experienced a medical emergency recently and Bob is caring for her at home. We are thankful for Leslie Wilder's return to our Sunday worship service after her recent injury.

Don mentioned that the Worship Committee has rescheduled the outdoor worship service for September 15. We will be asked to erect and strike the tent before and after that date.

Don introduced Jeffrey Crick, a Community Health Worker with Interfaith Health Center, as our guest speaker. Jeffrey presented the mission, organization, and some recent care data for Interfaith, as well as how patients qualify for services at the Center. He encouraged us to contact him in the future with any questions or patient referrals. We thanked Jeffrey for his presence and presentation.

Don reminded the group that he will be stepping aside from his Coordinator role after the meeting, and encouraged all to consider taking it on for the next year. Don assured everyone that he, Doug Mason, Larry Moeller and others would help the next Coordinator every step along the way.

We adjourned our meeting at 7:45 pm.

Diversity and Justice notes from Aug.12th meeting

In attendance-were-Sandy Booher, Martha MacCabe, Don Lawhorn, Rebecca Breeden, Pr. Mark, Jack and Leslie Wilder.

Messiah's Ministry Fair

Sunday Sept. 15 in the Fellowship Hall. Pr. Mark suggested that we get some trifold bulletin boards and put flaps on them to show examples of different types of diversity. Martha and Leslie will be working on this together. Categories suggested include – LGBTQIA+, Racial diversity, immigrant peoples, Ageism,socio economicdiversity , neurodiversity, and persons with disabilities.

Christian Nationalism –

was discussed. Pr. Mark has also discussed this with Tom Cole. Pr. Mark will be the presenter for three adult Sunday School classes. Dates to be determined, but before the election. The third session will be on Christian Nationalism. If there appears to be interest generated D&J will offer a session of discussion on the topic as well.

The Highlander Research and Education Center-social justice leadership training school

Is having it's 92nd Homecoming celebration on Sept.7. We have been invited to attend or volunteer. The event will cover two locations consecutively. It will begin in New Market at the Highlander Center at 9AM and will resume with lunch here in Knoxville at the Beck Center. Festivities and workshops will conclude at 7PM. Reservations are being taken now and admission is $35.00. The theme of the day is, "breaking ground and building community."

PIK -Pride Interfaith Knoxville

The next meeting will be on Thursday Aug. 15th from 11:30 – 1:00. It will be held at Temple

Beth-el. Mike Driskill has volunteered to be in attendance.

What follows are potential display and presentation Sundays through December. Volunteers are needed to produce the display/presentation events.

Sept/Oct. Hispanic history month Possibility for bishop Castillo to be part of this.

October – Disability/mental health month or

LGBTQIA+ history

November – Native American History

Another suggestion for coverage was different faiths. We have knowledge of a leader in the Knoxville Islamic community who we might ask to come and speak

The final item of business was a request that the committee reflect on the possibility that we increase the number of meetings per year. This item will be revisited at our next meeting in October.

_____Property_____ COMMITTEE MINUTES

Day/Date of Meeting

Committee members present: N/A

Committee members absent: N/A

Guests present: N/A

Meeting held: ❒ In Person ❒ via Zoom

OLD BUSINESS

1. Need to install parts to repair bad Gas stove pilots
2. Evaluating other options to complete the exterior metal surface repainting work at a lower cost – Likely with volunteers. Front Steel Posts prepped and painted during God's Work Our Hands Day. Will review over time. More work to do.
3. Converting existing Fluorescent Lighting to LED. LED Lamps have been ordered – Lamps have arrived and are currently stored at Messiah. Need to develop a team and plan to execute install of lamps.
5. Ed Wing Women's Room Handicapped toilet repaired but is leaking again. Need to call Plumber back.
6. Working thru Tennessee InterFaith Power and Light (TIPL) to have TVA/KUB conduct an Energy Audit of Messiah Lutheran's Facility. Energy Audit conducted 21 March. Report received 15 Aug 24 – Copy Attached
7. Mary Philips has suggested adding a microphone or two in the Sanctuary so that the Hand Bells can be heard better when streaming the Service – Property to review
8. A significant change in our water usage occurred in April. After repeated high usage discovered a second toilet in the Ed Wing Ladies room was dripping water. Shutting off this toilet appears to have resolved the high water usage. Need to bring in a plumber.

ACTION ITEMS FOR COUNCIL

Discuss Financial Gift mentioned by Steve Hess

Next Meeting: *TBD*

Minutes submitted by: Jonathan Driskill, Committee Chair

Energy Audit

for

Messiah Lutheran Church

Knoxville, Tennessee
August 2024

Prepared by:
M. Brent Tippens
Senior Power Utilization Engineer
Tennessee Valley Authority
Northeast Customer Delivery
Knoxville, Tennessee

Provided by:
Candace Scruggs
Key Account Representative
Knoxville Utilities Board
Knoxville, Tennessee

TENNESSEE VALLEY AUTHORITY

400 West Summit Hill Drive, Knoxville, Tennessee 37902-1401

August 15, 2024

Mr. Jonathan Driskill
Messiah Lutheran Church
6900 Kingston Pike
Knoxville, Tennessee 37919

Dear Mr. Driskill:

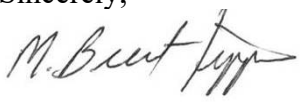
This letter is in response to a request by Candace Scruggs of the Knoxville Utilities Board (KUB) to have TVA perform an energy audit for the Messiah Lutheran Church located in Knoxville, Tennessee. We performed a walk-thru energy audit to assist you in determining ways to conserve energy. The purpose of this study is to:

- Assist you in determining ways to conserve energy.
- Document our recommendations that provide cost savings for your church.

There is no warranty or guarantee of any kind expressed or implied as to the adequacy or cost effectiveness of the recommendations stated within this letter. Any use of this report or any information contained therein shall be at the user's sole risk and responsibility.

This service has been provided to you at no charge by the Knoxville Utilities Board (KUB). KUB and TVA are constantly seeking to improve the level and value of the services we provide. We appreciate your interest in our program and hope you will take advantage of our recommendations. If you have any questions regarding this service, or need further assistance, please do not hesitate to call me at (865) 207-5835.

Sincerely,



M. Brent Tippens
Senior Power Utilization Engineer
Northeast Customer Delivery

Enclosures
cc (enclosures):
Candace Scruggs
Knoxville Utilities Board
PO Box 59017
Knoxville, Tennessee 37950

TABLE OF CONTENTS

Executive Summary

At the request of Candace Scruggs of the Knoxville Utilities Board (KUB), TVA's Comprehensive Services Program (CSP) staff was asked to visit the Messiah Lutheran Church to offer energy savings recommendations.

The objectives of the energy audit are to evaluate the site's energy consumption, establish baselines for energy consumption, and offer recommendations to improve your church's energy efficiency.

The walk-through energy audit was performed on **21 March 2024** and involved interviewing site-operating personnel, a review of the church's utility bills, and a walk-through of the church to become familiar with the operation of the church and to identify possible opportunities for energy savings.

The report is divided into Energy Conservation Opportunities, or ECOs. These ECOs are areas we identified that could help save energy at your church. Refer to Table 1 below for a summary of estimated savings from the ECOs identified for your church.

Recommendation Number	kW Savings	kVA Savings	kWh Savings	MMbtu Savings	Cost for Rec.	Total Yearly Savings	Payback (Years)
HVAC ECOs							
ECO-1 Programmable TSTATS			5,092	598	$0	$2,489	0.00
Lighting ECOs							
ECO-2 Lighting			21,154	0	$4,514	$3,385	1.33
Total			26,246	598	$4,514	$5,874	0.77

Table 1 – ECO Summary Table

If all identified ECOs were to be implanted, they would provide the following estimated benefits to Messiah Lutheran Church:

- Total annual energy savings: **26,246 kilowatt-hours**
- Total annual cost savings: **$5,874**
- Total annual CO_2 emissions reduction: **7.37 tons/year**
- Total estimated implementation cost: **$4,514**
- Combined simple payback: **0.77 years**

Project cost estimates were based upon rough order of magnitude cost estimates from contractors and information available online. The cost estimates presented in this report should be used to select projects for investment grade development and should not be used for budget development or acquisition requests.

Site Information

The Messiah Lutheran Church is located at 6900 Kingston Pike in Knoxville, Tennessee. The total approximate floor area of the church buildings is approximately 24,000 ft^2. The church is supplied with a 208Y/120-volt three phase electric service from KUB that is billed under Account #6918210650.

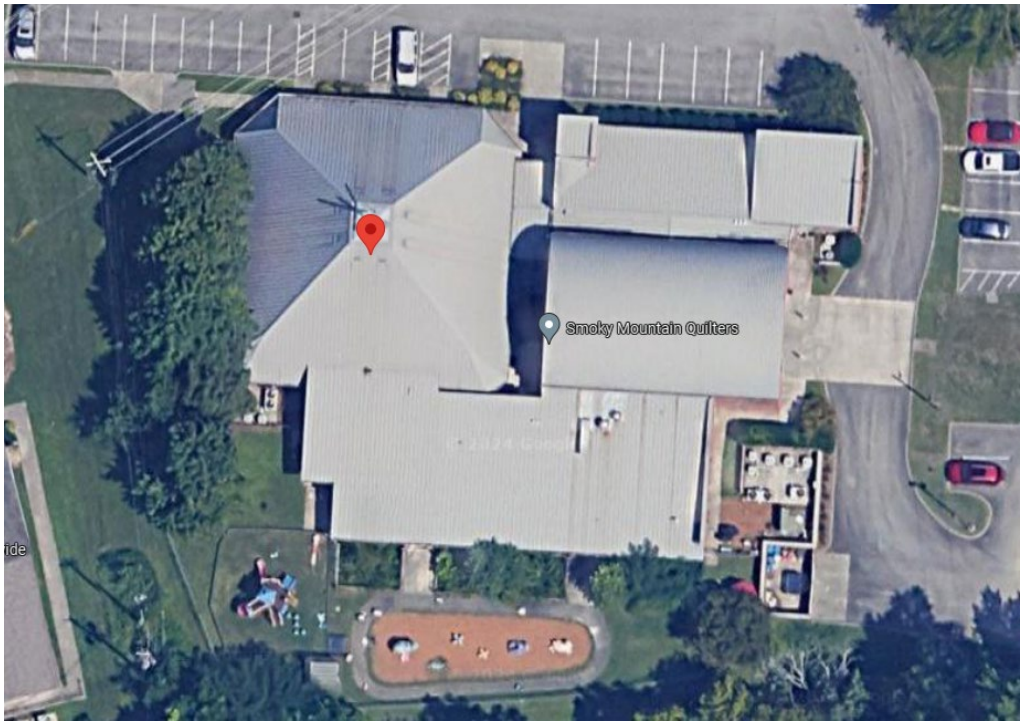


Figure 2 – Aerial View from Google Earth

The sanctuary is primarily occupied on Sunday mornings. The administration offices are occupied throughout the week. The educational wing is occupied throughout the week.

The church has a small commercial kitchen with a natural gas range, natural gas oven, commercial refrigerators and commercial ice maker.

Cooling is provided by DX cooling units with most units having an efficiency rating of 12 SEER. Heating is provided by natural gas furnaces with an efficiency rating of 90% AFUE. The HVAC units have been well maintained and are in good working order although the units are nearing end of life.

Billing Explanation

The first step in determining potential energy savings is to understand how your electric billing structure works. Electric customers are categorized based on their monthly energy consumption (usage) and power demand. Power, measured in kilowatts (kW), is the rate at which energy is used. Demand is the average power required by an electric customer during a 30-mintue time interval. As an example of how energy is consumed consider the two cases below. Five 1000-watt light bulbs will contribute 5 kW to the demand and will consume 5 kWh of energy if switched on for one hour. One 1000-watt light bulb will contribute 1 kW to the demand and will consume 5 kWh of energy if switch on for five hours. In both cases the energy consumption (usage) is the area under the blue line and the demand is the maximum value on the y-axis.

Larger loads such as HVAC equipment will obviously cause your power demand to increase and will consume energy at a faster pace than smaller loads such as lighting. However, even a small load that is left on continually can consume a significant amount energy during each billing period.

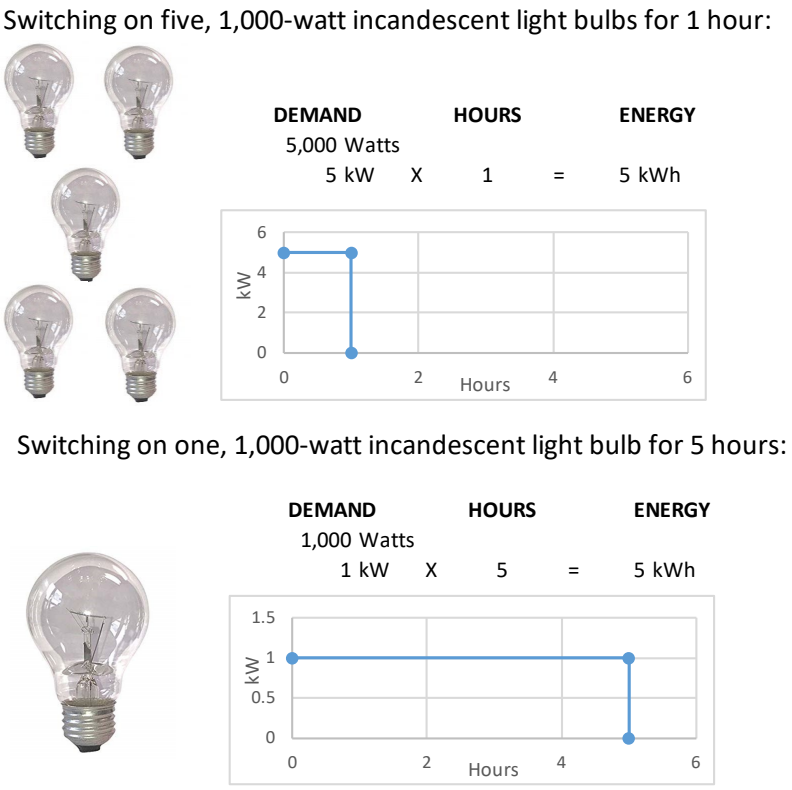


Figure 3 – Demand and Energy Example

The electric account (Account #6918210650) for the church is billed under the GSA-2A TOU (Time-Of-Use) rate structure. The purpose of the General Power Time-of-Use Rate pilot program is to enable a phased implementation of Time-of-Use rates for all KUB General Power Customers. The GSA-2A TOU rate category applies to electric customers with a contract demand or highest 12-month power demand of greater than 50 kW but not more than 100 kW. As a GSA-2A TOU customer of KUB, your church pays monthly electric costs based on the following three components:

1. Base customer charge - a flat monthly charge used to cover the overhead expenses incurred while serving a customer regardless of actual energy usage or demand.
2. Usage charges ($/kWh) - charges associated with the energy consumption used during the billing period. Electric usage rates fluctuate monthly due to TVA's fuel cost adjustment (FCA).
3. Demand charges ($/kW) - charges based on the highest power demand during any 30-minute time interval of the billing period. The demand charges reflect the utilities' fixed costs of providing a given level of power availability to the customer.

Energy consumed from April through October on weekdays between 2 PM to 8 PM or from November through March on weekdays between 5 AM to 11 AM is considered On Peak. All other hours are considered Off Peak. Weekends and Holidays (New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day) are also considered Off Peak. The revenue meter for your church is programmed to store energy consumption into two separate buckets or registers: one for On Peak energy and one for Off Peak energy. Since weekends are Off Peak churches should be able to benefit from TOU rates.

Off Peak energy rates are approximately 42% of On Peak energy rates. Consider the cost to run a 3-ton HVAC unit during Off Peak hours verses On Peak hours. If the HVAC unit runs one hour the energy consumption would approximately 3 kWh. The energy cost if the unit ran before 1 PM (Off Peak) on a weekday in August would be $0.30 (3 x $0.10130). The energy cost if the unit ran at 3 PM (On Peak) on a weekday in August would be $0.69 (3 x $0.23185) or 2.3 times more per hour. If possible, you should avoid scheduling any church or community activities during On Peak hours. You might even be able to program your existing thermostats for lower or higher temperature setpoints during On Peak hours to ensure that cooling and/or heating is minimized during On Peak hours.

We have included a hypothetical billing showing what your bill would have been under standard GSA-2 rates. Under GSA-2 rates your electric bills would have been $23,181.54 as compared to $21,171.12 under the GSA-2A TOU rates, which is a reduction of 8.6%. Without even realizing that your church was on a TOU rate, your church has already saved $2,010.42 this past year by participating in KUB's TOU pilot program.

The enclosed 12-month billing history shows the energy consumption (kWh) and real power demand (kW) over the past twelve months for Account #6918210650. This past year, the total accumulated energy consumption for the church was 131,640 kWh with the average monthly energy consumption being 10,970 kWh. We assumed a blended average electric rate or cost per kWh of $0.16 when computing energy costs associated with the various lighting retrofits and other recommendations detailed within this report. Refer to the enclosed 12-month billing history for further details.

As with most electric accounts for commercial and worship buildings, energy consumption is heavily dependent on outdoor air temperature. In the enclosed 12-month billing history, we have included a graph entitled, "Monthly Energy Usage (kWh) and Cooling Degree Days" and a graph entitled, "Monthly Energy Usage (kWh) and Heating Degree Days". Cooling Degree Days (CDD) and Heating Degree Days (HDD) are numerical representations indicating the need for cooling in the summer and the need for heat in the winter. Daily numerical values are computed by taking the difference of the average daily temperature and a base temperature of 65 °F. A base temperature of 65 °F is commonly used because there is little to no demand for cooling or heating at that temperature. For example, the average daily temperature reported at McGhee Tyson Airport on July 17th, 2020, was 85 °F which equates to 20 CDD (85 - 65). The values shown on the graphs are the summation of daily CDD and/or HDD between the read dates during each billing cycle.

Load Factor

Load factor is defined as the ratio of the average load to the maximum load over a specific period. When analyzing electric utility bills, the load factor is the ratio of the actual energy (kWh) used during the billing period to the maximum theoretical energy usage if demand remained constant for the entire billing period. Monthly (30-day billing period) load factor can be calculated by:

$$\left(\frac{Actual\ Monthly\ kWh}{Peak\ Power\ Demand\ in\ kW\ x\ 30\ days\ x\ 24\ hour/day}\right)\ x\ 100$$

The average load factor for the Messiah Lutheran Church was 25.6%. Load Factor can also be used to estimate the hours that the building was occupied either monthly or annually. Based on the Load Factor, the building was occupied approximately 2,242 hours this past year.

Energy Use Intensity or EUI

The U.S. Department of Energy's Commercial Buildings Energy Consumption Survey (CBECS) is a national sample survey that collects information on the stock of U.S. commercial buildings, including their energy-related building characteristics and energy usage data (consumption and expenditures).

Energy Use Intensity or EUI is a way to compare energy use between buildings of similar functions. Generally, a low EUI signifies good energy performance, but some property

types will use more energy than others. For example, a library uses relatively little energy compared to a fast-food restaurant.

To calculate EUI, the annual kilowatt-hours is multiplied by 3.412 to obtain kBTUs. kBTU is equal to 1,000 BTUs. A British Thermal Unit (BTU) is a common unit to define energy. Any natural gas usage in the building is also included in the calculation. The buildings annual energy use is summed together for a total kBTU. This is divided by the total square footage of the building to determine EUI which can be expressed relative to either *site* or *source* energy. Site energy is most often referenced in the design community. In simple terms, site EUI is the energy consumed at the building site and is reflected in the utility bills paid by the owner. Source energy is a more accurate representation of a building's energy footprint as it considers the site energy as well as the energy lost during production, transmission and delivery to the site.

We combined the electric bill and natural gas bill to compute the EUI for your church. The site Energy Use Intensity (EUI) for the Messiah Lutheran Church is approximately **44 kBTU/ft^2**. The EUI for the national average worship facility is 30.5 kBTU/ft^2. It should be noted that the national average is nationwide, and energy usage varies significantly by region due to the weather. Refer to the enclosed EUI calculations for further details.

Findings and Recommendations

ECO-1 HVAC

Heating and cooling accounts for a significant portion of your overall annual energy consumption with heating accounting for approximately 39% of your overall energy costs and cooling accounting for approximately 18% of your overall energy costs.

Thermostat Temperature Set-back

You can lower your heating and cooling costs by simply resetting your thermostat when the spaces are unoccupied. You can do this automatically without sacrificing comfort by installing an automatic setback or programmable thermostat. Using a programmable thermostat, you can adjust the times you turn on the heating or air-conditioning according to a pre-set schedule. Programmable thermostats can store and repeat multiple daily settings (six or more temperature settings a day) that you can manually override without affecting the rest of the daily or weekly program.

The smaller the difference (ΔT) between the indoor and outdoor temperatures, the lower the overall cooling and heating costs will be. During occupied periods, TVA recommends that thermostats should be set at 68 °F (ASHRAE suggests between 69 and 71 to maintain comfort) during the heating season and 78 °F (ASHRAE suggests between 75 and 77 to maintain comfort) during the cooling season to maximize energy savings. ASHRAE is an acronym for **A**merican **S**ociety of **H**eating, **R**efrigerating and **A**ir-Conditioning **E**ngineers and is responsible for publishing well recognized standards and guidelines relating to HVAC systems and issues. During unoccupied periods, the cooling set point should be

raised 10 to 12 °F and the heating set point should be lowered 10 to 13 °F. For every degree that the thermostat is turned back (set lower during heating season and set higher during cooling season) energy is saved. The typical HVAC unit uses 2% more energy for cooling for every degree that the thermostat is set below the recommended cooling set point and 5% more energy for heating for every degree that the thermostat is set above the recommended heating set point.

As shown in Figure 4, your church is already equipped with programmable thermostats. Verify that the thermostats are properly programmed so that heating and cooling equipment isn't running when the building is unoccupied. A programmable thermostat will allow the equipment to begin heating or cooling a space so that it is brought to a comfortable temperature before occupancy. It will also ensure that maximum energy savings are achieved by setting back the temperature and allowing the equipment to remain off as long as possible without jeopardizing indoor air quality.

The sanctuary is set to maintain a constant temperature during the cooling and heating seasons. Minimizing temperature and/or humidity swings in the sanctuary helps to keep musical instruments such as the pipe organ in good working order. Other areas of the church are utilizing very marginal thermostat setbacks. If you can reduce your cooling and heating costs by 10% by employing wider thermostat setbacks in the areas of the church that have a variance in occupancy, you should be able to save approximately $2,489 per year. Since all is required is a simple programming change the payback would be immediate.

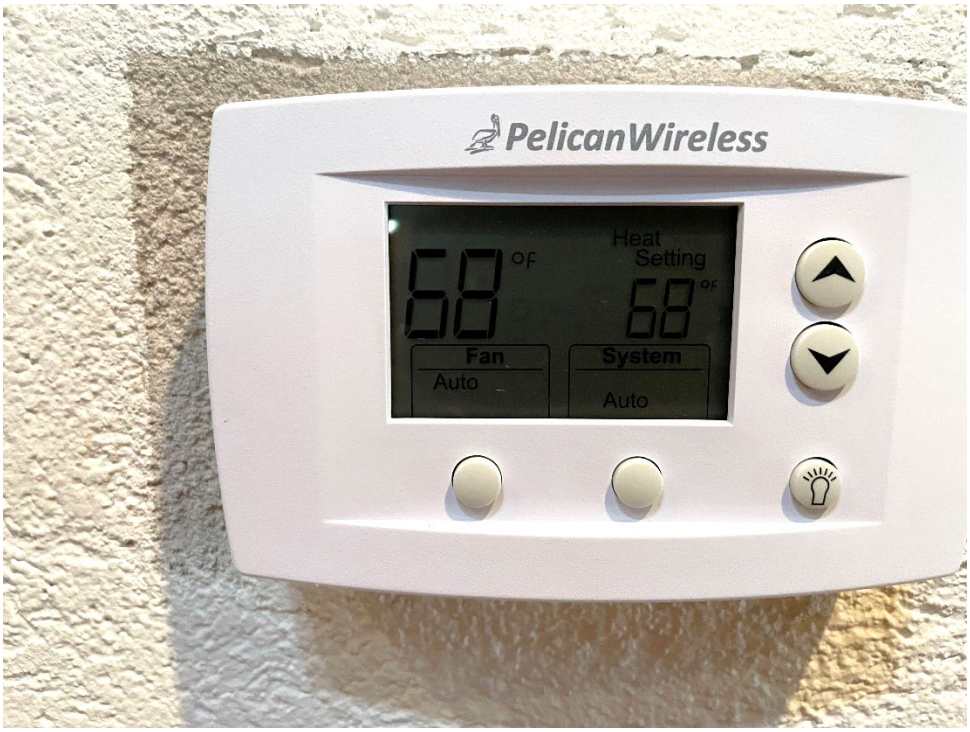


Figure 4 – Existing Standard Programmable Thermostats

Air Pear Destratification Fan

With the high ceilings in the sanctuary, it might be difficult to maintain a comfortable temperature during church services. In the winter, the building heat will migrate upwards causing the occupants to feel chilly. During the summer, the cooling equipment may short cycle and have difficulty removing humidity from the space. You may consider installing destratification fans that will gently move the air throughout the sanctuary and help make the space more comfortable. There are a few manufacturers with products that will suit your needs. It is estimated that two small fans like the Airius or similar could adequately provide the required air turnover. Please see the sample product specification in the Appendix for more information

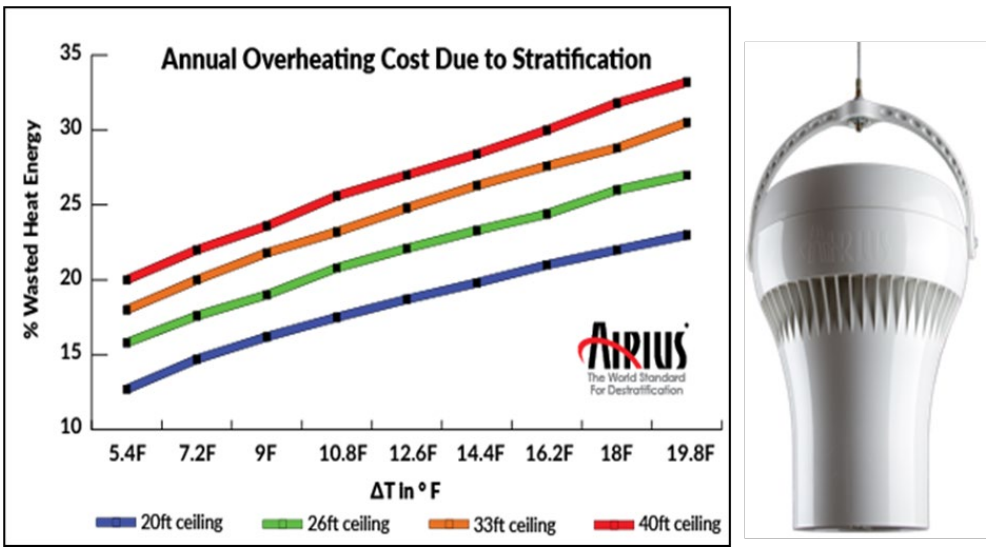


Figure 5 – Airius Air Stratification Fan

Educational Wing Basement Humidity

High humidity has led to a moisture problem in the basement of the educational wing. Despite running dehumidifiers, the issue persists. TVA recommends installing a whole home dehumidification system like Aprilaire's Model 1870/1870W. We came across another church utilizing the Aprilaire Model 1870/1870W and they reported that they haven't had any issues with humidity levels after installing the dehumidification system.

ECO-2 Lighting

Linear fluorescents are among one of the most common light sources used in commercial and industrial applications today. T12 lamps and magnetics ballasts have been utilized in linear fixtures for well over 80 years. Energy efficient T8 lamps and electronic ballasts have replaced the energy inefficient T12 lamps and magnetic ballasts. The nomenclature for fluorescent lamps is simple – the "T" in T8 denotes tubular and the "8" denotes 8 eighths of an inch in diameter (1 inch diameter). As shown below, the older energy inefficient T12 lamps are 1.5 inch in diameter. The newer energy efficient T8 lamps are 1 inch in diameter.

Figure 6 – Liner Fluorescent Lamps Diameter

LED T8 Tubes

LEDs or **L**ight **E**mitting **D**iodes are rapidly gaining acceptance in the commercial lighting arena. Currently there are three types of LED T8 Tubes on the market that are suitable for replacement for existing T12 or T8 lamps. Unlike linear fluorescent technology, LED lighting technology does not require ballasts. Manufacturers of LED T8 Tubes have developed several different solutions of dealing with the unnecessary ballasts. These solutions include bypassing the existing ballast, replacing the existing ballast with a new external LED driver, or incorporating an internal driver that can operate in conjunction with the existing fluorescent ballast. The three types of LED T8 Tubes that are commercially available are:

1) LED T8 Tubes with internal driver that operates from line voltage
2) LED T8 Tubes with remote external driver
3) LED T8 Tubes with internal driver that operates on existing ballast

LED T8 Tubes with internal driver that operates from line voltage

The internal driver for this type of LED T8 Tube is designed to operate from line voltage. The existing ballast(s) must be removed from each fixture and the line voltage (incoming supply voltage to fixture) must be rewired to the fixture's socket(s) by a qualified electrician. By bypassing the ballast(s), wasted power is eliminated as well as one less part to maintain in the future. However, the required electrical modifications can be dangerous. Strict safety measures should be adhered to. The electrician should be informed to utilize

the proper color and gauge of wire when rewiring the fixture's socket(s). This type of installation may void the UL listing of the existing fixture(s) which could lead to serious consequences in the event of fire – insurance policies may not cover damages.

LED T8 Tubes with remote external driver

This type of LED T8 Tube is designed to operate from a remote driver used to power the LED T8 Tubes. For this type of installation, the existing ballast(s) are removed and replaced with a remote driver. One remote driver can power multiple LED Tubes. The remote driver is virtually compatible with most all fluorescent fixtures. The remote driver and LED T8 Tubes are dimmable and work well with lighting control systems. Although, this type of installation requires electrical modifications, the modifications are much safer as the fixture's sockets are operating at a reduced voltage level.

LED T8 Tubes with internal driver that operates on existing ballast

This type of LED T8 Tube has an internal driver that is compatible with most existing electronic ballast(s). The LED T8 Tubes simply plug directly into the most common linear fluorescent fixtures. The drawback of this setup is that the life of the LED T8 Tubes will be dependent on the longevity of the existing ballast(s). More than likely, the ballast(s) will require replacement well before the long-lasting LED T8 Tubes. Also, you will need to ensure that your existing ballast(s) are compatible with whichever bulb manufacturer you choose.

4x2 Linear T8 Fluorescent Fixtures

The administrative offices and educational wing classrooms are illuminated via 4x2 linear fixtures equipped with 32-watt T8 lamps and electronic ballasts. Each of the 4x2, 4-lamp fixtures consume approximately 121.6 watts (4 x 32 x 0.95) per fixture. Each of the 4x1, 2-lamp fixtures consume approximately 60.8 watts (2 x 32 x 0.95) per fixture. TVA recommends converting the existing T8 fluorescent fixtures to LED.

By simply replacing the existing 32-watt T8 lamps with 15-watt T8 LED lamps you should be able to lower your fixture wattage from 121.6 watts to 60 watts – a reduction of 50.6%. You should be able to save **$20.00** annually per fixture by swapping out the existing T8 lamps with T8 LED lamps in the 4-lamp fixtures that operate 2080 hours per year. You should be able to save **$84.16** annually per fixture by swapping out the existing T8 lamps with T8 LED lamps in the 4-lamp fixtures that operate 24/7. The cost of a 4-foot 15-watt T8 LED lamp is approximately $4 per lamp but you have been able to locate some for $2.50 per lamp by buying in bulk. T8 LED lamps are long lasting and are rated for over 100,000 hours. Refer to Table 7 for further details.

By simply replacing the existing 32-watt T8 lamps with 14-watt T8 LED lamps in the 4x1, 2-lamp fixtures you should be able to lower your fixture wattage from 60.8 watts to 30 watts – a reduction of 50.6%. You should be able to save **$9.92** annually per fixture by swapping out the existing T8 lamps with T8 LED lamps in the 2-lamp fixtures. The cost of a 4-foot 14-watt T8 LED lamp is approximately $4 per lamp but you have been able to locate some for $2.50 per lamp by buying in bulk. T8 LED lamps are long lasting and are rated for over 100,000 hours. Refer to Table 8 for further details.

4x2, T8 Linear Fluorescent	Base		Option 1	
Fixture Type	4x2 Linear 32-watt T8s (4-lamp)		15-watt LED T8 Tubes (4-lamp)	
Lamps per Fixture	4		4	
Lamp Wattage (Nominal)	32		15	
Fixture Wattage *Including Ballast(s)*	121.6		60	
Annual Operating Hours	**2080**	**8760**	**2080**	**8760**
Incremental Cost per kWh	$0.16		$0.16	
Annual Energy (kWh)	253	1,065	125	526
Annual Energy Costs	$40.48	$170.40	$20.00	$84.16
Energy Reduction (kWh)	Base	Base	128	539
Total Savings	Base	Base	$20.48	$86.24
Equipment Costs to Retrofit	Base		$10.00	
Simple Payback (Years)	Base	Base	0.49	0.12

Table 7 – 4x2 Linear 4-lamp T8s

4x1, T8 Linear Fluorescent	Base		Option 1	
Fixture Type	4x1 Linear 32-watt T8s (2-lamp)		15-watt LED T8 Tubes (2-lamp)	
Lamps per Fixture	2		2	
Lamp Wattage (Nominal)	32		15	
Fixture Wattage *Including Ballast(s)*	60.8		30	
Annual Operating Hours	**2080**	**8760**	**2080**	**8760**
Incremental Cost per kWh	$0.16		$0.16	
Annual Energy (kWh)	126	533	62	263
Annual Energy Costs	$20.16	$85.28	$9.92	$42.08
Energy Reduction (kWh)	Base	Base	64	270
Total Savings	Base	Base	$10.24	$43.20
Equipment Costs to Retrofit	Base		$5.00	
Simple Payback (Years)	Base	Base	0.49	0.12

Table 8 – 4x1 Linear 2-lamp T8s

The enclosed "Interior Lighting Schedule – Energy Savings Estimate (ECO-2)" shows the estimated energy savings for converting all your linear fluorescents. The payback period on the 2x2, 2-lamp U-tube fixtures is longer since the U-tube LEDs cost more.

Sanctuary Lighting

The sanctuary is illuminated via can lights and decorative hanging lights. Due to the ceiling height, we were not able to field verify the wattage of the existing bulbs within the hanging lights. We assumed that the hanging lights are presently equipped with 300-watt incandescent lamps. We recommend replacing the 300-watt incandescent lamps with 35-watt LEDs. You should be able to save approximately $44.09 per hanging fixture by replacing the existing 300-watt incandescent lamps with 35-watt LEDs. The cost of a 35-watt LED bulb is approximately $50 per bulb.

We also recommend that you consider replacing the Can Light/Downlights that are presently equipped with 2, 18-watt 4-pin CFLs with new 25-watt LED Downlights. You may want to consider replacing them on an as-fail basis in the sanctuary since low operating hours equate to a long payback period.

Figure 9 – Sanctuary Lighting

ECO-4 Annual Preventative Maintenance

It is recommended that you incorporate a good HVAC maintenance program that includes annual coil cleaning. HVAC service companies can perform annual check-ups that will generally pay for itself in the long run by increasing the life of your equipment and maintaining system efficiency. A typical annual service might involve inspecting and/or cleaning the evaporator and condenser coils and checking the refrigerant levels to ensure that the equipment is performing at its maximum efficiency.

Cleaning the condenser coil is one of the most cost-effective maintenance steps that can be done on HVAC units. A dirty coil that raises condensing temperatures by as little as 10° Fahrenheit can increase power consumption by 10 percent—resulting in about $120 in electricity costs for a 10-ton unit operating 1,000 hours per year.

Indoor Air Filters

Every air filter has a certain amount of airflow resistance and dust building up on the filter eventually begins to block airflow. The longer the filter is used, the more dust it catches, the more it blocks airflow and thus...the more electricity it wastes. That's why it is important to change the air filters on a regular basis. It is far easier to change a disposable air filter than it is to clean the evaporator coils.

Door Sweeps

Replacing door sweeps on exterior doors is an inexpensive and easy-to-install measure that will help reduce energy use in both heating and cooling seasons. Reducing air infiltration will also help improve indoor air quality in your building. Consider adding a door sweep checkup and/or replacement to your annual preventative maintenance checklist.

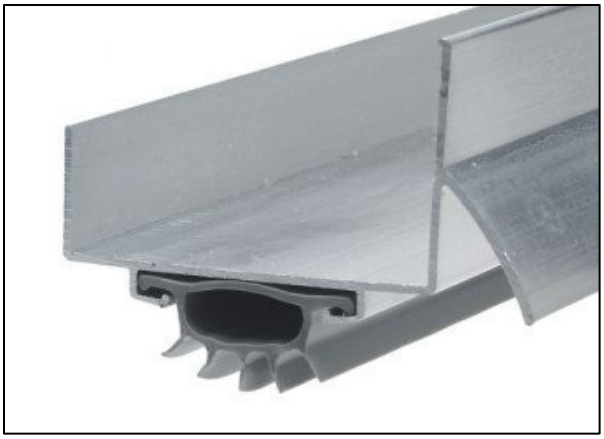


Figure 11 – Door Sweeps

TVA EnergyRight Incentives

HVAC

HVAC (heating, ventilation and air conditioning) systems have a major impact on energy usage. Proper selection, installation, operation and maintenance of HVAC systems can yield substantial energy savings, help control seasonal spikes in energy usage and improve comfort and air quality in your commercial or industrial setting. TVA is offering a $80/ton incentive for energy efficient replacements and $250/ton incentive toward the purchase of qualified VRF and Dual Fuel Heat Pumps.
https://energyright.com/business-industry/incentives/hvac/

LED Lights

On top of using more energy, incandescent and fluorescent lights produce large amounts of heat. Upgrade your interior, exterior and street lighting to lower your energy costs. Making the switch is more affordable with our incentive of $0.08/kWh towards energy-efficient LED upgrades when you retrofit your lighting.
https://energyright.com/business-industry/incentives/led-lights/

UVGI Germicidal Irradiation

Ultraviolet Germicidal Irradiation (UVGI) uses short wavelength UV-C light to inactivate microorganisms. UVGI is becoming increasingly popular across the globe, especially as a cost-effective alternative to chemical disinfection. TVA is offering an incentive of $30 per ton for duct-mounted UVGI systems.
https://energyright.com/business-industry/incentives/uvgi/

Pathway Lending

Pathway Leading offers low-cost loans to businesses in Tennessee which implement energy efficiency projects. This unique loan product helps Tennessee businesses, governmental entities, and nonprofits overcome the upfront cost barriers of implementing energy efficiency and renewable energy projects. With up to 100% project financing, including design and installation, you can quickly begin to see the financial benefits of energy efficiency in your facility. For more information refer to
www.pathwaylending.org/loans

Appendix

12-Month Billing Analysis
Hypothetical Billing Analysis (*1 Page)*
Billing Analysis (*1 Page)*
Graph "Cost Breakdown of Monthly Electric Bill" (*1 Page)*
Graph "Monthly Energy Usage (kWh) and Demand (kW)" (*1 Page)*
Graph "Monthly Energy Usage (kWh) and Cooling Degree Days" (*1 Page)*
Graph "Monthly Energy Usage (kWh) and Heating Degree Days" (*1 Page)*

Historical Billing
36-month Historical Billing (*1 Page)*
60-month Historical Billing Graph (*1 Page)*

Energy Use Intensity (EUI) (*1 Page)*

HVAC Schedule
HVAC Schedule (*1 Page)*

ECOs
ECO-1 Programmable Thermostats (*1 Page)*
ECO-2 Interior Lighting Schedule (*1 Page)*

Specification Sheets
Airius Air Pear EC (*2 Pages)*
Aprilaire Model 1870/1870W Dehumidifier (*4 Pages)*
Green Creative Compact HID Replacement Bulb (*4 Pages)*
Light Efficient Desing Flexcolor A21/23 High Output (*2 Pages)*
Sylvania Dulux D/E EOL Ecologic (*2 Pages)*
PLT Solution Color Selectable LED Downlight (*3 Pages)*

Specification Sheets for Existing HVAC Equipment
Trane 2TTA (*1 Page)*
Trane TWA/TWE (*3 Pages)*

Rates
KUB Schedule GSA-TOU (*5 Pages)*

Energy Star Portfolio Manager
Treasure Map for Worship Facilities (*10 Pages)*

Messiah Evangelical Lutheran Church
Hypothetical Billing under GSA-2 Rates - Account #6918210650

Date Read	Usage kWh	Billed Demand	Block 1 Energy	Additonal Energy	Demand Rate	Usage Charges	Demand Charges	Customer Charges	Other Charges	Total (Excluding Tax)	Total with Tax	Load Factor	Avg (Cost/kWh)
Jan-24	14,760	67.40	$0.15213	$0.06829	$16.02	$2,245.44	$278.75	$101.00	$0.00	$2,625.19	$2,625.19	0.285	$0.17786
Dec-23	11,400	62.60	$0.15315	$0.06931	$16.02	$1,745.91	$201.85	$101.00	$0.00	$2,048.76	$2,048.76	0.237	$0.17972
Nov-23	9,120	63.48	$0.15421	$0.07037	$16.02	$1,406.40	$215.95	$101.00	$0.00	$1,723.34	$1,723.34	0.200	$0.18896
Oct-23	9,840	44.04	$0.15006	$0.06719	$16.20	$1,476.59	$0.00	$101.00	$0.00	$1,577.59	$1,577.59	0.321	$0.16032
Sep-23	14,400	62.16	$0.15309	$0.07022	$16.20	$2,204.50	$196.99	$101.00	$0.00	$2,502.49	$2,502.49	0.293	$0.17378
Aug-23	12,240	49.68	$0.15432	$0.07262	$15.69	$1,888.88	$0.00	$101.00	$0.00	$1,989.88	$1,989.88	0.354	$0.16257
Jul-23	12,720	58.56	$0.15370	$0.07200	$15.69	$1,955.06	$134.31	$101.00	$0.00	$2,190.37	$2,190.37	0.274	$0.17220
Jun-23	9,120	55.80	$0.15296	$0.07167	$14.90	$1,395.00	$86.42	$101.00	$0.00	$1,582.42	$1,582.42	0.227	$0.17351
May-23	7,560	44.88	$0.14977	$0.06848	$14.90	$1,132.26	$0.00	$101.00	$0.00	$1,233.26	$1,233.26	0.242	$0.16313
Apr-23	8,280	61.08	$0.15035	$0.07187	$14.37	$1,244.90	$159.22	$98.00	$0.00	$1,502.12	$1,502.12	0.182	$0.18142
Mar-23	9,120	65.28	$0.15788	$0.07964	$14.37	$1,439.87	$219.57	$98.00	$0.00	$1,757.44	$1,757.44	0.201	$0.19270
Feb-23	13,080	74.40	$0.15291	$0.07443	$14.37	$2,000.06	$350.63	$98.00	$0.00	$2,448.69	$2,448.69	0.253	$0.18721
12-month Tot:	***131,640***					***$20,134.85***	***$1,843.69***	***$1,203.00***		***$23,181.54***	***$23,181.54***	***0.256***	***$0.17610***

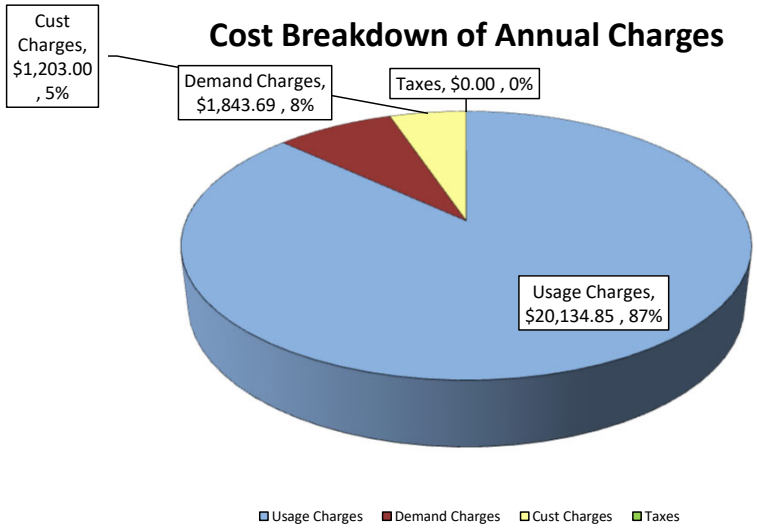
*Also includes sale tax of = 0.0%

GSA-2 Current Rates

Usage: If metered kilowatt hours greater than 15000 kWh
*=(Metered kWh -15000) * Additonal Energy $/kWh + (15000 * Block 1 Energy $/kWh)*
If metered kilowatt hours less than 15000 kWh
*=(Metered kWh * Block 1 Energy $/kWh)*

Demand: For demand greater than 50 kW:
*=(Billed Demand - 50) * Demand Charge $/kW*

Total = Usage + Demand + Customer Charge



Messiah Evangelical Lutheran Church
As Billed - GSA-2A TOU - Account #6918210650

Date Read	Off Peak Usage kWh	On Peak Usage kWh	Billed Demand	On Peak Energy	Off Peak Energy	Demand Rate	Usage Charges	Demand Charges	Customer Charges	Other Charges	Total (Excluding Tax)	Total with Tax	Load Factor	Avg (Cost/kWh)
Jan-24	11,640	3,120	67.40	$0.23007	$0.09697	$4.77	$1,846.55	$321.50	$101.00	$0.00	$2,269.05	$2,269.05	0.225	$0.15373
Dec-23	9,000	2,400	62.60	$0.23109	$0.09799	$4.77	$1,436.53	$298.60	$101.00	$0.00	$1,836.13	$1,836.13	0.187	$0.16106
Nov-23	7,320	1,800	63.48	$0.23215	$0.09905	$4.77	$1,142.92	$302.80	$101.00	$0.00	$1,546.72	$1,546.72	0.160	$0.16960
Oct-23	7,800	2,040	44.04	$0.22759	$0.09587	$4.77	$1,212.07	$210.07	$101.00	$0.00	$1,523.14	$1,523.14	0.254	$0.15479
Sep-23	11,400	3,000	62.16	$0.23062	$0.09890	$4.77	$1,819.32	$296.50	$101.00	$0.00	$2,216.82	$2,216.82	0.232	$0.15395
Aug-23	9,480	2,760	49.68	$0.23185	$0.10130	$4.77	$1,600.23	$236.97	$101.00	$0.00	$1,938.20	$1,938.20	0.274	$0.15835
Jul-23	10,200	2,520	58.56	$0.23123	$0.10068	$4.77	$1,609.64	$279.33	$101.00	$0.00	$1,989.97	$1,989.97	0.220	$0.15644
Jun-23	7,200	1,920	55.80	$0.23090	$0.10035	$4.77	$1,165.85	$266.17	$101.00	$0.00	$1,533.01	$1,533.01	0.179	$0.16809
May-23	6,240	1,320	44.88	$0.22771	$0.09716	$4.77	$906.86	$214.08	$101.00	$0.00	$1,221.93	$1,221.93	0.200	$0.16163
Apr-23	6,840	1,440	61.08	$0.22920	$0.09865	$4.61	$1,004.81	$281.58	$98.00	$0.00	$1,384.39	$1,384.39	0.151	$0.16720
Mar-23	7,440	1,680	65.28	$0.23673	$0.10618	$4.61	$1,187.69	$300.94	$98.00	$0.00	$1,586.63	$1,586.63	0.164	$0.17397
Feb-23	10,320	2,760	74.40	$0.23176	$0.10121	$4.61	$1,684.14	$342.98	$98.00	$0.00	$2,125.13	$2,125.13	0.199	$0.16247
12-month Tot:	***104,880***	***26,760***					***$16,616.59***	***$3,351.53***	***$1,203.00***		***$21,171.12***	***$21,171.12***	***0.204***	***$0.16083***

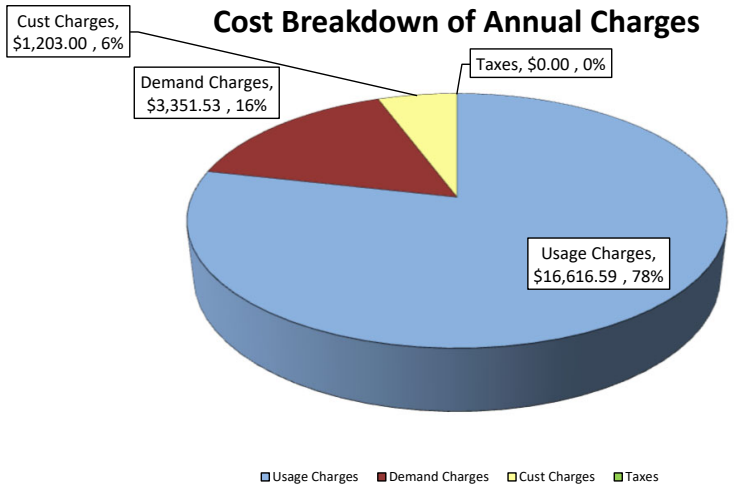
*Also includes sale tax of = 0.0%

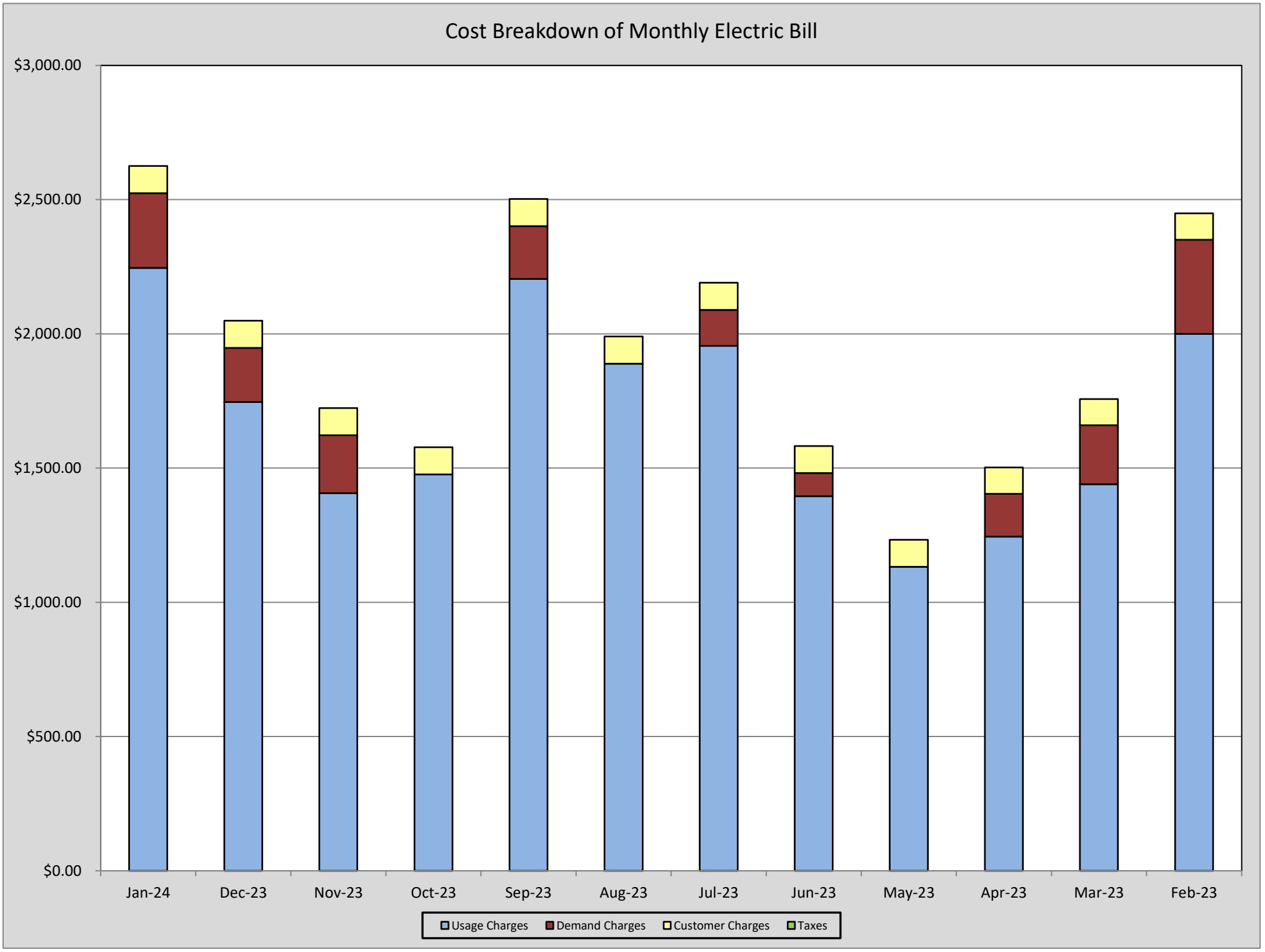
GSA-TOU-2A Current Rates

Usage: If metered kilowatt hours greater than 15000 kWh
*=(Metered kWh -15000) * Additonal Energy $/kWh + (15000 * Block 1 Energy $/kWh)*

Demand: For demand greater than 50 kW:
*=(Billed Demand - 50) * Demand Charge $/kW*

Total = Usage + Demand + Customer Charge




Cost Breakdown of Monthly Electric Bill
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$2,000.00
$1,500.00
$1,000.00
$500.00
$0.00
Jan-24
Dec-23
Nov-23
Oct-23
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Jun-23
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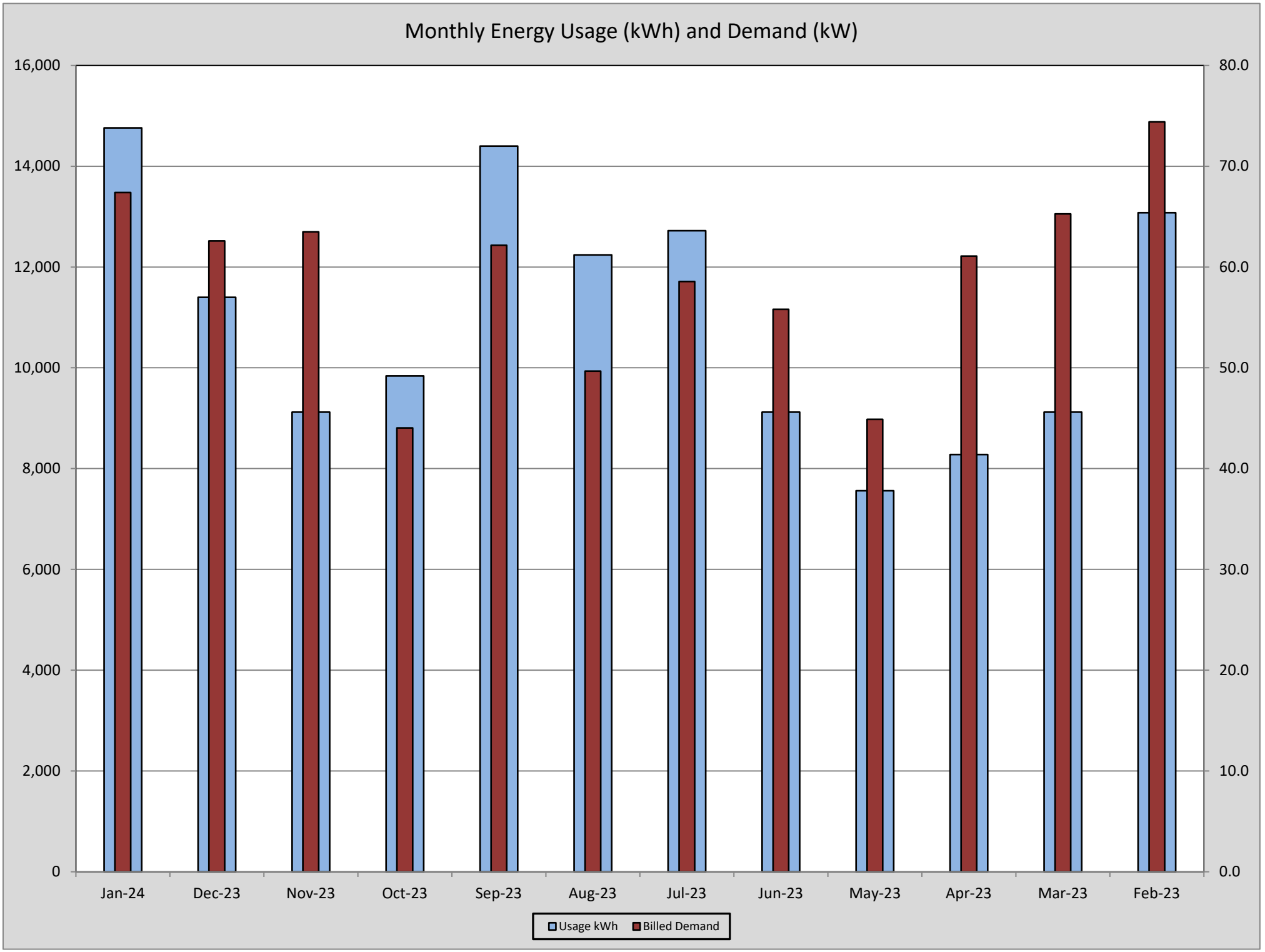
Apr-23
Mar-23
Feb-23
Usage Charges
Demand Charges
Customer Charges
Taxes


Monthly Energy Usage (kWh) and Demand (kW)
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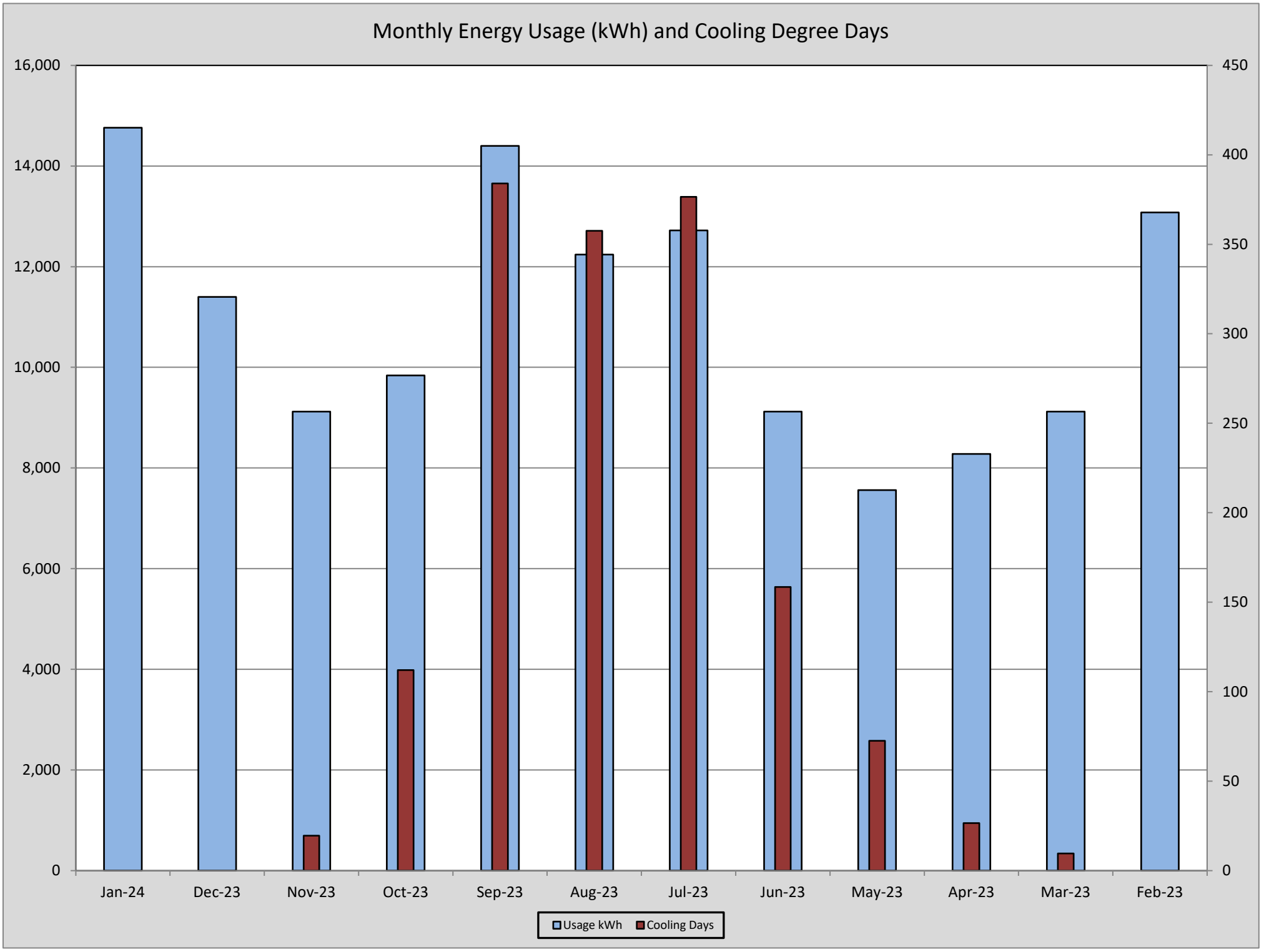
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Jan-24
Dec-23
Nov-23
Oct-23
Sep-23
Aug-23
Jul-23
Jun-23
May-23
Apr-23
Mar-23
Feb-23
Usage kWh
Billed Demand


Monthly Energy Usage (kWh) and Cooling Degree Days
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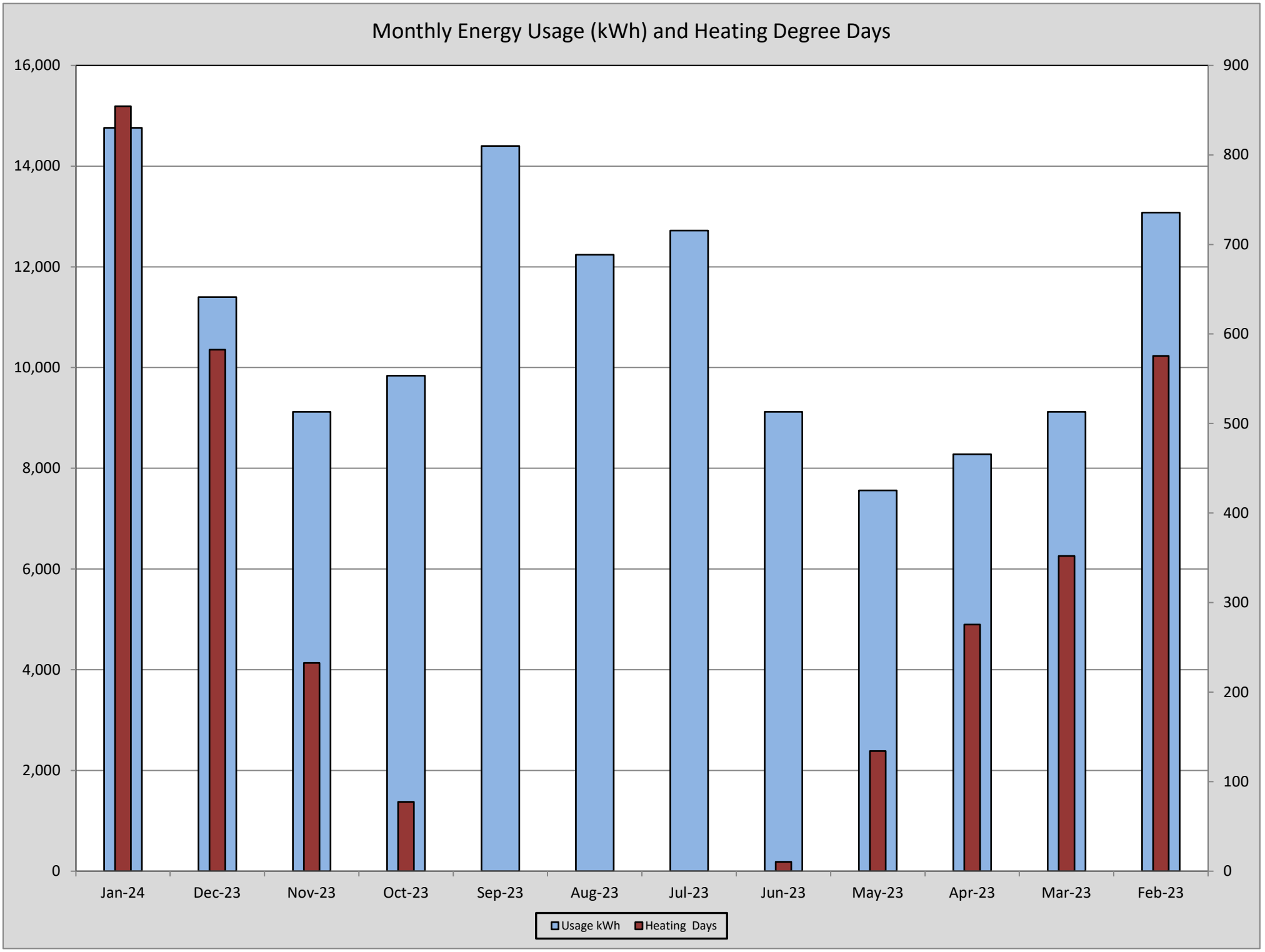
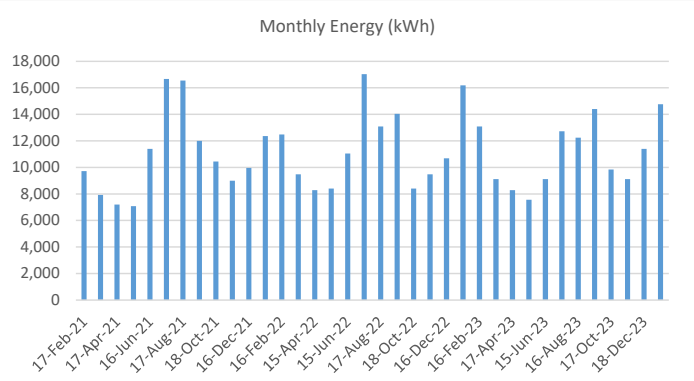
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
450
400
350
300
250
200
150
100
50
0
Jan-24
Dec-23
Nov-23
Oct-23
Sep-23
Aug-23
Jul-23
Jun-23
May-23
Apr-23
Mar-23
Feb-23
Usage kWh
Cooling Days

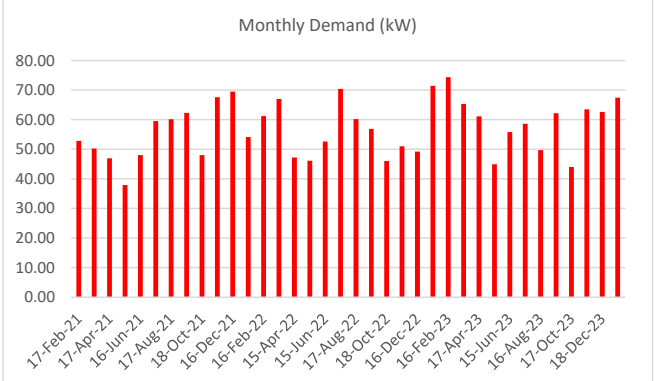

Monthly Energy Usage (kWh) and Heating Degree Days
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
900
800
700
600
500
400
300
200
100
0
Jan-24
Dec-23
Nov-23
Oct-23
Sep-23
Aug-23
Jul-23
Jun-23
May-23
Apr-23
Mar-23
Feb-23
Usage kWh
Heating Days

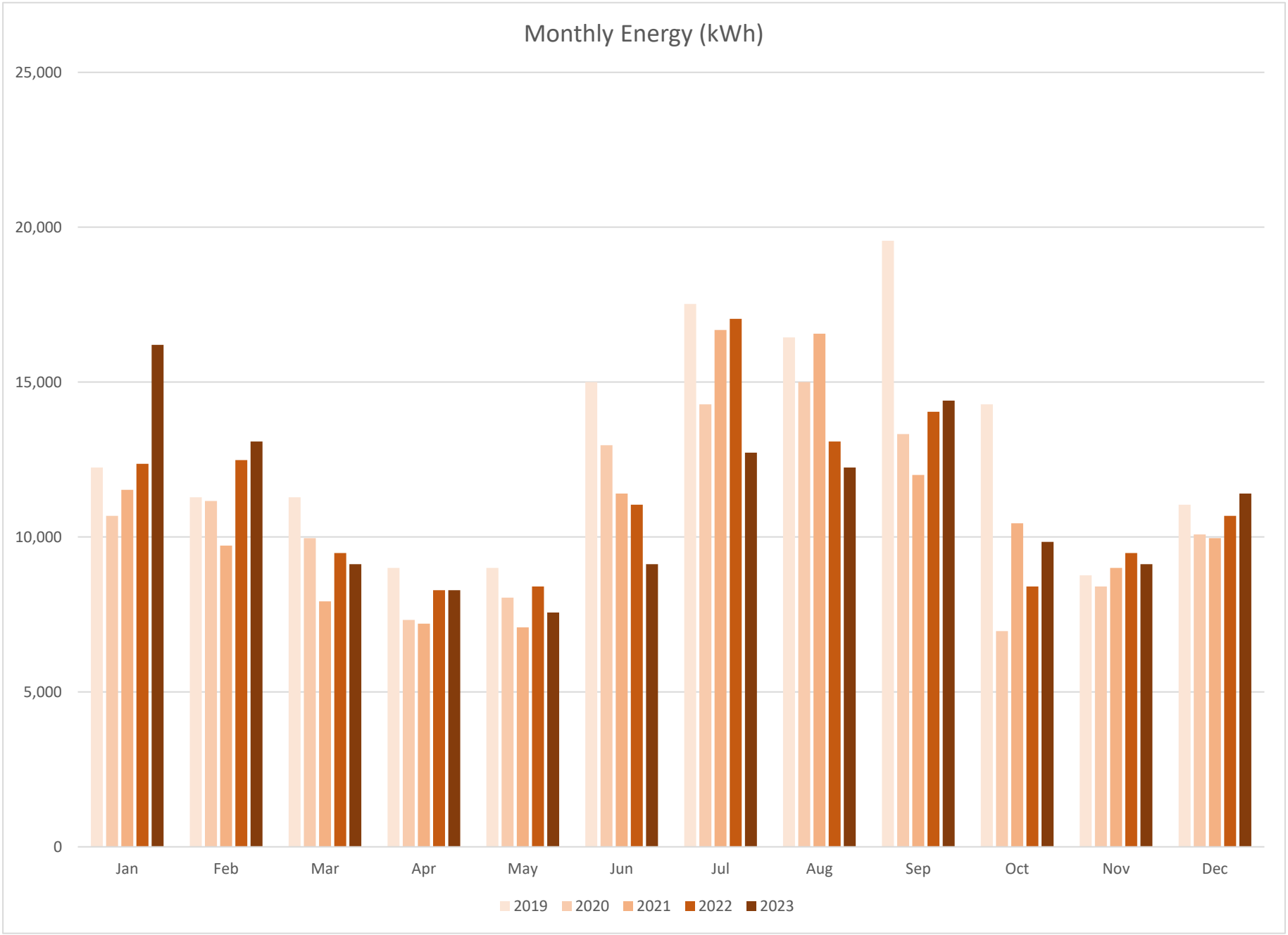
MESSIAH EVANGELICAL LUTHERAN CHURCH

Account# 6918210000_6918210650

Date	kWh	Revenue	Avg $/kWh	Demand (kW)	Load Factor	Demand (kVA)	Power Factor	Contract Demand	Prior 12-month High	Contract	PF	Prior	Billed Demand
17-Feb-21	9,720	$1,450.05	$0.149	52.80	0.26	0.00		0.00	76.70				52.80
18-Mar-21	7,920	$1,161.46	$0.147	50.20	0.23	0.00		0.00	68.50				50.20
17-Apr-21	7,200	$1,065.56	$0.148	46.90	0.21	0.00		0.00	56.40				46.90
17-May-21	7,080	$1,086.13	$0.153	37.90	0.26	0.00		0.00	56.40				37.90
16-Jun-21	11,400	$1,654.18	$0.145	48.00	0.33	0.00		0.00	56.40				48.00
19-Jul-21	16,680	$2,399.67	$0.144	59.50	0.35	0.00		0.00	56.40				59.50
17-Aug-21	16,560	$2,430.71	$0.147	60.10	0.40	0.00		0.00	59.50				60.10
17-Sep-21	12,000	$2,496.38	$0.208	62.30	0.26	0.00		0.00	60.10				62.30
18-Oct-21	10,440	$1,458.80	$0.140	48.00	0.29	0.00		0.00	62.30				48.00
17-Nov-21	9,000	$1,424.51	$0.158	67.60	0.18	0.00		0.00	62.30				67.60
16-Dec-21	9,960	$1,585.10	$0.159	69.50	0.21	0.00		0.00	67.60				69.50
18-Jan-22	12,360	$1,817.36	$0.147	54.10	0.29	0.00		0.00	69.50				54.10
Totals	130,320	$20,029.91											
Average	10,860	$1,669.16	$0.15	54.74	0.27	0.00		0.00	62.68				54.74
16-Feb-22	12,480	$1,891.38	$0.152	61.20	0.29	0.00		0.00	69.50				61.20
17-Mar-22	9,480	$1,460.58	$0.154	67.00	0.20	0.00		0.00	69.50				67.00
15-Apr-22	8,280	$1,225.59	$0.148	47.20	0.25	0.00		0.00	69.50				47.20
16-May-22	8,400	$1,301.06	$0.155	46.10	0.24	0.00		0.00	69.50				46.10
15-Jun-22	11,040	$1,674.55	$0.152	52.60	0.29	0.00		0.00	69.50				52.60
19-Jul-22	17,040	$2,606.49	$0.153	70.40	0.30	0.00		0.00	69.50				70.40
17-Aug-22	13,080	$2,190.76	$0.167	60.20	0.31	0.00		0.00	70.40				60.20
19-Sep-22	14,040	$2,441.59	$0.174	56.90	0.31	0.00		0.00	70.40				56.90
18-Oct-22	8,400	$1,420.41	$0.169	46.00	0.26	0.00		0.00	70.40				46.00
17-Nov-22	9,480	$1,571.68	$0.166	51.00	0.26	0.00		0.00	70.40				51.00
16-Dec-22	10,680	$1,662.69	$0.156	49.20	0.31	0.00		0.00	70.40				49.20
18-Jan-23	16,200	$2,388.59	$0.147	71.50	0.29	0.00		0.00	70.40				71.50
Totals	138,600	$21,835.37											
Average	11,550	$1,819.61	$0.16	56.61	0.28	0.00		0.00	69.95				56.61
16-Feb-23	13,080	$2,125.13	$0.162	74.40	0.25	0.00		0.00	71.50				74.40
17-Mar-23	9,120	$1,586.63	$0.174	65.30	0.20	0.00		0.00	74.40				65.30
17-Apr-23	8,280	$1,384.40	$0.167	61.10	0.18	0.00		0.00	74.40				61.10
16-May-23	7,560	$1,221.94	$0.162	44.90	0.24	0.00		0.00	74.40				44.90
15-Jun-23	9,120	$1,533.02	$0.168	55.80	0.23	0.00		0.00	74.40				55.80
18-Jul-23	12,720	$1,989.97	$0.156	58.60	0.27	0.00		0.00	74.40				58.60
16-Aug-23	12,240	$1,938.20	$0.158	49.70	0.35	0.00		0.00	74.40				49.70
18-Sep-23	14,400	$2,216.82	$0.154	62.20	0.29	0.00		0.00	74.40				62.20
17-Oct-23	9,840	$1,523.14	$0.155	44.00	0.32	0.00		0.00	74.40				44.00
16-Nov-23	9,120	$1,546.72	$0.170	63.50	0.20	0.00		0.00	74.40				63.50
18-Dec-23	11,400	$1,836.32	$0.161	62.60	0.24	0.00		0.00	74.40				62.60
19-Jan-24	14,760	$2,269.24	$0.154	67.40	0.29	0.00		0.00	74.40				67.40
Totals	131,640	$21,171.53											
Average	10,970	$1,764.29	$0.16	59.13	0.26	0.00		0.00	74.16				59.13

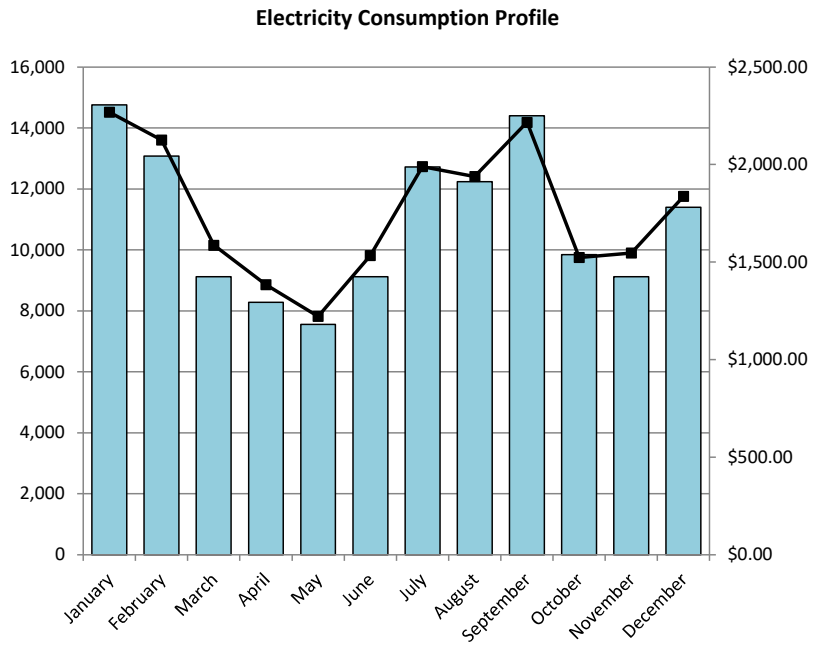





Monthly Energy (kWh)
25,000
20,000
15,000
10,000
5,000
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2019
2020
2021
2022
2023

Messiah Evangelical Lutheran Church

Building Area (ft^2): **24,000**

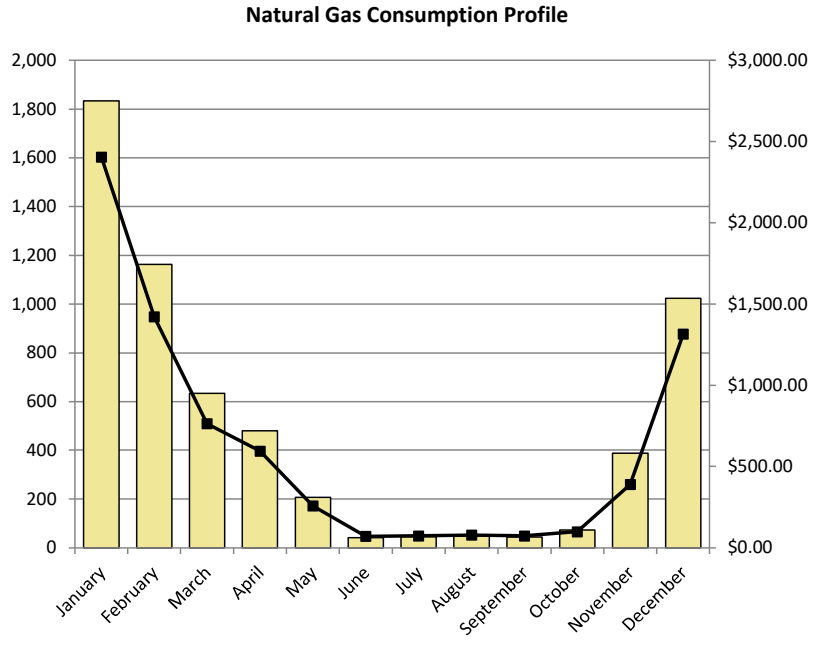


Month	kWh	Cost
January	14,760	$2,269.24
February	13,080	$2,125.13
March	9,120	$1,586.63
April	8,280	$1,384.40
May	7,560	$1,221.94
June	9,120	$1,533.02
July	12,720	$1,989.97
August	12,240	$1,938.20
September	14,400	$2,216.82
October	9,840	$1,523.14
November	9,120	$1,546.72
December	11,400	$1,836.32
Totals	**131,640**	**$21,171.53**

Cost/ft^2: $0.88 per ft^2/year

Electric EUI: **18,715** **BTU/ft^2**

Average Cost: $0.161 $/kWh



Month	CCF	Cost
January	1,833	$2,403.61
February	1,163	$1,421.66
March	634	$764.39
April	480	$594.13
May	207	$256.62
June	41	$70.69
July	45	$73.03
August	48	$78.39
September	44	$73.12
October	73	$98.89
November	387	$389.05
December	1,024	$1,314.74
Totals	**5,979**	**$7,538.32**

Cost/ft^2: $0.31 per ft^2/year

Gas EUI: **25,659** **BTU/ft^2**

Average Cost: $1.261 $/CCF

Annual Utility Cost = $28,710

Total Cost/ ft^2 = $1.20

Combined Energy Use Index (EUI) = 44 kBTU/sq. ft

HVAC Schedule

Manufacturer	MLC Label	Model Number	HVAC Type	Location	Manufactured Date	Condition	Unit Size Tons	Cooling BTU	SEER/EER	AFUE	COP
Trane	AH1 CU1	Indoor TUX080C942D2 Outdoor 2TTA2036A3000AA	Gas Furnace Split System Air Conditioner	Music Rehearsal	7/2003		3.0	36,000	12/10.6	90%	
Trane	AH2 CU2	Indoor TUX080C942D2 Outdoor 2TTA2040A3000AA	Gas Furnace Split System Air Conditioner	Pastor(s) Offices	7/2003		3.3	40,000	12/10.6	90%	
Trane	AH3 CU3	Indoor TWE120A300EA Outdoor TWA120A300FA	Split System Heat Pump	Fellowship Hall	7/2003		10.0	120,000	11.7 IEER		3.30
Trane	AH4 CU4	Indoor TUX060C936D2 Outdoor 2TTA2024A3000AA	Gas Furnace Split System Air Conditioner	Sec / Corr	6/2003		2.0	60,000	12/10.6	90%	
Trane	AH5 CU5	Indoor TUX080C942D2 Outdoor 2TTA2030A3000AA	Gas Furnace Split System Air Conditioner	Narthex #2	7/2003		2.5	30,000	12/10.6	90%	
Trane	AH6 CU6	Indoor TUX120C960D2 Outdoor 2TTA2060A3000AA	Gas Furnace Split System Air Conditioner	Library	5/2003		5.0	60,000	12/10.6	90%	
Trane	AH7 CU7	Indoor TUX120C960D2 Outdoor 2TTA2060A3000AA	Gas Furnace Split System Air Conditioner	Classrooms	5/2003		5.0	60,000	12/10.6	90%	
Trane	AH8 CU8	Indoor TUX080C942D2 Outdoor 2TTA2060A3000AA	Gas Furnace Split System Air Conditioner	Narthex #1	6/2003		5.0	60,000	12/10.6	90%	
Trane	AH9 CU9	Indoor TWE1808300EA Outdoor TWA180B300FA	Split System Heat Pump	Fellowship Hall	6/2003		15.0	180,000	12.3 IEER		3.20
Trane	AH10 CU10	Indoor TUX120C960D2 Outdoor 2TTA2060A3000AA	Gas Furnace Split System Air Conditioner	Kitchen	6/2003		5.0	60,000	12/10.6	90%	
Trane	AH11 CU11	Indoor TUX080C942D2 Outdoor 2TTA2036A3000AA	Gas Furnace Split System Air Conditioner	Cor/TLTS/Elect	7/2003		3.0	36,000	12/10.6	90%	
Carrier	AH12 Ckt 1 CU12	Indoor 40RR024017 Outdoor 38AKS014---520--	Split System Air Conditioner	Sanctuary			10.0	120,000	9.6/8.9		
Carrier	AH12 Ckt 2 CU13	Indoor 40RR024017 Outdoor 38AKS014---520--	Split System Air Conditioner	Sanctuary			10.0	120,000	9.6/8.9		
						Total	**78.8**				

ECO-1

Programmable Thermostats

We recommend replacing the existing thermostats with programmable thermostats; programmable thermostats allow the user to enter temperature setbacks to maximize energy savings when the facility is unoccupied.

HEATING SEASON		**Existing - Estimated HVAC Usage**		**Recommended - Estimated HVAC Usage**			
Description	% Reduction	Estimated Annual Therms (Heating)	Estimated Annual Cost	Projected Annual Therms	Projected Annual Cost	Annual Therms Savings	Annual Savings
See HVAC Equipment Schedule	10	5,979	$7,354	5,381	$6,619	598	**$735.42**
	15	5,979	$7,354	5,082	$6,251	897	**$1,103.13**
	20	5,979	$7,354	4,783	$5,883	1,196	**$1,470.83**
	25	5,979	$7,354	4,484	$5,516	1,495	**$1,838.54**
	30	5,979	$7,354	4,185	$5,148	1,794	**$2,206.25**

Asssumes average cost of $1.23 per Therm.
Excludes cost of electricity to operate fans.

COOLING SEASON		**Existing - Estimated HVAC Usage**		**Recommended - Estimated HVAC Usage**			
Description	% Reduction	Estimated Annual kWh (Cooling)	Estimated Annual Cost	Projected Annual kWh	Projected Annual Cost	Annual kWh Savings	Annual Savings
See HVAC Equipment Schedule	10	31,824	$5,092	28,642	$4,583	3,182	**$509.18**
	15	31,824	$5,092	27,050	$4,328	4,774	**$763.78**
	20	31,824	$5,092	25,459	$4,073	6,365	**$1,018.37**
	25	31,824	$5,092	23,868	$3,819	7,956	**$1,272.96**
	30	31,824	$5,092	22,277	$3,564	9,547	**$1,527.55**

Asssumes average cost of $.16 per kWh.

		Recommended - Install Programmable TSTATS				**Simple Payback**		
# of Programmable Thermostats required	% Reduction	Cost per TSTAT	Additional Cost	Labor Cost per TSTAT	Total Estimate to Retrofit	Total Annual Savings	Simple Payback (Years)	Simple Payback (Months)
0	10	$300.00	$0.00	$75.00	$0.00	**$1,244.60**	0	0
0	15	$300.00	$0.00	$75.00	$0.00	**$1,866.90**	0	0
0	20	$300.00	$0.00	$75.00	$0.00	**$2,489.20**	0	0
0	25	$300.00	$0.00	$75.00	$0.00	**$3,111.50**	0	0
0	30	$300.00	$0.00	$75.00	$0.00	**$3,733.80**	0	0

Actual savings may vary significantly!

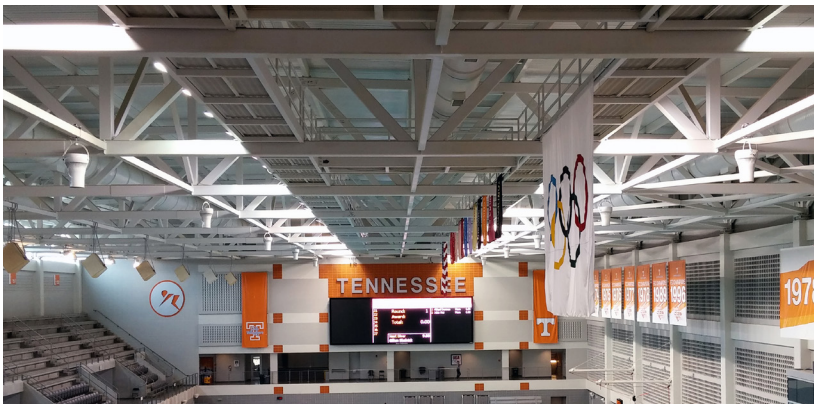
Total Annual Savings: $2,489

Interior Lighting Schedule - Energy Savings Estimate (ECO-2)

		EXISTING						*RECOMMENDED/PROPOSED*						*SAVINGS & PAYBACK*					
Area Served	**Rough Fixture Count**	**Existing Fixture Description**	**Existing Fixture Wattage**	**Lighting Load (kW)**	**Annual Operating Hours**	**Existing Annual kWh**	**Existing Annual Costs**	**Recommended Fixture Description**	**Proposed Fixture Wattage**	**Lighting Load (kW)**	**Annual Operating Hours**	**Proposed Annual kWh**	**Proposed Annual Costs**	**Annual Savings**	**Annual Savings kWh**	**Existing Annual Costs (per fix)**	**Proposed Annual Costs (per fix)**	**Retrofit Costs (per fix)**	**Simple Payback (Years)**
Admin Wing Education Wing	58	4x2, 4-lamp T8 (32-watt)	121.6	7.053	2080	14,670	$2,347.20	4x2, 4-lamp T8 LED (15-watt)	60.0	3.480	2080	7,238	$1,158.08	$1,189.12	7,432	$40.47	$19.97	$10.00	0.49
Admin Wing Education Wing	29	4x2, 2-lamp T8 (32-watt)	60.8	1.763	2080	3,667	$586.72	4x2, 2-lamp T8 LED (15-watt)	30.0	0.870	2080	1,810	$289.60	$297.12	1,857	$20.23	$9.99	$5.00	0.49
Admin Wing Education Wing	6	4x1, 1-lamp T8 (32-watt)	30.4	0.182	2080	379	$60.64	4x1, 2-lamp T8 LED (15-watt)	15.0	0.090	2080	187	$29.92	$30.72	192	$10.11	$4.99	$2.50	0.49
Various Emergency Lighting	21	4x2 or 4x1, 2-lamp T8 (32-watt)	60.8	1.277	8760	11,187	$1,789.92	4x2 or 4x1, 2-lamp T8 LED (15-watt)	30.0	0.630	8760	5,519	$883.04	$906.88	5,668	$85.23	$42.05	$5.00	0.12
Various	21	2x2, 2-lamp U-tube T8 (32-watt)	60.8	1.277	2080	2,656	$424.96	2x2, 2-lamp U-tube T8 LED (15-watt)	30.0	0.630	2080	1,310	$209.60	$215.36	1,346	$20.24	$9.98	$29.00	2.83
Sanctuary	14	Hanging Lights (300-watt Incandescent)	300.0	4.200	1040	4,368	$698.88	Hanging Lights (35-watt LED)	35.0	0.490	1040	510	$81.60	$617.28	3,858	$49.92	$5.83	$50.00	1.13
Sanctuary	22	Can Lights 2-bulb CFLs (4-pin 18W)	36.0	0.792	1040	824	$131.84	New LED Downlights (25-watt)	25.0	0.550	1040	572	$91.52	$40.32	252	$5.99	$4.16	$40.00	21.83
Educational Wing	16	Can Lights 2-bulb CFLs (4-pin 18W)	36.0	0.576	2080	1,198	$191.68	New LED Downlights (25-watt)	25.0	0.400	2080	832	$133.12	$58.56	366	$11.98	$8.32	$40.00	10.93
Narthex	8	Can Lights 2-bulb CFLs (4-pin 18W)	36.0	0.288	2080	599	$95.84	New LED Downlights (25-watt)	25.0	0.200	2080	416	$66.56	$29.28	183	$11.98	$8.32	$40.00	10.93
Fellowship Hall	13	LED Highbays 150-watt LED (Assumed)	150.0	1.950	1040	2,028	$324.48	No need to replace			1040								
		Grand Total		**19.4**		**41,576**	**$6,652.16**						**Grand Total**	**$3,384.64**	**21,154**		**Retrofit Costs**	**$4,514.00**	**1.33**

AIR PEAR EC

Improve comfort in your facility with a system of our best selling fans.



DISTRIBUTED COMFORT

Our most popular fan is designed to be installed as a distributed network of devices to continuously provide airflow across large spaces that suffer from stratification. The Air Pear series of fans feature our patented stator and unique nozzle design to gently throw air over long distances for ceiling to floor air rotation.

WHERE WE HELP

- Buildings with overhead air supply
- Spaces 15 ft+ or higher
- Warehouses, gyms, hangars or other large spaces
- Areas where other fans will not physically fit

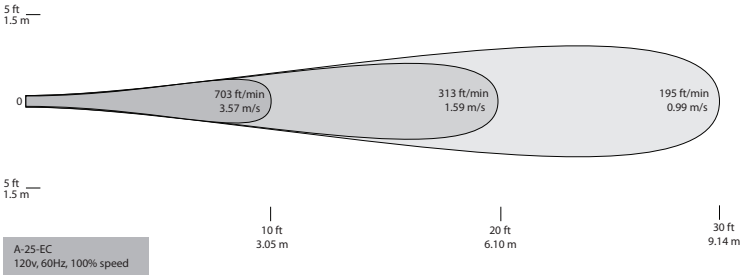
Features

- Premium electrically commutated motor by ebm-papst®
- 4 sizes for various building heights
- Easy installation in new construction or retrofits
- Patented multi-vane stator and venturi nozzle
- 3-year parts and workmanship warranty
- 6 ft. steel leash and anchor point for safety
- ETL Listed in U.S. and Canada
- 5VA Flame resistance rating
- Made in the U.S.A.

Optional

- Manual wall mounted control
- Wi-Fi App based Pearlink control
- BACnet MS/TP card for integration with existing front end control system
- Optional intake grille

AIR PEAR 25-EC



Housing: PC/ABS, UL 94 5VA flame resistance.

Motor: 230mm, electrically commutated, thermally-protected axial motor by ebm-papst®. Operating temperature: -22°F (-30°C) to 122°F (50°C). No lubrication required, bearings are sealed.

Power Cord: 6 foot cord and plug provided for 100-130V fans, no plug for 200-250V.

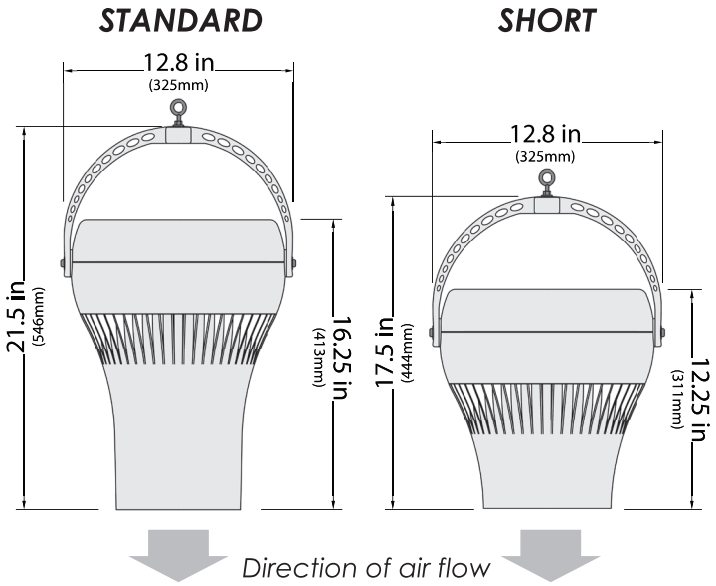
Control Input: 0-10VDC.

Stator: Patented multi-vane stator significantly increases air throw for maximizing performance.

Certification: Conforms to UL-507, CAN/CSA-C22.2 No. 1113. ETL listed in USA and Canada.

Safety Cable: 6' length steel cable (fastened to body)

Warranty: 3 years parts and workmanship.



Technical Specifications

Model	Input Power, 1 Ø	Amps	Watts	RPM	dB(A)[1]	Weight	Colors ○ ● ●
A-25-EC-STD-100-130-X	100-130VAC, 60Hz	0.46	31	1640	44, 42, 40	9 lbs.	X = Off white (W) , gray (G) or black (B)
A-25-EC-STD-200-250-X	200-250VAC, 60Hz	0.26	30	1700	44, 42, 40	9 lbs.	X = Off white (W) , gray (G) or black (B)
A-25-EC-SH-100-130-X	100-130VAC, 60Hz	0.46	31	1640	44, 42, 40	7 lbs.	X = Off white (W) , gray (G) or black (B)
A-25-EC-SH-200-250-X	200-250VAC, 60Hz	0.26	30	1700	44, 42, 40	7 lbs.	X = Off white (W) , gray (G) or black (B)

(1) Calculated sound pressure at 15, 20 and 25 foot distances based on non-reflective area. 69 dB(A) Sound Power Level, designed to meet ISO 3744 - engineering grade precision for determining sound power. Data independently verified by third party. Tests performed in-unit.

Controls & Factory Installed Options

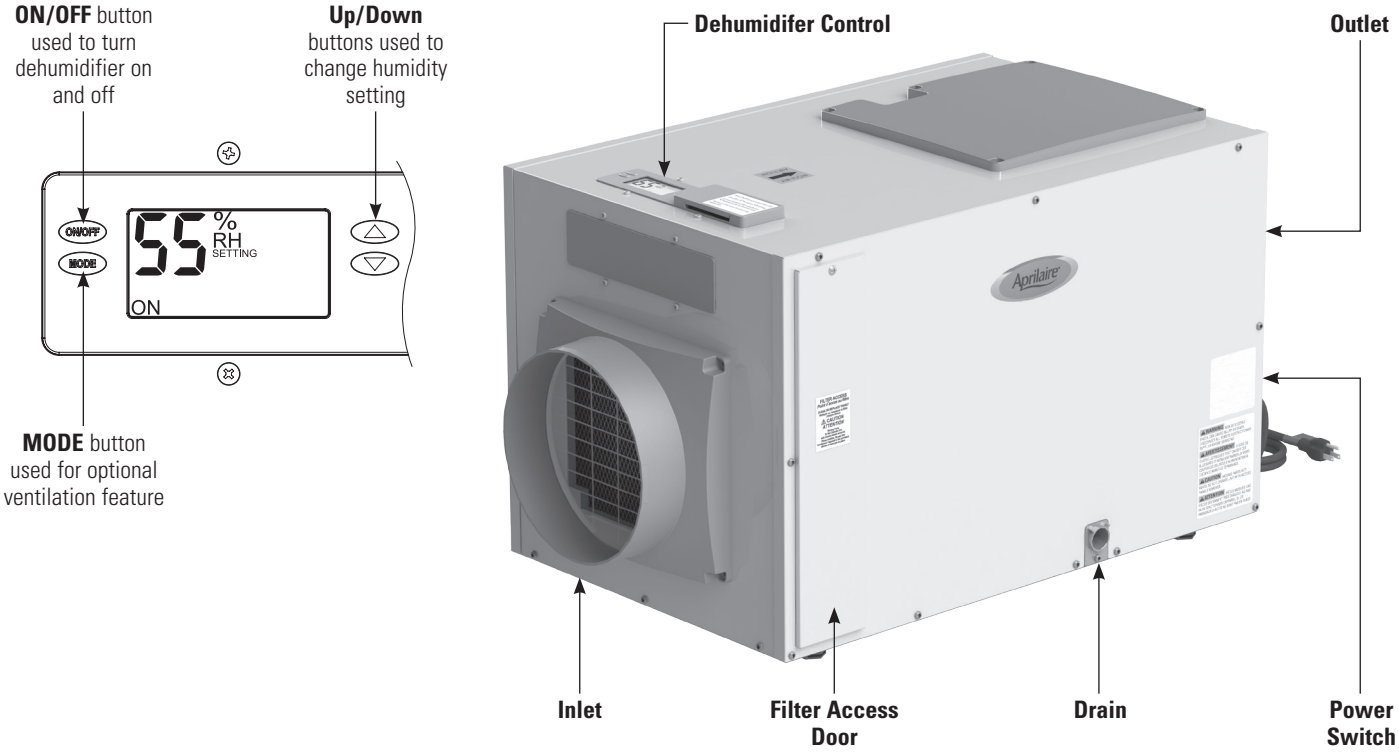
Item	Description
Pearlink-F	Pearlink Fan Sensor- One Per Fan. Wi-Fi iOS/Android App based controller
Pearlink-T	Pearlink wired (120v) Floor Thermostat- One Per Room
POT-1	Wall-mounted speed control. Low voltage control wiring daisy-chained between fans to be controlled as a group.
AiriusBAC24	BACnet MS/TP card for integration with an existing BACnet system. Individually control speed, on/off and monitor fan status.
GUARD25	Intake grille: Phosphated steel coated in black plastic. Recommended for installations where occupants can reach fans.
BABS	Black ABS housing upgrade for increased chemical resistance. Applications such as machine shops or pools.

Model:	Qty:
Controls/Options:	Qty:

Model 1870 & 1870W Dehumidifier Owner's Manual

PLEASE LEAVE THIS MANUAL WITH THE HOMEOWNER

Installed by:_____ Installer Phone: _____ Date Installed:_____



WHOLE HOME DEHUMIDIFICATION

The Aprilaire® Dehumidifier controls the humidity level in your entire home. A powerful blower inside the dehumidifier draws air into the cabinet, filters the air and removes moisture, then discharges the dry air into the HVAC system or dedicated area of the home. Inside the cabinet, a sealed refrigeration system removes moisture by moving the air through a series of tubes and fins that are kept colder than the dew point of the incoming air. The dew point is the temperature at which moisture in the air will condense, much like what occurs on the outside of a cold glass on a hot summer day. The condensed moisture drips into the dehumidifier drain pan to a drain tube routed to the nearest floor drain or condensate pump. After the moisture is removed, the air moves through a second coil where it is reheated before being sent back into the home. The air leaving the dehumidifier will be warmer and drier than the air entering the dehumidifier.

You can reduce the amount of humidity that enters the home by closing windows, doors, and fireplace flues when outdoor humidity is high, and by drying clothes outside. Direct exhaust from kitchen vents and bath fans is the best means of controlling humidity due to cooking and showers/baths. The dehumidifier is not designed to prevent window condensation in winter. Use ventilation to lower indoor humidity levels in the winter.

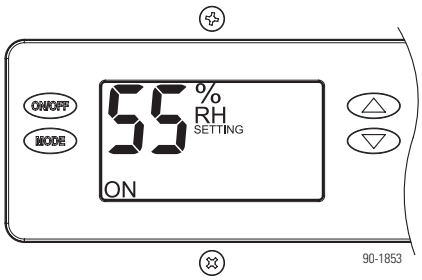
SETTING THE DESIRED HUMIDITY LEVEL

The dehumidifier on-board control will display the humidity setting when not running, and displays the measured humidity when running.

The UP and DOWN arrow buttons allow the humidity level to be set from 40% to 80% relative humidity. Use the ON/OFF button to turn the dehumidifier ON or OFF.

Set the control at 55%RH when first installed. Allow the dehumidifier to run until it reaches the setting before deciding if you want to change the setting.

- **If you prefer the air to be more dry,** decrease the humidity setting.
- **If you prefer the air to be less dry,** increase the humidity setting.



Your comfort is the best measure of how to adjust your setting. When first installed, your dehumidifier has to remove all the moisture that is initially in your home. The home acts like a sponge so the moisture in the materials of your home is at the same level as the air. After drying the air, the materials of the home will release moisture back into the air until they are again at the same level. As a result, it is not uncommon for the dehumidifier to operate for an extended period when first installed.

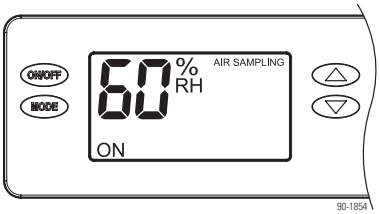
ENERGY SAVINGS TIPS

Energy Savings Tip #1: Adjust the humidity setting to be as high as is comfortable to reduce dehumidifier run time. If it feels clammy or "smells musty", lower the humidity setting. To save energy, turn the dehumidifier to OFF when you open your windows, just as you would with air conditioning.

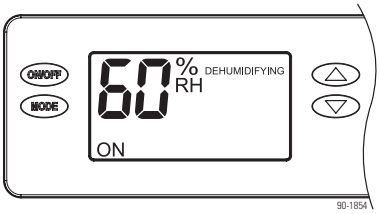
Energy Savings Tip #2: If vacating your home for an extended period in the summer, set the RH at 55% and set your thermostat as high as you are comfortable setting it to in the cooling mode. Consult with appropriate professionals regarding the highest temperature that is safe for your pets or possessions. This will keep the humidity at a controlled level while minimizing the amount of cooling energy used.

HOW DOES THE DEHUMIDIFIER WORK?

Once per hour the dehumidifier will measure the humidity level of the air and compare it to the humidity setting. If the humidity in your home is higher than the setting, the dehumidifier will dehumidify the air until the humidity level drops below the setting. **NOTE:** The dehumidifier will continue to dehumidify until the humidity level is 3%RH below the setting.



When the dehumidifier turns on, the blower circulates the air for 3 minutes before measuring the humidity level of the air. The on-board control will display AIR SAMPLING, along with the measured humidity on the control screen.



If the humidity of the air is higher than the setting, the compressor turns on and the control will display DEHUMIDIFYING, along with the measured humidity on the control screen.

Your dehumidifier is equipped with two features that protect against unwanted energy consumption. Defrost is a normal operating mode that helps to prevent significant ice formation on the refrigeration system coil. The dehumidifier display will show "DEFROSTING" when operating in this mode. This mode can occur when there is not enough air moving through the dehumidifier or if the temperature and/or humidity of the incoming air is too low. The second protection feature is the E8 code. E8 on the dehumidifier display indicates that the air entering the dehumidifier is below 50°F or above 104°F, or the dew point of the incoming air is below 40°F. There would be a significant reduction in dehumidifier efficiency if the dehumidifier operated outside of these conditions. Low dew point conditions can be seen in some basements or crawl spaces and usually occur in the Winter and Spring months. The dehumidifier continues to monitor the incoming air and when the conditions are within the operating range, E8 will be removed from the display and dehumidification will begin as needed.

OPTIONAL – HEATING AND COOLING SYSTEM BLOWER OPERATION

Your installing contractor may have configured the dehumidifier to turn on the heating and cooling system blower when the dehumidifier turns on to allow for improved circulation of the dry air.

EXTERNAL CONTROL OPTIONS

Your Aprilaire dehumidifier can be controlled with an optional external control that is conveniently located in the living space. The Aprilaire Model 76, 8620, and 8910 are recommended controls. The Model 76 is a dedicated dehumidifier control and the 8620 and 8910 integrate dehumidification control as part of the thermostat minimizing the number of controls on the wall.

The Model 76 can also act as a remote control if the dehumidifier is located in a crawl space. Install the Model 76 in your living space and make changes to the dehumidifier setting or find out what the humidity level is in the crawl space from the comfort and convenience of the living space.

If one of these controls or any other external control is installed, please refer to their owner's manuals for operating instructions. Aprilaire owner's manuals are available at www.aprilaire.com.

If you are interested in having an external control installed, please consult your installing contractor.

Model 76 Control

Model 8620 Thermostat or Model 8910* Home Comfort Control™

8620 Main Display Screen

8620 Humidity Control Screen

**Model 8910 consists of a thermostat and equipment control module to accommodate the installation of various IAQ accessories.*

HOW DOES THE OPTIONAL VENTILATION WORK?

If you had your contractor install the optional ventilation feature, they calculated how much fresh air was needed based on various factors (i.e. home size, number of occupants, local building codes, etc.). Knowing how much is needed and the rate at which fresh air will be brought into your home, the contractor set up the dehumidifier control to operate ventilation a certain amount of time per hour to provide the needed fresh air. When ventilation operates, a damper in a duct that brings air in from the outside opens, and your heating and cooling system blower will run to distribute the fresh air.

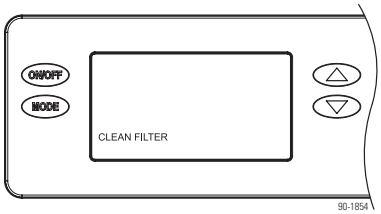
If you need to change the amount of time to operate ventilation, press the MODE button twice to display the ventilation time setting. Use the UP or DOWN button to adjust the number of minutes per hour (0–60, set to zero to turn it off) that ventilation is to run. The control will return to the dehumidifier setting display automatically.

For additional information, go to www.aprilaire.com to find out more about the benefits of home ventilation.

MAINTENANCE

CLEAN OR REPLACE THE AIR FILTER

After initial installation the air filter should be checked and cleaned every 6 months. The CLEAN FILTER service reminder will display on the on-board control screen every 6 months. To clear the service message, press the UP and DOWN arrows simultaneously for 3 seconds.



Filter Cleaning Procedure

1. Turn the ON/OFF switch OFF.
2. Remove the filter access door from either side of the dehumidifier.
3. Slide the filter out of the dehumidifier.
4. Flush the filter with warm water and a mild detergent solution.
5. Shake off the excess water from the filter.
6. Replace the filter, making sure the filter is secured in both the top and bottom filter rails.
7. Replace the filter access door.
8. Turn the ON/OFF switch ON.
9. Press the UP and DOWN buttons simultaneously for 3 seconds to clear the service message.

MAINTENANCE (CONTINUED)

CHECK THE DRAIN

The drain should be checked annually to ensure there are no blockages or air lock in the drain system. If the unit is not draining properly, have it checked by a qualified service professional.

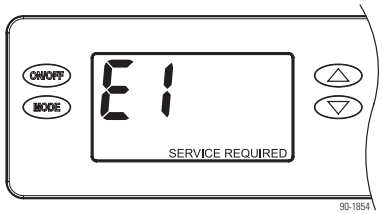
⚠ CAUTION

Do not use spray solvents or cleaners on or near the inlet side of the dehumidifier.
If desired, apply cleaner to a cloth and use to clean the cabinet.

TROUBLESHOOTING

DIAGNOSTIC CODES

The on-board control will display a diagnostic code if an error should occur and service is required. Contact your installing contractor if E1–E7 or E9 is displayed on the on-board control screen. E8 will be displayed if the incoming air temperature is below 50°F, above 104°F, or when the dew point is below 40°F. When the incoming air is within the acceptable range, the dehumidifier will resume operation. If the error persists, contact your installing contractor.



LIMITED WARRANTY

Your Research Products Corporation Aprilaire® Dehumidifier is expressly warranted for five (5) years from date of installation to be free from defects in materials or workmanship.

Research Products Corporation's exclusive obligation under this warranty shall be to supply, without charge, a replacement for any component which is found to be defective within such five (5) year period and which is returned not later than thirty (30) days after said five (5) year period by you to either your original supplier or to Research Products Corporation, Madison, Wisconsin 53701, together with the model number and installation date of the dehumidifier.

THIS WARRANTY SHALL NOT OBLIGATE RESEARCH PRODUCTS CORPORATION FOR ANY LABOR COSTS AND SHALL NOT APPLY TO DEFECTS IN WORKMANSHIP OR MATERIALS FURNISHED BY YOUR INSTALLER AS CONTRASTED TO DEFECTS IN THE DEHUMIDIFIER ITSELF.

IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL BE LIMITED IN DURATION TO THE AFORESAID FIVE YEAR PERIOD. RESEARCH PRODUCTS CORPORATION'S LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, OTHER THAN DAMAGES FOR PERSONAL INJURIES, RESULTING FROM ANY BREACH OF THE AFORESAID IMPLIED WARRANTIES OR THE ABOVE LIMITED WARRANTY IS EXPRESSLY EXCLUDED. THIS LIMITED WARRANTY IS VOID IF DEFECT(S) RESULT FROM FAILURE TO HAVE THIS UNIT INSTALLED BY A QUALIFIED HEATING AND AIR CONDITIONING CONTRACTOR. IF THE LIMITED WARRANTY IS VOID DUE TO FAILURE TO USE A QUALIFIED CONTRACTOR, ALL DISCLAIMERS OF IMPLIED WARRANTIES SHALL BE EFFECTIVE UPON INSTALLATION.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages so the above exclusion or limitations may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

WARRANTY REGISTRATION

Visit us on-line at **www.aprilaire.com** to register your Aprilaire product. If you do not have on-line access, please mail a postcard with your name, address, phone number, email address, product purchased, model number, date of purchase and dealer name and address to:

Research Products Corporation, P.O. Box 1467, Madison, WI 53701

Your Warranty Registration information will not be sold or shared outside of this company.

Aprilaire®
Feel Good. Inside.™

P.O. Box 1467 • Madison, WI 53701-1467 • Phone: 800/334-6011 • Fax: 608/257-4357 • **www.aprilaire.com**

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B2206475A

Project Name:	Type:
Part Number:	Date:

GREENCREATIVE

COMPACT HID REPLACEMENT BULB

060523

FEATURES

- Integral driver suitable for 120-277V
- Integral thermal sensor reduces power to the lamp in the event ambient temperature exceeds specified limitations
- E26 versions are smooth dimming with existing installations*
- EX39 versions are step-dimming using SelectDrive technology
- A21 replaces up to 125W Inc.
- A23 replaces up to 200W Inc.
- PS30 replaces up to 100-175W HID, E26 version replaces up to 300W Inc.
- Suitable for damp locations and totally enclosed fixtures**
- Lamp ambient temperature: -4°F to 140°F (-20°C to 60°C)
- Fixture operating temperature: -4°F to 113°F (-20°C to 45°C)
- Rated lifetime (L70): 50,000hrs
- 5 year limited warranty***
- Supplied with safety cable to provide secondary support for A23 and PS30
- 4kV integral surge protector
- For installation in Post Top, Area light, or other fixtures exposed to high surge conditions, the use of our 10KV surge protector 97718-10SURGE/277V is recommended.

FOCUS FEATURE

EX39 version has integrated side switch for step-dimming

3 Level power output

Power select switch allows power to be tailored to application requirements and can be adjusted from high to low.

SelectDrive

	CCT	Wattage	Lumen	LPW
34HID/8xx/277V/EX39/SD	3000K	40%-13.6W	1,800	132
		60%-20.4W	2,700	132
		100%-34W	4,500	132
	4000K	40%-13.6W	2,000	147
		60%-20.4W	3,000	147
		100%-34W	5,000	147
	5000K	40%-13.6W	2,000	147
		60%-20.4W	3,000	147
		100%-34W	5,000	147

	CCT	Wattage	Lumen	LPW
24HID/8xx/277V/EX39/SD	3000K	40%-9W	1,250	139
		60%-14W	1,850	132
		100%-24W	3,100	129
	3500K	40%-9W	1,250	139
		60%-14W	1,850	132
		100%-24W	3,100	129
	4000K	40%-9W	1,300	144
		60%-14W	1,900	136
		100%-24W	3,200	133
	5000K	40%-9W	1,300	144
		60%-14W	1,900	136
		100%-24W	3,200	133

Where xxx means 824-965 which indicates CRI and color temperature

GREENCREATIVE

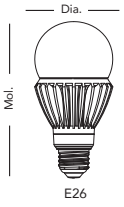
COMPACT HID REPLACEMENT BULB

SPECIFICATIONS

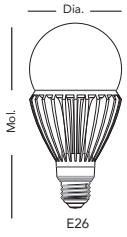
Product	Model	Equiv.	Input Voltage	Wattage	Lumens	CCT	CRI	Efficacy (LPW)	Beam Angle	Dim.*	Power Factor	THD	Fixture Rating	DLC / ES
36165	17A21/830/277V/DIM	125W Inc.	120-277V	17	2,000	3000K	82	118	230°	Yes	0.9	<20%	Enclosed	N.A. / √
36166	17A21/835/277V/DIM	125W Inc.	120-277V	17	2,000	3500K	82	118	230°	Yes	0.9	<20%	Enclosed	N.A. / √
36167	17A21/840/277V/DIM	125W Inc.	120-277V	17	2,100	4000K	82	124	230°	Yes	0.9	<20%	Enclosed	N.A. / √
36168	17A21/850/277V/DIM	125W Inc.	120-277V	17	2,100	5000K	82	124	230°	Yes	0.9	<20%	Enclosed	N.A. / √
36169	24HID/830/277V/E26/DIM	200W Inc.	120-277V	24	3,100	3000K	82	129	230°	Yes	0.9	<20%	Enclosed	N.A. / √
36214	24HID/835/277V/E26/DIM	200W Inc.	120-277V	24	3,100	3500K	82	129	230°	Yes	0.9	<20%	Enclosed	N.A. / √
36170	24HID/840/277V/E26/DIM	200W Inc.	120-277V	24	3,200	4000K	82	133	230°	Yes	0.9	<20%	Enclosed	N.A. / √
36171	24HID/850/277V/E26/DIM	200W Inc.	120-277V	24	3,200	5000K	82	133	230°	Yes	0.9	<20%	Enclosed	N.A. / √
36158	24HID/830/277V/EX39/SD	70-100W HID	120-277V	24	3,100	3000K	82	139	230°	No	0.9	<20%	Enclosed	√ / N.A.
36159	24HID/835/277V/EX39/SD	70-100W HID	120-277V	24	3,100	3500K	82	139	230°	No	0.9	<20%	Enclosed	√ / N.A.
36160	24HID/840/277V/EX39/SD	70-100W HID	120-277V	24	3,200	4000K	82	144	230°	No	0.9	<20%	Enclosed	√ / N.A.
36161	24HID/850/277V/EX39/SD	70-100W HID	120-277V	24	3,200	5000K	82	144	230°	No	0.9	<20%	Enclosed	√ / N.A.
36173	34HID/840/277V/E26/DIM	300W Inc.	120-277V	34	5,000	4000K	82	147	230°	Yes	0.9	<20%	Enclosed	N.A. / √
36174	34HID/850/277V/E26/DIM	300W Inc.	120-277V	34	5,000	5000K	82	147	230°	Yes	0.9	<20%	Enclosed	N.A. / √
36163	34HID/840/277V/EX39/SD	100-175W HID	120-277V	34	5,000	4000K	82	147	230°	No	0.9	<20%	Enclosed	√ / N.A.
36164	34HID/850/277V/EX39/SD	100-175W HID	120-277V	34	5,000	5000K	82	147	230°	No	0.9	<20%	Enclosed	√ / N.A.

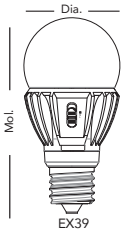
*This lamp is available for dimming with 120V line voltage only and might not be compatible with all dimmers. Please visit www.greencreative.com for compatibility information.
***Please visit www.greencreative.com for Limited Warranty terms.

DIMENSION & WEIGHT

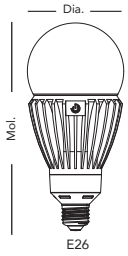


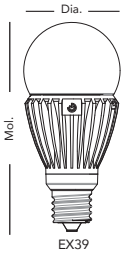
Model	Base	Mol.	Dia.	Weight
17A21/xxx/277V/DIM	E26	5-1/4"	2-5/8"	2-5/8"





Model	Base	Mol.	Dia.	Weight
24HID/xxx/277V/E26/DIM	E26	6-5/8"	3-5/16"	0.82 lb
24HID/xxx/277V/EX39/SD	EX39	6-11/16"	3-5/16"	0.87 lb





Model	Base	Mol.	Dia.	Weight
34HID/xxx/277V/E26/DIM	E26	8-1/8"	3-3/4“	1.42 lb
34HID/xxx/277V/EX39/SD	EX39	8-1/8"	3-3/4“	1.49 lb

Where xxx means 824-965 which indicates CRI and color temperature

GREENCREATIVE

COMPACT HID REPLACEMENT BULB

ORDERING INFORMATION

Model Number	Master Carton			Shipping Carton		
	Case Qty	Case Dimensions (LxWxH)	Case Weight	Case Qty	Case Dimensions (LxWxH)	Case Weight
17A21/xxx/277V/DIM	6PCS	8-15/16"x 6-1/4" x 6-1/2"	3.5 lb	24PCS	12-7/8" x 9-5/16" x 13-3/4"	15 lb
24HID/xxx/277V/E26/DIM	6PCS	11-1/4" x 7-9/16" x 7-13/16"	6.4 lb	24PCS	15-1/2" x 11-9/16" x 8-7/16"	13.4 lb
24HID/xxx/277V/EX39/SD	6PCS	11-1/8" x 7-1/2" x 7-7/8"	7.5lb	24PCS	15-1/2" x 11-3/4" x 8-7/16"	15.2lb
34HID/xxx/277V/E26/DIM	N.A.	N.A.	N.A.	12PCS	16-9/16"x 12-3/8"x 9-9/16"	21.2 lb
34HID/xxx/277V/EX39/SD	N.A.	N.A.	N.A.	12PCS	16-9/16" x 12-3/8"x 9-9/16"	22.1 lb

Where xxx means 824-965 which indicates CRI and color temperature

**MINIMUM COMPARTMENT DIMENSIONS (FOR ENCLOSED FIXTURES)

Low bay installation 	Model Number		24HID/xxx/277V/EX39/SD	34HID/xxx/277V/EX39/SD
	Lamp Compartment Dimensions	Diameter	6"	8''
		Height	8-1/2"	11''
	Maximum Lamps in Luminaire		1	1

Post top installation 	Model Number		24HID/xxx/277V/EX39/SD	34HID/xxx/277V/EX39/SD
	Lamp Compartment Dimensions	Diameter	3-9/16"	8"
		Height	7-7/8"	11"
	Maximum Lamps in Luminaire		1	1

	Model Number		17A21/xxx/277V/DIM	24HID/xxx/277V/E26/DIM	34HID/xxx/277V/E26/DIM
Low bay installation 	Lamp Compartment Dimensions	Diameter	6"	6"	8''
		Height	8-1/2"	8-1/2"	11''
Post top installation 		Diameter	3-9/16"	3-9/16"	8''
		Height	7-7/8"	7-7/8"	11''
Maximum Lamps in Luminaire			1	1	1

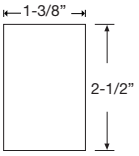
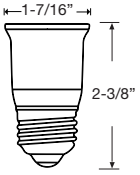
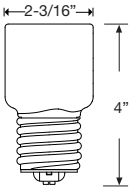
**Installing lamp in a fixture that does not have the minimum compartment dimensions will void the warranty and could cause product failures.

SUPPLIED ACCESSORY

Description	Picture	Dimensions
Safety Cable		22-13/16"

COMPACT HID REPLACEMENT BULB

OPTIONAL ACCESSORY ORDERING INFORMATION

Product	Model	Description	Picture	Dimensions
97718	10SURGE/277V	10 kV Surge Protector (For use in outdoor and other applications subject to high surge conditions)		
16325	E26 EXTENDER	E26 Lamp Extender Adds 1-5/16" to Lamp Height		
35050	E39 EXTENDER	EX39 Lamp Extender Adds 1-11/16" to Lamp Height		

CERTIFICATION INFORMATION

Product	Model	DLC ID#	ES ID#
36158	24HID/830/277V/EX39/SD	PLEQ5F7K	N.A.
36159	24HID/835/277V/EX39/SD	PW8VV6BP	N.A.
36160	24HID/840/277V/EX39/SD	PRDUFT1V	N.A.
36161	24HID/850/277V/EX39/SD	PLEQ5F7K	N.A.
36162	34HID/830/277V/EX39/SD	PSE1QG12	N.A.
36163	34HID/840/277V/EX39/SD	P7TYZ0PO	N.A.
36164	34HID/850/277V/EX39/SD	PYW8K0EW	N.A.
36165	17A21/830/277V/DIM	N.A.	2390212
36166	17A21/835/277V/DIM	N.A.	2390213
36167	17A21/840/277V/DIM	N.A.	2390214
36168	17A21/850/277V/DIM	N.A.	2390215
36169	24HID/830/277V/E26/DIM	N.A.	2390216
36214	24HID/835/277V/E26/DIM	N.A.	2390217
36170	24HID/840/277V/E26/DIM	N.A.	2390218
36171	24HID/850/277V/E26/DIM	N.A.	2390219
36173	34HID/840/277V/E26/DIM	N.A.	2390221
36174	34HID/850/277V/E26/DIM	N.A.	2390222

Light Efficient Design

SCREW-IN RETROFITS

FLEXCOLOR A21/23 HIGH OUTPUT

safe for use in enclosed fixtures

flexCOLOR → switch between color temps

- Frosted design to reduce glare.
- 360° light output for optimal performance.
- Switch between 3000K, 4000K,& 5000K right on the unit.
- Pretested & potted drivers are burnt in 3x prior to shipping and protected against vibration & moisture.
- Engineered to work efficiently in enclosed fixtures & damp environments.
- Protected against insects & dust.
- Models 35W and above dim to 50% by the switch located on the side of the lamp only (stepped dimmable by other wired communication protocol)

5 YEAR WARRANTY

120/277V — ALSO WORKS ON 208V & 240V

UL TYPE B BALLAST BYPASS — INSTALL METHOD

MEDIUM + MOGUL BASE

BASE — VERTICAL MOUNTING

80+ — CRI

-40°F TO 113°F — OPERATING TEMP

ENCLOSED FIXTURES

L70 — 50,000hrs RATED LIFE

IP64 RATED — INGRESS PROTECTION

PART #	UPC	REPLACES	WATTAGE	LUMENS	COLOR (K)	BASE
LED-8017E345-G3	844006080143	150W INC	20W	2400/2700/2600	3000K/4000K/5000K	E26
LED-8018E345-G3	844006080181	200W INC	25W	3000/3375/3250	3000K/4000K/5000K	E26
LED-8019E345-G3	844006080198	300W INC	35W	4200/4725/4550	3000K/4000K/5000K	E26
LED-8019M345-G3	844006080204	175W HID	35W	4200/4725/4550	3000K/4000K/5000K	EX39
LED-8020M345-G3	844006080211	250W HID	45W	5400/6075/5850	3000K/4000K/5000K	EX39
LED-8021M345-G3	844006080228	320W HID	65W	7800/8775/8450	3000K/4000K/5000K	EX39

* available Fall 2022

* dimensions on page 2

c UL us LISTED — RoHS Compliant — ENERGY STAR — FC

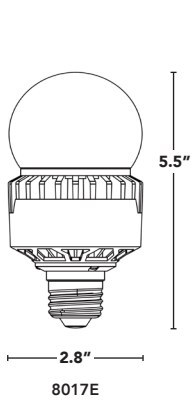
LIGHT EFFICIENT DESIGN HEADQUARTERS 188 S. Northwest Highway • Cary, IL 60013
INNOVATION & MANUFACTURING CENTER 30 Log Bridge Road, Building 200 • Middleton, MA 01949
847.380.3540 • led-llc.com

08.17.22 Information is subject to change without notice.

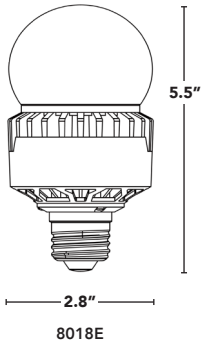
Light Efficient Design

SCREW-IN RETROFITS

A21/23 HIGH OUTPUT



8017E



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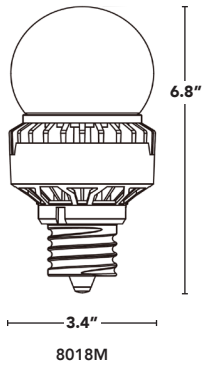
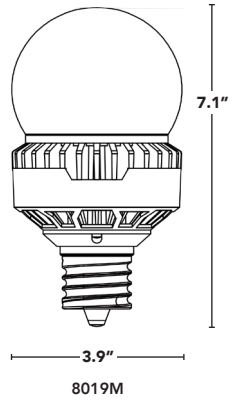
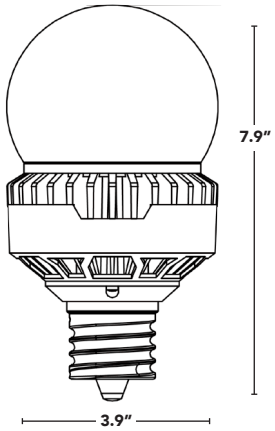


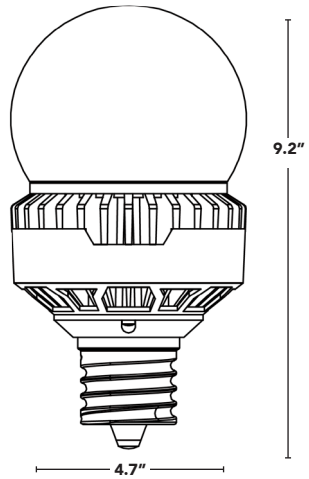
8018M



8019M



8020M



8021M

LIGHT EFFICIENT DESIGN HEADQUARTERS 188 S. Northwest Highway • Cary, IL 60013
INNOVATION & MANUFACTURING CENTER 30 Log Bridge Road, Building 200 • Middleton, MA 01949
847.380.3540 • led-llc.com

Light Efficient Design

Product Information Bulletin

DULUX® D/E EOL ECOLOGIC®

4-Pin Compact Fluorescent Lamps With End-Of-Life Protection

- Compact fluorescent lamps for use on dimming and electronic ballasts
- End-of-Life (EOL) shut down protection
- Pass Federal TCLP tests
  - Pair with linear ECOLOGIC lamps for TCLP compliant installations
- Uses about 1/4 the energy of an incandescent lamp with similar lumen output
- Long 12,000 hour average rated life
  - Typically 12-16 times longer than standard incandescents
  - Reduces relamping requirements and related costs
- Rare earth phosphors – 82 CRI
- 2700K, 3000K, 3500K and 4100K color temperatures
- 86% lumen maintenance

ECOLOGIC is a comprehensive program of OSRAM SYLVANIA focused on addressing environmental issues at all stages of lamp life.

SYLVANIA DULUX D/E EOL ECOLOGIC lamps are long-life, energy-saving alternatives for incandescent lamps. When paired with SYLVANIA linear ECOLOGIC lamps, all the fluorescent lamps in an installation will be TCLP compliant. Each lamp has a built in feature that will safely shut the lamp down at end of lamp life.

NEMA[1] has expressed concern regarding the end-of-life operation of small diameter (T5 or less), 4-pin, compact fluorescent lamps. When operated on high frequency, electronic ballasts, these lamps may experience an abnormal end-of-life phenomenon – bulb wall cracking near the lamp base and/or overheating in the base area and possibly melting the lamp base and socket. NEMA recommends that high frequency, electronic ballasts have an end-of-life shutdown circuit which will reliably shut down the system in the rare event of abnormal end-of-life.

1. NEMA: National Electrical Manufacturers Association

The DULUX D/E EOL ECOLOGIC lamps provide protection for existing ballasts with no end-of-life protection. DULUX D/E EOL ECOLOGIC lamps can also be used with ballasts with end-of-life protection to provide additional protection.

Product Availability

Lamp Type	Wattage	Rated Lumens
CF13DD/E/827	13	900
CF13DD/E/830	13	900
CF13DD/E/835	13	900
CF13DD/E/841	13	900
CF18DD/E/827	18	1150
CF18DD/E/830	18	1150
CF18DD/E/835	18	1150
CF18DD/E/841	18	1150
CF26DD/E/827	26	1710
CF26DD/E/830	26	1710
CF26DD/E/835	26	1710
CF26DD/E/841	26	1710

Application Information

Applications

Recessed ceiling fixtures
Wall sconces
Exit signs
Showcase lighting
Task lighting
Garden and walkway lighting

Fixtures

Contact your local fixture agent for available fixtures

Ballast Information

Contact your OSRAM SYLVANIA representative for information about compatible electronic operating systems

Application Notes

1. 4-Pin, lamps designed for dimming and electronic ballast operation.
2. Minimum starting temperature depends on ballast.
3. Rule of thumb: to estimate the appropriate compact fluorescent lamp wattage, divide the incandescent wattage by 4.
4. Lamps manufactured to prevent abnormal end-of-life lamp failures.
5. Equipment manufacturers are advised to consult ANSI and IEC standards for the maximum allowable dimensions and temperature to insure compatibility with similar products.

Sample Specification

Lamp(s) shall be (a) DULUX D/E ECOLOGIC (CF13DD/E, CF18DD/E or CF26DD/E) lamps with internal end-of-life shut down feature and pass existing Federal TCLP limits. Lamps shall have an average rated life of 12,000 hours, a correlated color temperature of (2700K, 3000K, 3500K or 4100K), and a CRI of 82. Lamps shall have a (G24q-1, G24q-2, G24q-3) plug-in, 4-pin base and be suitable for use on electronic and dimming ballasts. Lamps shall be operated by QUICKTRONIC® Professional ballasts. Both lamps and ballasts covered by the QUICK 60+® system warranty.

Ordering and Specification Information

Item Number	Ordering Abbreviation	NEMA Generic Description	Watts	Base	Initial Lumens	Mean Lumens[1]	Color Temp.	CRI	Avg. Rated Life (hrs.)[2]	Amps[3]	Volts[3]
20682	CF13DD/E/827	CFQ13W/G24q/27	13	G24q-1	900	774	2700K	82	12,000	0.165	77
20721	CF13DD/E/830	CFQ13W/G24q/30	13	G24q-1	900	774	3000K	82	12,000	0.165	77
20671	CF13DD/E/835	CFQ13W/G24q/35	13	G24q-1	900	774	3500K	82	12,000	0.165	77
20667	CF13DD/E/841	CFQ13W/G24q/41	13	G24q-1	900	774	4100K	82	12,000	0.165	77
20683	CF18DD/E/827	CFQ18W/G24q/27	18	G24q-2	1150	989	2700K	82	12,000	0.210	80
20724	CF18DD/E/830	CFQ18W/G24q/30	18	G24q-2	1150	989	3000K	82	12,000	0.210	80
20672	CF18DD/E/835	CFQ18W/G24q/35	18	G24q-2	1150	989	3500K	82	12,000	0.210	80
20668	CF18DD/E/841	CFQ18W/G24q/41	18	G24q-2	1150	989	4100K	82	12,000	0.210	80
20684	CF26DD/E/827	CFQ26W/G24q/27	26	G24q-3	1710	1470	2700K	82	12,000	0.300	80
20722	CF26DD/E/830	CFQ26W/G24q/30	26	G24q-3	1710	1470	3000K	82	12,000	0.300	80
20673	CF26DD/E/835	CFQ26W/G24q/35	26	G24q-3	1710	1470	3500K	82	12,000	0.300	80
20669	CF26DD/E/841	CFQ26W/G24q/41	26	G24q-3	1710	1470	4100K	82	12,000	0.300	80

1. Measured at 40% (4,000 hours) of rated life.
2. Based on 3 hours per start. Number of operating hours when half have failed and half are still operating.
3. At 25 KHz

Lamp Comparison

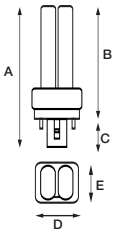
Compact Fluorescent vs Incandescent

Lamp Type	Rated Lamp Life	Ballast Factor	System Lumens	System Wattage	System LPW	Energy Savings
2 - 26 Watt DULUX D ECOLOGIC	12,000 hours	1.0	3600	48	51	76%
1 - 200A Watt Incandescent	750 hours	1.0	3800	200	75	–

Ordering Guide

CF	26	DD	/	E	/	8	27
Compact Fluorescent	Wattage: 13, 18, or 26 Watts	DULUX Double		for electronic and dimming ballasts		8=82 CRI	27=2700K 30=3000K 35=3500K 41=4100K

Dimensions

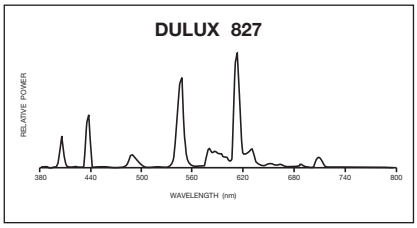


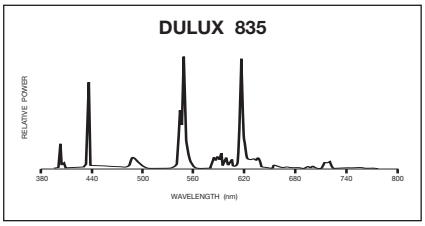
Ordering Abbreviation	(A) Max. Overall Length [in (mm)]	(B) Base Face to Top of Lamp [in (mm)]	(C) Guide Post Length [in (mm)]	(D) Max. Base Width [in (mm)]
CF13DD/E	5.2 (132)	4.5 (114)	0.62 (16)	1.4 (35)
CF18DD/E	5.8 (147)	5.1 (130)	0.62 (16)	1.4 (35)
CF26DD/E	6.6 (168)	5.9 (150)	0.62 (16)	1.4 (35)

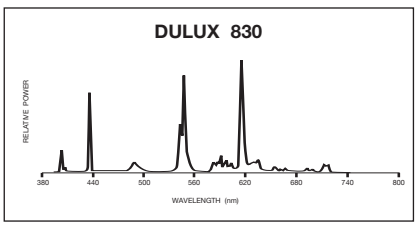
T4 diameter glass tubing = 0.5 inches (12.7 mm)

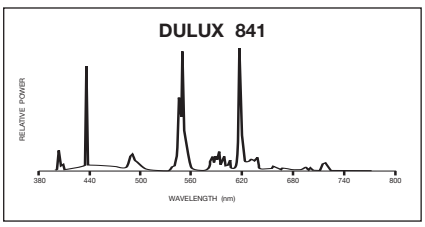
Technical Information

Spectral Power Distributions









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Visit our website: www.sylvania.com

COLOR SELECTABLE LED DOWNLIGHT

DESCRIPTION

Easily add versatile lighting to your ceilings by installing these color selectable LED downlights featuring 5 selectable color temperatures.

FEATURES

- Energy efficient replacement for 40W, 60W, 75W, and 120W incandescents
- High color rendering index (CRI) of 90 makes colors appear more naturally
- Light output varies depending on the color temperature selected; see Selectable Table for more information.
- IC Rated
- 0-10V dimming; see Compatible Dimmers section for a full list of compatible dimmers
- Color temperature can be adjusted via switch inside of the driver box; see installation instructions for more information

LISTINGS

- ETL Listed for wet locations
- Energy Star
- IC Rated
- RoHS

PERFORMANCE

- CRI: >90
- CCT: 2700K, 3000K, 35000K, 4000K, and 5000K
- LED L70 Life Hours @ 25°C: 54,000 hours

THERMAL

- -4°F to 104°F (-20°C to 40°C) operating temperature

ELECTRICAL

- THD: <15
- Power Factor: ≥0.9
- Input Voltage: 120-277V
- Surge Protection: 0.5-1k

CONSTRUCTION

- Aluminum body with trim, both with white finish
- Frosted PMMA lens

WARRANTY

- 5-year limited warranty; see pltsolutions.com for warranty details

project name	type
catalog number	
comments	voltage
approved by	date

ENERGY STAR RoHS Compliant ETL LISTED

APPLICATIONS

- Offices
- Lobbies
- Conference Rooms
- Living Rooms
- Hallways
- Bathrooms
- Laundry Rooms

PERFORMANCE	**Power Consumption***	10, 15 Watt
	CRI	>90
	CCT*	2700K, 3000K, 3500K, 4000K, 5000K
	Beam Angle	90°, 95°
	LED L70 Life Hours	54,000
ELECTRICAL	**Power Factor**	>0.9
	THD	120-277V
	Input Voltage	White
CONSTRUCTION	**Housing**	Frosted
	Lens	ETL Listed; IC Rated
LISTINGS	**Certifications**	RoHS – No mercury or lead
	Environment	Wet Location Rated

PERFORMANCE SUMMARY

Item #	UPC	Size	Wattage*	CCT*	Voltage	Replaces	CRI	Beam Angle	LED L70 Life Hours	Dimmable	Energy Star
PLT-20269	842821120754	3”	6	2700K / 3000K / 3500K 4000K / 5000K	120-277V	40W Incan.	>90	90°	54,000	Yes	PLTSBH9551
PLT-20270	842821120761	4”	10	2700K / 3000K / 3500K / 4000K / 5000K	120-277V	60W Incan.	>90	95°	54,000	Yes	PLTSBF1551
PLT-20271	842821120778	6”	15	2700K / 3000K / 3500K 4000K / 5000K	120-277V	80W Incan.	>90	95°	54,000	Yes	PLTSBD2551
PLT-20272	842821120785	8”	25	2700K / 3000K / 3500K 4000K / 5000K	120-277V	120W Inca.	>90	95°	54,000	Yes	PLTSBLC551

** See Selectable Table for full breakdown*

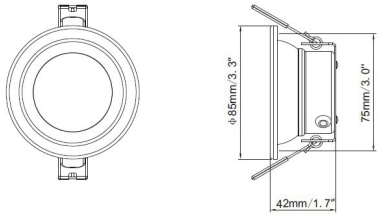
SELECTABLE TABLE

Wattage	CCT	Lumen	Efficacy
6	2700K	400	67
	3000K	450	75
	3500K	460	77
	4000K	460	77
	5000K	450	75
10	2700K	850	73
	3000K	900	80
	3500K	980	87
	4000K	980	87
	5000K	900	80
15	2700K	1100	73
	3000K	1200	80
	3500K	1300	87
	4000K	1300	87
	5000K	1200	80
25	2700K	1800	72
	3000K	2000	80
	3500K	2100	84
	4000K	2100	84
	5000K	2100	84

DIMMER COMPATIBILITY

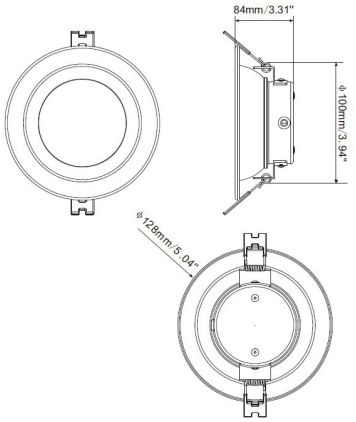
Brand	Model
LEGRAND	RH4FBL3PTCCCV6
LEGRAND	RH4FBL3PTC
LUTRON	DVSTV-WH
LUTRON	DVSTV-36WH29
LUTRON	MS-Z101
LUTRON	RMJS-8TN-DV-B
LEVITON	IP710-LFZ

DIMENSIONS



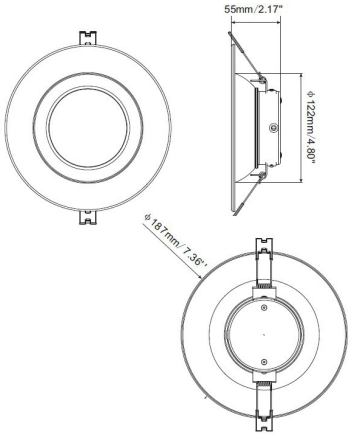
3" DOWNLIGHT

Outside Diameter – 3.3"
Inside Diameter – 2.05"
Height – 1.7"



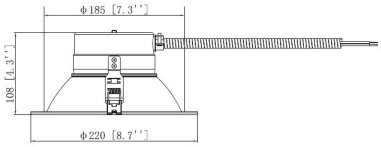
4" DOWNLIGHT

Outside Diameter – 5.04"
Inside Diameter – 3.41"
Height – 1.9"



6" DOWNLIGHT

Outside Diameter – 7.36"
Inside Diameter – 3.41"
Height – 2.17"

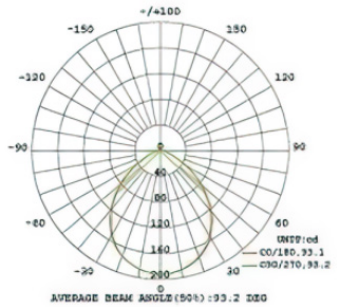


8" DOWNLIGHT

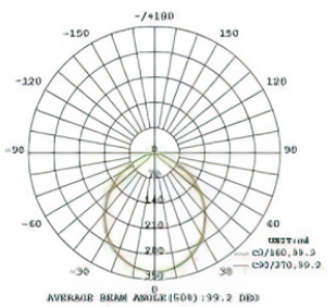
Outside Diameter – 8.66"
Inside Diameter – 4.31"
Height – 3.15"

PHOTOMETRICS

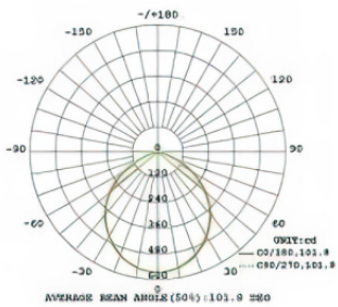
3" DOWNLIGHT



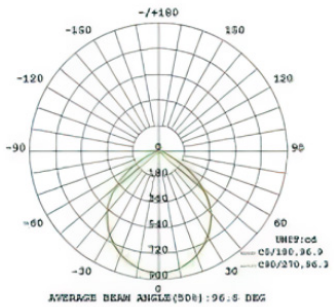
4" DOWNLIGHT



6" DOWNLIGHT



8" DOWNLIGHT

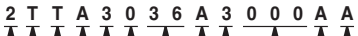


WARNINGS

- Cutout size requirements: 3" – 3.13"; 4" – 4.65"; 6" – 5.5"; 8" – 7.28"

Model Nomenclature

Outdoor Units



Refrigerant Type
2 = R-22
4 = R-410A

TRANE

Product Type
W = Split Heat Pump
T = Split Cooling

Product Family
Z = Leadership – Two Stage
X = Leadership
R = Replacement/Retail
B = Basic
A = Light Commercial

Family SEER
0 = 10 3 = 13 6 = 16
1 = 11 4 = 14 8 = 18
2 = 12 5 = 15 9 = 19

Split System Connections 1-6 Tons
0 = Brazed

Nominal Capacity in 000s of BTUs

Major Design Modifications

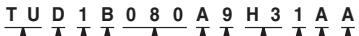
Power Supply
1 = 200-230/1/60 or 208-230/1/60
3 = 200-230/3/60
4 = 460/3/60

Secondary Function

Minor Design Modifications

Unit Parts Identifier

High Efficiency Furnaces



Furnace Configuration
TU = Upflow / Horizontal
TD = Downflow / Horizontal

Type
D = 80% Premium
X = 90% Premium

Number of Heating Stages
1 = Single Stage
2 = Two Stage
3 = Three Stage

Cabinet Width
A = 14.5" Cabinet Width
B = 17.5" Cabinet Width
C = 21.0" Cabinet Width
D = 24.5" Cabinet Width

Heating Input
080 = 80,000 BTUH

Major Design Change

Power Supply / Fuel
9 = 115 Volts / Natural Gas
F = 115 Volts / Natural Gas with Integrated ifD Filter

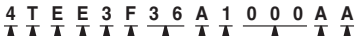
Airflow Capacity for Cooling
36 = 3 Ton Standard PSC Motor
H3 = 3 Ton High Efficiency Motor
V3 = 3 Ton Variable Speed Motor

Draft Inducer Speeds
1 = Single Speed
2 = Two Speed
V = Variable Speed

Minor Design Change

Service Digit – Not Orderable

Air Handlers – Residential



Refrigerant Type
4 = R-410A
2 = R-22

Application
TE = Fully Convertible
TG = Semi Convertible
TF = Front Return
TV = Vertical

Product Family
E = Leadership – Variable Speed
P = Leadership
C = Replacement/Retail
B = Basic

Flow Control
3 = Nonbleed TXV
4 = FCCV*

Feature Identifier
0 = Standard Unit
F = Air-Tite™

Nominal Capacity in 000s of BTUs

Major Design Modifications

Power Supply
1 = Single Phase

Electrical Connection
0 = Pig Tails
B = Circuit Breaker
D = Pull Disconnect

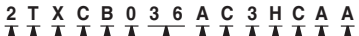
Future Option – Factory Installed Heater Nominal KW Value

Minor Design Modifications

Unit Parts Identifier

NOTE: There will be a phase-in of new model numbers for new air handlers over next 2 years.
*Shipped with R-22 FCCV

Heat Pump / Cooling Coils



Refrigerant Type
2 = R-22 4 = R-410A

Product Family
T = Premium (Heat Pump or Convertible Coil)
C = Standard (Cooling Only)

Coil Design
X = Direct Expansion Evaporator Coil

Product Family
C = Cased A Coil
A = Uncased A Coil
F = Cased Horizontal Flat Coil

Coil Width (Cased / Uncased)
A = 14.5" / 13.3" C = 21.0" / 19.8" H = 10.5"
B = 17.5" / 16.3" D = 24.5" / 23.3"

Refrigerant Line Coupling
0 = Brazed

Nominal Capacity in 000s of BTUs

Major Design Change

Efficiency
C = Standard S = Hi Efficiency

Refrigerant Control
3 = TXV – Non-Bleed

Coil Circuitry
H = Heat Pump
C = Cooling Only

Airflow Configuration
A = Upflow Only
U = Upflow / Downflow
H = Horizontal Only
C = Convertible – Upflow, Downflow, Left Airflow
M = Convertible – Upflow, Downflow, Left or Right Airflow

Minor Design Change

Unit Parts Identifier

Model Number Description

TWA	090	D	3	0R	A	A
1 2 3	4 5 6	7	8	9 10	11	12

All products are identified by a multiple-character model number that precisely identifies a particular type of unit. An explanation of the alphanumeric identification code is provided. Its use will enable the owner/operator, installing contractors, and service engineers to define the operation, specific components, and other options for any specific unit.

Note: *When ordering replacement parts or requesting service, be sure to refer to the specific model number, serial number, and DL number (if applicable) stamped on the unit nameplate.*

DIGITS 1 - 3: Product Type

TWA = Split System Heat Pump

DIGITS 4 - 6: Nominal Gross Cooling Capacity (MBh)

073 = 6 Tons
090 = 7½ Tons
120 = 10 Tons
180 = 15 Tons
240 = 20 Tons

DIGIT 7: Major Development Sequence

D = Single Circuit
E = Dual Circuit

DIGIT 8: Electrical Characteristics

3 = 208-230/60/3
4 = 460/60/3
W = 575/60/3
D = 380-415/50/3
K = 380/60/3

DIGITS 9 - 10: Factory Installed Options

0R = ReliaTel, no LCI Board
0T = ReliaTel, no LCI Board with Black Epoxy Coated Coil
0U = ReliaTel, with LCI Board
0W = ReliaTel, with LCI Board and Black Epoxy Coated Coil
HR = Hail Guard with ReliaTel, no LCI Board
HT = Hail Guard with ReliaTel, no LCI Board with Black Epoxy Coated Coil
HU = Hail Guard with ReliaTel, with LCI Board
HW = Hail Guard withReliaTel, with LCI Board and Black Epoxy Coated Coil

DIGITS 11: Minor Design Sequence

* = Current Design Sequence[1]

DIGITS 12: Service Digit

* = Current Design Sequence[1]

[1] * = sequential alpha character

TWE	240	E	3	00	*	*
1 2 3	4 5 6	7	8	9 10	11	12

All products are identified by a multiple-character model number that precisely identifies a particular type of unit. An explanation of the alphanumeric identification code is provided. Its use will enable the owner/operator, installing contractors, and service engineers to define the operation, specific components, and other options for any specific unit.

Note: *When ordering replacement parts or requesting service, be sure to refer to the specific model number, serial number, and DL number (if applicable) stamped on the unit nameplate.*

DIGITS 1 - 3: Product Type

TWE = Split System Heat Pump/Cooling Air Handler

DIGITS 4 - 6: Nominal Gross Cooling Capacity (MBh)

061 = 5 Tons
090 = 7½ Tons
120 = 10 Tons
150 = 12½ Tons
180 = 15 Tons
240 = 20 Tons

DIGIT 7: Major Development Sequence

D = Single Circuit
E = Dual Circuit

DIGIT 8: Electrical Characteristics

1 = 208-230/60/1	W = 575/60/3
3 = 208-230/60/3	D = 380-415/50/3
4 = 460/60/3	K = 380/60/3

DIGITS 9 - 10: Factory Installed Options

00 = Packed Stock

DIGITS 11: Minor Design Sequence

* = Current Design Sequence[1]

DIGITS 12: Service Digit

* = Current Design Sequence[1]

[1] * = sequential alpha character

General Data

Table 1. R-410A Combinations - 60 Hz

TWE061D	TWE061E	TWE090D	TWE090E	TWE120D	TWE120E	TWE150E	TWE180E	TWE240E
See Note	See Note	TWA073D TWA090D	See Note	TWA120D	See Note	(2) TWA073D[a]	(2) TWA090D[a]	(2) TWA120D[a]
							TWA180E	TWA240E

Note: See ComfortSite for more information on small outdoor unit combinations.

(a) Rated combination is not available at this time.

Table 2. General Data — 6 - 20 Ton Condensing Units— 60 Hz

	6 Tons	7½ Tons	10 Tons	15 Tons	20 Tons
	Single Compressor TWA073D	Single Compressor TWA090D	Single Compressor TWA120D	Dual Compressor TWA180E	Dual Compressor TWA240E
Cooling Performance Gross Cooling Capacity					
Matched Air Handler	80,000	93,000	123,000	185,000	255,000
Condensing Unit Only	74,000	86,000	114,000	176,000	264,000
ARI Net Cooling Capacity	78,000	90,000	120,000	180,000	246,000
Efficiency					
Matched Air Handler (EER)	11.0	11.0	11.0	10.6	10.0
Condensing Unit Only (EER)	12.5	12.2	12.7	12.2	12.2
System Integrated Part Load Value (IPLV)	N/A	N/A	N/A	12.6	10.6
System (IEER)	12.6	11.7	11.8	12.3	10.5
Condensing Unit Only (IPLV)	N/A	N/A	N/A	N/A	N/A
System kW/Condensing Unit kW	7.09/5.92	8.18/7.05	10.91/8.98	16.98/14.43	24.59/21.64
Heating Performance ARI Heating and Matched Air Handler					
High Temperature Capacity	69,000	82,000	105,000	174,000	236,000
System kW	6.13	7.28	9.32	15.93	21.61
COP	3.3	3.3	3.3	3.2	3.2
Low Temperature Capacity	40,000	49,000	75,000	109,000	134,000
System kW	5.10	6.24	9.98	13.89	19.63
COP	2.3	2.3	2.2	2.3	2.0
Compressor					
Type	Scroll	Scroll	Scroll	Scroll	Scroll
No./Tons	1/5.6	1/6.9	1/8.6	2/6.9	2/10.1
System Data					
No. Refrigerant Circuits	1	1	1	2	2
Suction Line (in.) OD	1 1/8	1 3/8	1 3/8	1 3/8	1 3/8
Liquid Line (in.) OD	1/2	5/8	1/2	1/2	5/8
Outdoor Coil - Type	Lanced	Lanced	Lanced	Lanced	Lanced
Tube Size (in.) OD	0.375	0.375	0.375	0.375	0.375
Face Area (sq ft)	19.24	19.24	29.02	52.6	52.6
Rows/FPI	2/18	2/18	2/18	2/18	2/18
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter (in.)	1/26	1/26	1/28	2/28	2/28
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1	Direct/1
CFM	6530	6530	9800	19500	19500
No. Motor/HP	1/0.5	1/0.5	1/1	2/1	2/1
Motor RPM	1100	1100	1100	1100	1100
Refrigerant Charge (Field Supplied) (lbs of R410A)	20.4	20.6	27.9	47.1	47.0
Shipping Dimensions (HxWxD)	43.54" x 43" x 36.5"	43.54" x 43" x 36.5"	49.48" x 53.25" x 41"	49.48" x 94.75" x 47"	49.48" x 94.75" x 47"

Knoxville Utilities Board
Electric Division

PILOT PROGRAM
GENERAL POWER TIME-OF-USE RATE
SCHEDULE GSA-TOU

General Power Time-Of-Use Rate Pilot Program Description

The purpose of the General Power Time-Of-Use Rate pilot program (GSA-TOU pilot) is to enable a phased implementation of Time-Of-Use rates for all KUB General Power customers with demand of 1,000 kW or less. The GSA -TOU pilot will provide participating customers experience with Time-Of-Use billing processes and the bill impacts of varying usage in response to Time-Of-Use rates. The duration of the GSA-TOU pilot shall be determined by KUB at its sole discretion.

General Power Time-Of-Use Pilot Program Availability

This rate shall be available for the firm power requirements (where a customer's contract demand is 1,000 kW or less) for electric service to non-residential customers. This rate shall be available to customers which have an advanced meter and have elected to participate in the GSA-TOU pilot. KUB reserves the right to limit participation.

Character of Service

Alternating current, single or three-phase, 60 hertz. Power shall be delivered at a service voltage available in the vicinity or agreed to by KUB.

Base Charges

1. If (a) the higher of (i) the customer's currently effective contract demand, if any, or (ii) its highest billing demand during the latest 12-month period is not more than 50 kW*:*

   Customer Charge: $32.00 per delivery point per month

   Demand Charge: $2.18 per kW of maximum billing demand per month

   Energy Charge:

Onpeak $0.22021 per kWh per month for all metered onpeak kWh

Offpeak $0.08711 per kWh per month for all metered offpeak kWh

2A. If the higher of (i) the customer's currently effective contract demand or (ii) its highest billing demand during the latest 12-month period is greater than 50 kW but not more than 100 kW*:*

Customer Charge: $104.00 per delivery point per month

Demand Charge: $4.94 per kW of maximum billing demand per month

Energy Charge:

Onpeak $0.23495 per kWh per month for all metered onpeak kWh

Offpeak $0.10185 per kWh per month for all metered offpeak kWh

2B. If the higher of (a) the customer's currently effective contract demand or (b) its highest billing demand during the latest 12-month period is greater than 100 kW but not more than 1,000 kW:

Customer Charge: $122.00 per delivery point per month

Demand Charge: $7.25 per kW of maximum billing demand per month

Energy Charge:

Onpeak $0.20900 per kWh per month for all metered onpeak kWh

Offpeak $0.07590 per kWh per month for all metered offpeak kWh

3. If the higher of (a) the customer's currently effective contract demand or (b) its highest billing demand during the latest 12-month period is greater than 1,000 kW:

   A. Customers meeting these requirements are not eligible to enter the GSA-TOU pilot program. The TDGSA and TDMSA (if qualified) rates are available as Time-Of-Use alternatives at this level of demand.

   B. If customer's demand rises above 1,000 kW while participating in the GSA-TOU pilot program, the customer will be removed from the pilot and billed under General Power Rate - Schedule GSA.

Adjustment

Charges under this rate schedule may be increased or decreased to reflect changes in purchased power costs as determined by any purchased power adjustment adopted by the Board.

Determination of Onpeak and Offpeak Hours

All hours stated in Eastern Prevailing time

Weekdays (Monday - Friday)

Onpeak	2 p.m. to 8 p.m. calendar months April through October
	5 a.m. to 11 a.m. calendar months November through March
Offpeak	All other hours

Weekends and Holidays*

All hours Offpeak

*Holidays include:
New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day

Determination of Demand

KUB shall meter the demands in kW of all customers served under the GSA-TOU

rate schedule. The Metered Demand for any month shall be the highest average during any 30-minute-consecutive period of the month of the load metered in kW. The Measured Demand for any month shall be the higher of (a) or (b) below:

The Billing Demand for any month shall be **the higher of** the following:

a) Metered Demand
b) 85 percent of the load in kVA
c) 30 percent of the higher of the currently effective contract demand or the highest billing demand established during the preceding 12 months.

Minimum Bill

The monthly bill under this rate schedule shall not be less than the sum of (a) the customer charge, (b) the demand charge, as adjusted, applied to the customer's billing demand, and (c) the energy charges, as adjusted, applied to the customer's energy takings.

KUB may require minimum bills higher than those stated above.

Contract Requirements

At its sole discretion, KUB may require contracts for service provided under this rate schedule and such contracts shall be for an initial term of at least one year. The customer shall contract for its maximum requirements, which shall not exceed the amount of power capable of being used by customer, and KUB shall not be obligated to supply power in greater amount at any time than the customer's currently effective contract demand. If the customer uses any power other than that supplied by KUB under this rate schedule, the contract may include other special provisions. The rate schedule in any power contract shall be subject to adjustment, modification, change, or replacement from time to time as approved by the Board**.**

Single – Point Delivery

The charges under this rate schedule are based upon the supply of service through a single delivery and metering point, and at a single voltage. If service is supplied to the same customer through more than one point of delivery or at different voltages, the supply of service at each delivery and metering point at each different voltage shall be separately metered and billed.

Rules and Regulations

Service is subject to Rules and Regulations of KUB.

Resolution No. 1441 . . . . Effective April 1,2024
Purchased Power Adjustment……... . . .……...Effective July 1, 2024

Rates above are inclusive of the Purchased Power Adjustment for the current month.

Treasure Map for Worship Facilities

Focus on uncovering opportunities to save. When you find something, make notes about location; tools, materials, or expertise needed; or further research required. Feel free to add to or modify this list to suit your own needs. Grab a clipboard and take this map along on your treasure hunt.

Facility Name_____ Floor_____ Date_____ Team _____

1 Facility Management and Benchmarking

- ❑ Managing costs starts with knowing your baseline use, from which to track savings. Start by printing the Data Collection Worksheet for "Worship Facility" at https://portfoliomanager.energystar.gov/pm/dataCollectionWorksheet. This Worksheet will list all you need to benchmark your property in the free, online Portfolio Manager® tool for tracking energy, water, and recycling/materials management.
  - ❑ Create your account at portfoliomanager.energystar.gov/pm/signup.
  - ❑ Learn more at www.energystar.gov/benchmark and find all Portfolio Manager training and tech support at www.energystar.gov/buildings/training.
- ❑ After you enter energy data, a 1 -100 ENERGY STAR® score will compare your property to other U.S. Worship Facilities. A 75 or higher score is eligible for ENERGY STAR certification.
  - ❑ You will also see your EUI or Energy Use Intensity which is approximately energy use/sq.ft. The national Worship Facilities median is 58.4 for Source EUI and 30.5 Site EUI. Many congregations can do much better than the national median EUI.
- ❑ Educate and encourage congregational staff and members to report leaks, turn off lights not in use, recycle and support your environmental stewardship efforts.
- ❑ Adopt a purchasing/procurement policy that specifies EPA's ENERGY STAR, WaterSense® and Safer Choice® labeled products when applicable.

NOTES:

TIP:

- Download the ENERGY STAR Action Workbook for Congregations for more strategies, action items, and ideas at www.energystar.gov/congregations.

ENERGY STAR® Portfolio Manager®

TIP:

- Celebrate your success and recognize contributors. Help your congregants achieve savings at home and at work with Bring Your Green to Work at https://www.energystar.gov/buildings/tools-and-resources/bring-your-green-work-interactive-cubicle.

Treasure Map for Worship Facilities

2 Lighting

- ❑ Consider purchasing an inexpensive light meter (under $30) to assess whether any areas are over-lit, compared to requirements or design levels.
- ❑ During daytime and evening hours, identify where lights have been left on in unoccupied spaces (including worship area, offices, restrooms, classrooms, conference rooms, kitchen, family room, hallways, storage, library, etc.).
- ❑ During the day, look for "day-burners" – that is, exterior and parking lot lighting that is on and should only be on at night, and which has a failed or dirty light sensor.
- ❑ If upgrading your exterior lighting, consider shielded fixtures to direct the light where needed and reduce light pollution.
- ❑ Identify and assess opportunities to use automated lighting controls:
  - ❑ Occupancy/motion sensors for low-traffic areas.
  - ❑ Timers or daylight sensors to turn off exterior and parking lot lights during the day.
  - ❑ Dimming controls in locations where natural lighting (e.g., near windows, skylights, light tubes) can temporarily supplement or replace fixture lighting.
- ❑ Confirm that lighting controls are installed to "see" what they must and are operating as intended.
- ❑ Assess cleanliness of lamps/fixtures (dust, bugs, any debris) and the need to institute a regular cleaning plan for maximum light output.
- ❑ Identify where reflectors can be practically added to amplify existing lighting.
- ❑ Consider opportunities for de-lamping, and de-energize and/or remove ballasts that are not in use.
- ❑ Evaluate the opportunity to upgrade to more energy-efficient lighting options:
  - ❑ Replace T12 fluorescents and obsolete magnetic ballasts, ideally with tubular LEDs (TLEDs). Retain existing T8s or T5s with electronic ballasts through their useful life.
  - ❑ Upgrade incandescent and CFL bulbs to LED (especially for task lighting or specialty/decorative applications).
  - ❑ Replace incandescent or CFL exit signs with an LED model, or LED retrofit kit.
  - ❑ Recycle/dispose of all fluorescent tubes/CFLS and magnetic ballasts properly at your lighting or building supply store.
- ❑ Review ENERGY STAR product information, calculators and find local retailers and rebates at www.energystar.gov/products and find lighting, fans, and more lighting facts at www.energystar.gov/lighting.

NOTES:

TIP

- Consider an "all utility audit" to look for billing errors and proper rate classification for electricity, natural gas, heating oil, water/sewer, and telecommunications. The auditing firm is paid a pre-agreed percentage only after your refund is complete. If there is no refund due, you have confirmed you are not overpaying.

Treasure Map for Worship Facilities

3 Building Envelope

- ❑ Inspect doors and windows to identify gaps, cracks, or other openings that can be weather-stripped, caulked, filled with foam insulation, or otherwise closed. This includes doors, windows, HVAC system joints, vents, and ducts. The idea is to be sure any indoor/outdoor air- exchange is not accidental but is deliberate ventilation. Consider using a "smoke pencil" from the hardware store to detect leaks.
- ❑ If new windows must be purchased, consider the incremental costs and savings of high-efficiency windows – which will cost more and save more.
- ❑ Generally, keep doors closed to the outside and to any unheated or uncooled areas.
- ❑ Consider installation of solar film, awnings, vegetation, or insulated curtains for east and west windows to block summer heat gain and allow solar gain in the winter through south-facing windows.
- ❑ Consider strategic landscaping to save money on water bills and space cooling in the summer and heating in the winter. See tips and information at www.epa.gov/watersense/outdoors.
- ❑ Inspect attic insulation levels and identify inadequacies to be addressed. If a major remodel opens walls, consider adding insulation.
- ❑ Check on the roof: take photographs and notes on any damage, cracked shingles or other surface aging. Note if the roof is still under warranty. In the attic, look for signs of leaks, membrane cracks/holes, or damaged insulation.
    - ❑ Depending on "street view" aesthetics and other issues, consider that white, reflective paint can significantly reduce heat gain and even extend the life of some roofing.
- ❑ Congregations can use much of the information on "residential" products and savings resources at www.energystar.gov/products/building_products for facility.

NOTES:

TIP:

- Use your Zip Code in the rebate finders for ENERGY STAR® and WaterSense® labeled products to check on utility or retail vendor cash rebates before you buy any products. Utilities may have pre-purchase application requirements at https://www.energystar.gov/rebate-finder.

Treasure Map for Worship Facilities

4 Water: Interior Hot and Cold

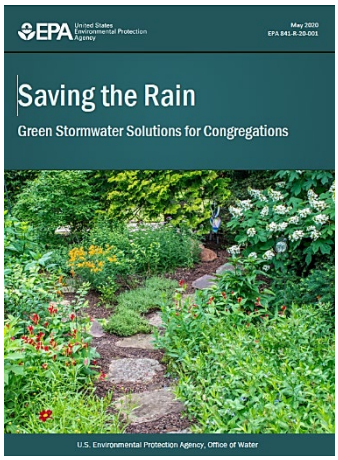
- ❑ Survey water use to identify major uses; find and fix any leaks— especially hot water leaks.
- ❑ Typically, set temperature 110 – 120 degrees or per local code to prevent scalds and to save energy and money.
- ❑ Consider "tankless" heaters (on-demand) for low-use areas.
- ❑ Insulate 7-year or older water heaters and the first 3' of heated water "out" pipe.
- ❑ Check out ENERGY STAR water heating product information and calculators; find local retailers and rebates at www.energystar.gov/products/water_heaters
- ❑ See EPA's WaterSense® program for water saving labeled products and rebates, for indoor water efficiency tips, and best practices at www.epa.gov/watersense.

5 Water: Exterior Savings

- ❑ Survey water use to identify major uses; find and fix any leaks—especially with irrigation.
- ❑ Water-efficient irrigation products and practices—such as native plantings, water budgeting, seasonal scheduling, or WaterSense labeled weather-based irrigation controllers—could cut the amount of water lost outside by as much as 50 percent.
- ❑ Read and download EPA's Saving the Rain: Green Stormwater Solutions for Congregations at www.epa.gov/nps/saving-rain-green-stormwater-solutions-congregations.
- ❑ See EPA's WaterSense® program for water saving labeled products and rebates, for outdoor water efficiency tips, and best practices at www.epa.gov/watersense.

NOTES:

EPA WaterSense



Treasure Map for Worship Facilities

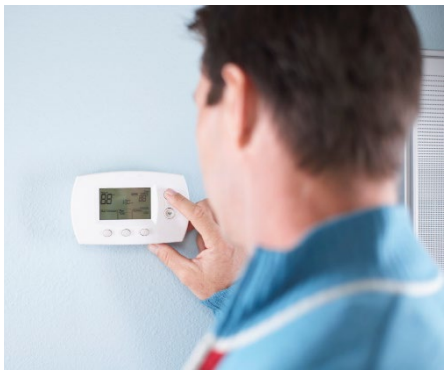
6 HVAC

- ❑ Ensure that HVAC system components are being maintained regularly. If not by qualified staff, then consider an annual maintenance contract to "tune-up" HVAC, both pre-heating and pre-cooling seasons. Qualified staff or a professional should implement the full HVAC maintenance list. Remember to:
  - ❑ Replace filters on a regular schedule; monthly during heating/ cooling season.
  - ❑ Ensure free airflow to and from supply/return registers (clear furniture, books, papers, etc.).
  - ❑ Ensure that electronics and heat sources are located away from thermostats.
  - ❑ Use window shades/curtains to block excess heat and educate staff about when to use them.
  - ❑ Identify and prevent any instances of simultaneous heating and cooling. Ensure that individual space heaters are not being used when the HVAC system is heating or cooling.
- ❑ Ceiling fans and personal fans can help with energy savings by making rooms feel cooler during summer months. A smart thermostat can be programmed to pre-cool or pre-heat spaces for comfort an hour prior to occupation rather than maintaining the comfort level when not occupied.
  - ❑ Depending on outside temperature, programming can be set to turn off the HVAC 15-30 minutes before space use ends.
- ❑ Read about "smart thermostats" and implementing a temperature setback policy for heating/cooling when the building is unoccupied (including any special considerations for summer/winter months).
- ❑ Have a plan for HVAC failure on the hottest/coldest day of the year. Know the anticipated useful life of your current system, have your contractor "right-size" the new HVAC system to account for your new level of efficiency and reduced demand so you do not pay more for a larger system than needed.
- ❑ An Energy Management System (EMS) can be programmed and potentially remotely-control the HVAC and other major equipment.
- ❑ See ENERGY STAR HVAC products and resources at www.energystar.gov/products/heating_cooling and evaluate the savings for higher SEER/IEER Rated equipment for new installations and retrofits.

NOTES:

TIP:

- Consider "load shedding" to avoid demand charges during your utility system's "peak demand" time of day. This means understanding your utility's time of day rates and avoiding the use of as much of your equipment as possible during this time. Ask your utility about programs and financial incentives for customers to avoid contributing to peak demand.



Treasure Map for Worship Facilities

7 Office Equipment/Plug Load

- ❑ Identify any new office equipment that will be needed soon. Start looking for ENERGY STAR certified equipment options, use the online savings calculators and look for available rebates.
- ❑ Identify any equipment left on overnight (including equipment left in sleep/idle or screen saver mode), that should be turned off when not in use.
- ❑ Ensure that power management settings are activated on office equipment such as computers, monitors, printers, and copiers.
- ❑ Identify where power strips can be used for easy disconnect from power source. Consider the use of advanced power strips.
- ❑ Be sure staff know to unplug rechargeable devices once charged.
- ❑ Be sure vending machines are turned off or put in sleep mode at the end of the day with a timer. Consider installing motion/occupancy- based vending machine controls.
- ❑ Review ENERGY STAR office products and resources at www.energystar.gov/products/office_equipment; see ENERGY STAR vending machines at www.energystar.gov/products/other/vending_machines and water coolers at www.energystar.gov/products/other/water_coolers.

NOTES:

Treasure Map for Worship Facilities

8 Kitchen/Food Service Equipment

- ❑ If the congregation anticipates purchasing new kitchen equipment, review the ENERGY STAR models, calculate savings, and find rebates in advance.
- ❑ Review the information for Commercial Food Service Equipment at https://www.energystar.gov/products/commercial_food_service_equipment and download the ENERGY STAR Guide for Cafés, Restaurants, and Commercial Kitchens at https://www.energystar.gov/sites/default/files/asset/document/ES%20Restaurant%20Guide%202017-2018%20v16.pdf.
- ❑ Many congregations have residential type refrigerators, which should be replaced if more than 10 years old. Commercial refrigerators/freezers are much larger and typically silver/stainless steel. Dispose of old refrigerators properly. See the EPA's Responsible Appliance Disposal Program at www.epa.gov/rad.
- ❑ If possible, be sure heating equipment is not near cooling equipment.
- ❑ Identify worn and/or leaky door seals/gaskets on refrigerators and freezers. Close the door on a dollar bill or piece of paper, and if it is easily pulled out, replace the gasket. Many websites have "DIY" videos and instructions. Some replacement gaskets claim to be "universal", but it is best to purchase using the appliance brand and model number. Regularly clean the gasket with soapy water to keep it free of debris.
- ❑ Check that refrigerator coils are clean and free of obstructions.
- ❑ Verify oven thermostat accuracy and have recalibrated if necessary.
- ❑ Establish and post operating procedures for cooking/baking equipment (preheating only when necessary, turning down/off equipment when not in use).
- ❑ Ensure that range hoods and exhaust fans are only running when the range is being used, or until excessive heat is removed.
- ❑ Ensure that unused appliances are unplugged or on a power strip that is shut off.
- ❑ Determine if low-flow pre-rinse spray valves can be installed.

NOTES:

Most Efficient 2022
www.energystar.gov

Treasure Map for Worship Facilities

9 Waste Reduction and Recycling

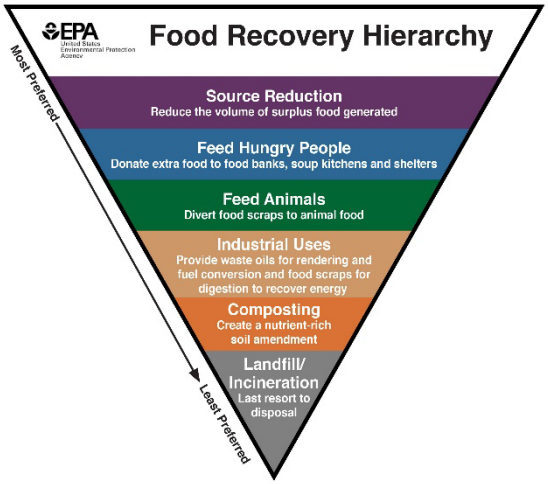
- ❑ Why Is Reducing Waste Important? It can save you money, it highlights your environmental commitment to your congregants, and it reduces your environmental impact. Tracking the waste is an important step in reducing it.
- ❑ To identify the types of waste you generate in your building, complete the following Waste Generation Checklist. **Put an X or N/A where suitable for each category.*

Waste/Material	Disposed	Donated/Reused	Recycled	Composted
Appliances				
Batteries				
Beverage Containers (aluminum, glass, plastic)				
Building Materials – Carpet/Carpet Padding				
Building Materials – Mixed/Other				
Building Materials – Steel				
Building Materials – Wood				
Cardboard/Corrugated Materials				
Compostable – Mixed / Other				
Electronics				
Fats/Oils/ Grease				
Food/Food Scraps				
Furniture				
Glass				
Grass/Yard Trimmings				
Lamps/Light Bulbs				
Mixed Recyclables				
Office Supplies				
Pallets				
Paper – Books/Textbooks				
Paper – Copy paper				
Paper – Mixed				
Plastics – Mixed				
Plastics – Wrap/Film				
Regulated Medical Waste				
Textiles/Clothing				
Trash				
Other *				
Count of materials within each type				

Treasure Map for Worship Facilities

Here are some ways to cut down on waste:

- ❑ Learn about the EPA's Food Recovery Challenge to reduce waste at: https://www.epa.gov/sustainable-management-food/learn-about-food-recovery-challenge-frc.
- ❑ Donations: For those items you find yourself disposing of in the trash, try to find alternate methods to divert those materials out of landfill, like:
  - ❑ Implementing a donation system.
  - ❑ Get clothing and shoe bins and place them in your parking lot.
  - ❑ Bring giveaways (books, clothes, shoes, household items) to shelters, university campus and public libraries.
- ❑ Recycling:
  - ❑ Contact your local waste hauler to see if they provide recycling pick up services.
  - ❑ Find a local drop-off center in your area.
  - ❑ Set recycling stations where items can be sorted to avoid contamination in your recycling bins. Contamination includes, but is not limited to, food scraps, oil stains, liquids, film plastics, straws, plastic cutlery, napkins, receipts, yard waste, etc.
- ❑ Compost: If you make meals at your facility and generate organic waste, consider ways to divert that waste out of landfill, such as start your own compost program in your garden, if you have one. If not, contact your local compost processor or farmers to see if they would offer a pick-up or drop-off service for your compost.



Treasure Map for Worship Facilities

WELCA report to Messiah Council
August 16, 2024

August Luncheon/General Meeting, 14 in attendance. Minutes available on request.

Lutheran World Relief collection yields 25 quilts and 32 Personal Care Kits for a total weight of
147 pounds. Thanks to the quilters and the congregation for donations and for the Blessing by Pastor Mark on August 4; these will be delivered to the collection point in Greeneville, TN on August 23 and from there will go to LWR ware house in Maryland.

Southeastern WELCA Convention to be held September 20-22 in Huntsville, Alabama.
Debbie Hampstead will be delegate; Debbie also serves as Recorder for our Cluster.

WELCA Sunday will be observed September 22. Pastor Laura will preside. Coffee Hour will be sponsored by the women and a freewill Love Offering will be collected. It is designated for
our companion synod, Milagro and for scholarships for young women.

Holiday Market is set for November 2 with Michele Wilson serving as coordinator. Proceeds from the event will be designated to the YWCA.

Current balance is approximately $779.00. We plan to fund the convention registration for Debbie at $225.00 and pay Pastor Laura for WELCA Sunday.

Contact me if you have any questions.

Submitted by Anne Tinker, President of WELCA

Parish Nurse Activity Report-July-2024-Messiah Lutheran Church									Mary Sophia Hawks, BSN, RN, GRN, Faith Community Nurse				
Contacts	**January**	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**2024**
Calls/Texts	90	70	87	125	81	68	64						**585**
Office Visits	2	2	3	2	4	6	3						**22**
Home Visits	7	3	10	4	5	7	4						**40**
Hospital Visits	9	3	1	2	5	13							**33**
Facility Visits	2	5	9	6	4	1	3						**30**
MD Visits/Transport	7	4	4	11	8	2	3						**39**
Consults/referrals	3	2	6	4	4	4	5						**28**
Total	**120**	**89**	**120**	**154**	**111**	**101**	**82**	**0**	**0**	**0**	**0**	**0**	**777**
Activities	4	3	4	6	1	4	3						**25**
Meetings		5	5	5	5	6	5						**31**
Special Projects	13	11	28		13	14	5						**84**
Training					10								**10**
Total	**17**	**19**	**37**	**11**	**29**	**24**	**13**	**0**	**0**	**0**	**0**	**0**	**150**

Activities				**Special Projects**									
OWL's (1)				Parish Nurse News/OWLS/Prayer Concerns (5)									
Monthly Report Preparation (1)													
Coordination of OWLs meals (1)													
Delivery of OWLS meals (0)													
											Hours		
											Work	112	
											Sick Time	24	
Meetings				**Training**							Vacation	40	
Congregational Care (0)											Holiday	8	
Badenhop Steering Committee (1) Zoom													
Meetings with Pastor Mark (4)											TOTAL	184	hours
											Mileage	129	miles

Report to Council

July 14, 2024 to August 11, 2024

Mary Phillips, Director of Music

We had special music in the services as follows:

July 14 – The bell choir played the prelude.

July 21 – The choir sang for the service.

July 28 – The bell choir rehearsed following the 9:30 service.

August 4 – The bell choir played the prelude. The choir had a rehearsal after the service.

August 11 – The choir sang for the service.

Choir Practice and Bell Rehearsals:

We are following our summer choir schedule, with rehearsals after church on Sunday mornings periodically.

The bells have rehearsed after church periodically this summer in order to play for worship.

Other Activities:

New Ensemble forming: Flute Choir – we will start rehearsals on September 1.

Ongoing – updating database of hymns, anthems, instrumental music and organ music,

Working on music for vocal duets, flute choir, fall anthems, Reformation, Advent and Christmas.

I am serving as Dean of the Knoxville Chapter of the American Guild of Organists this year. We hold our board meetings at Messiah and will host the September meeting here as well.

Met with Pastor Mark and Jane Mason on July 17 for fall service planning.

Chose hymns for this fall.

Met with Mike Driskill and Michele Wilson to review the acousticians' reports from 2001 and 1996. We are looking into moving some microphones and doing some minor construction to improve the acoustics. We are also considering a consultant to review our sound system. These projects will help the choir members to hear each other as well as aid the congregation in hearing the choir. We are also trying to improve our online streaming, since a number of our members are unable to attend in person and are watching online. The Badenhop Committee has discussed helping with funding.

I have been working with some of our instrumentalists for prelude music and addition to choir anthems. I have been working with some members on vocal duets as well.

I have hired a bass scholarship student, Joshua Sudler, to supplement the choir. He is a high school junior at Webb School of Knoxville and came highly recommended. He will join us on September 12. This is funded via the Creekmore Fund.

Plans are underway for the next outdoor service on September 15.

The cantor schedule is being completed for fall.

Pastor's Report to the Council *August 18, 2024*

The Call Committee will meet with Pastor Jeremy Hemphill next Sunday. He is an Assistant to Bishop Strickland and will be guiding them through the Call process. Pastor Hemphill will preach for us that day.

As we approach a new school year we are looking at the needs for confirmation ministry. My colleagues at the other Lutheran churches in the city (Peace and St. John's) are interested in doing that cooperatively.

We are scheduling another Outdoor service for September 15. We are also planning for a Blessing of the Animals on Saturday, October 5.

Plans for Reformation Sunday, All Saints Sunday, and Advent and Christmas are well underway. Jack Wilder will supply for me on Sunday, December 29, the third of my four weeks of vacation. I will be traveling to Colorado Springs, Colorado to celebrate New Years with my son and his family.

The congregational Civil Rights pilgrimage to Birmingham and Montgomery, Alabama, is scheduled for September 19-21. We plan to visit the Civil Rights Institute in Birmingham and the Legacy Museum the National Memorial for Peace and Justice, the Civil Rights Memorial, and the Rosa Parks Museum in Montgomery.

Respectfully submitted,
~Pastor Mark Cerniglia, Interim Pastor