

A REGULAR MEETING

Of The

TRAVERSE CITY LIGHT AND POWER BOARD

Will Be Held On

Tuesday, March 13, 2018

At

5:15 p.m.

In The

COMMISSION CHAMBERS
(2nd floor, Governmental Center)
400 Boardman Avenue

Traverse City Light and Power will provide necessary reasonable auxiliary aids and services, such as signers for the hearing impaired and audio tapes of printed materials being considered at the meeting, to individuals with disabilities at the meeting/hearing upon notice to Traverse City Light and Power. Individuals with disabilities requiring auxiliary aids or services should contact the Light and Power Department by writing or calling the following.

Jennifer St. Amour
Administrative Assistant
1131 Hastings Street
Traverse City, MI 49686
(231) 932-4543

Traverse City Light and Power
1131 Hastings Street
Traverse City, MI 49686
(231) 922-4940

Posting Date: 3-9-18
3:00 p.m.

AGENDA

Pledge of Allegiance

1. Roll Call

2. Disclosure of Recusal

3. Consent Calendar

The purpose of the consent calendar is to expedite business by grouping non-controversial items together to be dealt with by one Board motion without discussion. Any member of the Board, staff or the public may ask that any item on the consent calendar be removed therefrom and placed elsewhere on the agenda for full discussion. Such requests will be automatically respected. If an item is not removed from the consent calendar, the action noted in parentheses on the agenda is approved by a single Board action adopting the consent calendar.

- a. Approval of Agenda.
- b. Consideration of approving minutes of the Regular Meeting of February 13, 2018. (Approval Recommended (p. 4))
- c. Consideration of approving an updated Organizational Chart. (Approval Recommended) (Schroeder) (p. 9)
- d. Consideration of approving a purchase order for underground cable for the Substation Circuit Exits Project. (Dixon) (p. 11)
- e. Consideration of approving an application for waiver and plan regarding Traverse City Light & Power's pension system to the State of Michigan Department of Treasury. (Schroeder/Myers-Beman) (p. 12)

4. Unfinished Business

None.

5. New Business

- a. Presentation on Voluntary Green Rate and consideration of a public hearing. (Arends/Myers-Beman) (p. 19)
- b. Consideration of the Spartan Renewable Energy Purchase Power Proposal. (Arends) (p. 24)
- c. Consideration of approving the PC-32 Project Authorization Request. (Dixon) (p. 39)
- d. Consideration of approving the Critical and Large Customer Project #2 Authorization Request. (Dixon) (p. 42)

- e. Consideration of approving a purchase order for the underground cable for the Critical and Large Customer Project #2. (Dixon) (p. 45)

6. Reports and Communications

- a. From Legal Counsel.
- b. From Staff.
 - 1. Presentation of Traverse City Central High School Solar Project. (p. 46)
 - 2. Presentation of the Electric Fund Budget. (Arends/Myers-Beman) (p. 57)
 - 3. Report on Belle River Project Debt. Service. (Myers-Beman) (p. 71)
 - 4. Report on Automated Metering Infrastructure Project and Fiber to the Premise (FTTP). (Menhart) (p. 73)
- c. From Board.

7. Public Comment

/js

**TRAVERSE CITY
LIGHT AND POWER BOARD**

Minutes of Regular Meeting
Held at 5:15 p.m., Commission Chambers, Governmental Center
Tuesday, February 13, 2018

Board Members -

Present: Ross Hammersley, Pat McGuire, Jeff Palisin, Amy Shamroe, John Taylor,
Tim Werner

Absent: Jan Geht

Ex Officio Member -

Present: Marty Colburn, City Manager

Others: Tim Arends, W. Peter Doren, Karla Myers-Beman, Scott Menhart, Daren
Dixon, Kelli Schroeder, Tony Chartrand, Jacob Hardy, Jennifer St.
Amour.

The meeting was called to order at 5:15 p.m. by Vice -Chairman Palisin.

Item 2 on the Agenda being Disclosure of Recusal

Item 3 on the Agenda being Consent Calendar

Moved by McGuire, seconded by Shamroe, that the following actions, as recommended on the
Consent Calendar portion of the Agenda, be approved:

- a. Approval of the Agenda.
- b. Approve Minutes of the Regular Meeting and the Study Session of January 23, 2018.
- c. Consideration of MECA Safety Training contract renewal.
- d. Authorizing a Construction Agreement with Newkirk Electric Associates, Inc. for the
Barlow Substation Transformer Replacement Project.
- e. Approving an agreement with Energis Power Systems for substation transformer
maintenance.

CARRIED unanimously. (Geht absent)

Items Removed from the Consent Calendar

None.

Item 4 on the Agenda being Unfinished Business

- a. Consideration of the Heritage Option regarding additional solar.

The following individuals addressed the Board:

Tim Arends, Executive Director
NO ACTION TAKEN.

Item 5 on the Agenda being New Business

- a. Consideration of the Fiber to the Premise Project Authorization Request and authorizing staff to seek competitive bids.

The following individuals addressed the Board:

Tim Arends, Executive Director
Scott Menhart, Manager of Telecom and Technology

Moved by Shamroe, seconded by Hammersley, that the Board approves the Project Authorization Request for Fiber to the Premise Project; and further authorizes staff to solicit proposals by method of an RFP for the Boards future consideration of approval.

The following individuals from the Public addressed the Board:

Russell Schindler, 1123 W. Front Street, ratepayer
Dan Mastromonaco, 9640 SW Bayshore Drive, non-ratepayer
Erin Schurg, 518 Wester Street, ratepayer
Russ Ryba, 534 Rose Street, ratepayer
Jean Derenzy, Interim County Administrator, non-ratepayer
Kent Wood, Chamber of Commerce, 202 E. Grandview Parkway, ratepayer
Barb Willing, Grant Street
Eric Bravick, 1523 Bee Court, non-ratepayer
Jim Selby, President, Aspen Wireless Technologies

Roll Call:

Yes – Hammersley, Shamroe, Taylor, Werner, Palisin

No - McGuire

CARRIED. (Geht absent)

- b. Consideration of Fiber to the Premise Business Plan.

The following individuals addressed the Board:

Tim Arends, Executive Director
Scott Menhart, Manager of Telecom and Technology

NO ACTION TAKEN.

- c. Consideration of the Substation Circuit Exits Project Authorization Request and authorizing staff to seek competitive bids.

The following individuals addressed the Board:

Daren Dixon, Operations Manager
Tim Arends, Executive Director

Moved by Werner, seconded by Hammersley, that the Board approve as presented the Substation Circuit Exits Replacement Project and directs staff to solicit construction bids and material quotes for the Board's consideration of approval after design completion.

CARRIED unanimously. (Geht absent)

- d. Consideration of authorizing a consultant agreement with GRP Engineering, Inc. for engineering and construction management services for the Substation Circuit Exits Project.

The following individuals addressed the Board:

Daren Dixon, Operations Manager

Moved by McGuire, seconded by Hammersley, that the Board authorizes the Chairman and Secretary to enter into an agreement with GRP Engineering, Inc. for professional engineering services at a lump sum fee of \$31,000, and for contract/project administration at an hourly fee with a not to exceed total of \$21,000 relating to the Substation Circuit Exit Replacement Project. Agreement subject to approval as to substance by the Executive Director and as to form by General Counsel.

CARRIED unanimously. (Geht absent)

- e. Consideration of the Parsons Switching Station Project Authorization Request and authorizing staff to seek competitive bids.

The following individuals addressed the Board:

Daren Dixon, Operations Manager
Tony Chartrand, System Engineer

Moved by Shamroe, seconded by Hammersley, that the Board approve as presented the Parsons Switching Station Project and directs staff to solicit construction bids and material quotes for the Board's consideration of approval after design completion.

CARRIED unanimously. (Geht absent)

- f. Consideration of authorizing a Consultant Agreement with GRP Engineering, Inc. for engineering, construction management, and testing services for the Parsons Switching Station Project.

The following individuals addressed the Board:

Daren Dixon, Operations Manager
Tim Arends, Executive Director

Moved by Hammersley, seconded by Shamroe, that the Board authorizes the Chairman and Secretary to enter into an agreement with GRP Engineering, Inc. for professional engineering services and project management at a lump sum fee of \$104,000, and for contract administration, start-up and testing at an hourly fee with a not to exceed total of \$84,000 relating to the Parsons

Switching Station Project. Agreement subject to approval as to substance by the Executive Director and as to form by General Counsel.

CARRIED unanimously. (Geht absent)

Item 6 on the Agenda being Reports and Communications

a. From Legal Counsel.

W. Peter Doren reported effective January 1, 2018, Sondee, Racine & Doren PLC increased their municipal hourly rate from \$150.00 per hour to \$170.00 per hour.

W. Peter Doren announced that he and John Racine have become “of Counsel.” Peter and John will continue to practice law full-time, however, the partners of Sondee, Racine & Doren PLC are Jeff Jocks, Karrie Zeits, and Mike Borden. John MacNeal has retired.

b. From Staff.

1. Presentation of 2018-19 Fiber Fund Budget.

The following individuals addressed the Board:

Karla Myers-Beman, Controller

2. Annual Report.

The following individuals addressed the Board:

Karla Myers-Beman, Controller

3. Quarterly Financial Statements.

The following individuals addressed the Board:

Karla Myers-Beman, Controller

c. From Board

1. Consideration of calling a Special Meeting on February 27, 2018 to consider the Spartan Renewable Energy offer.

Tim Arends, Executive Director, indicated that date would not work and the next TCL&P Board Meeting would be held on March 13, 2018.

Item 7 on the Agenda being Public Comment

a. General

The following individuals from the Public addressed the Board:

Dave Petrov, 9988 Riley Rd., non-ratepayer

There being no objection, Vice-Chairman Palisin declared the meeting adjourned at 7:15 p.m.

Tim Arends, Secretary
LIGHT AND POWER BOARD

DRAFT



**TRAVERSE CITY
LIGHT & POWER**

To: Light & Power Board
From: Kelli Schroeder, Manager of HR & Communications
Date: March 2, 2018
Subject: Organizational Chart

Included in your packet is a revised Organizational Chart with the following recommended changes:

- Employees of the Combustion Turbine (Power Production) will no longer report to Rod Solak, Line Superintendent. They will once again report to the Operations Manager.
- The Scheduling & Operations Coordinator will also change reporting to the Operations Manager and no longer report to the Line Superintendent.

These changes will not affect current staffing levels.

This is being brought before you per the language in the Charter that requires amendments to the organizational structure be approved by the Board.

This item is appearing on the Consent Calendar as it is deemed by staff to be a non-controversial item. Approval of the item on the Consent Calendar means you agree with staff's recommendation.

If any member of the Board or the public wishes to discuss this matter, other than clarifying questions, the item should be placed on the "Items Removed from the Consent Calendar" portion of the agenda for full discussion.

If after Board discussion you agree with staff's recommendation, the following motion would be appropriate:

MOVED BY _____, SECONDED BY _____,

**THAT THE BOARD APPROVES THE CHANGES TO THE ORGANIZATIONAL CHART,
AS PRESENTED.**



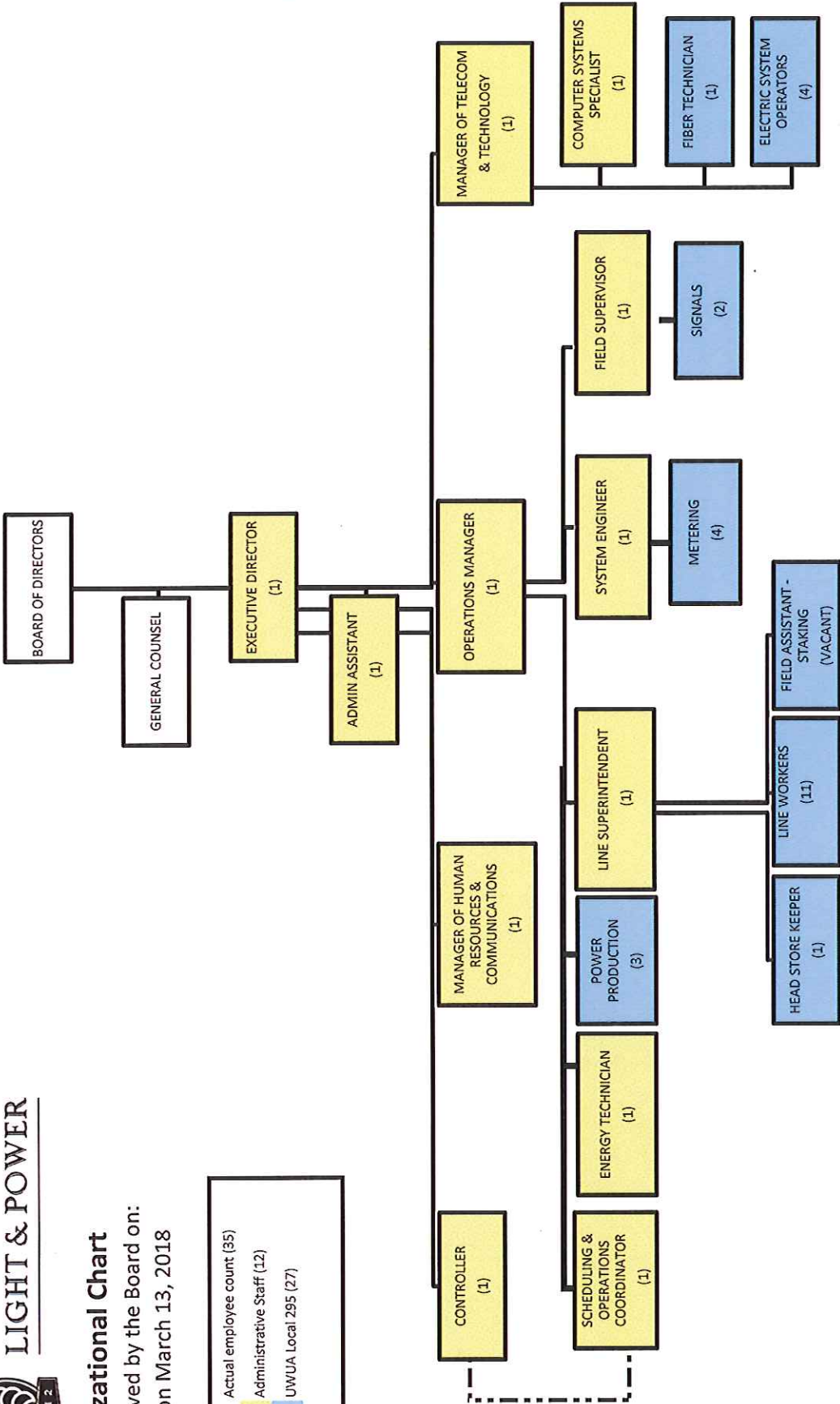
**TRAVERSE CITY
LIGHT & POWER**

Organizational Chart

As approved by the Board on:
Revised on March 13, 2018

Legend:

- Actual employee count (35)
- Administrative Staff (12)
- UWUA Local 295 (27)





**TRAVERSE CITY
LIGHT & POWER**

To: Light & Power Board
From: Daren Dixon, Manager of Operations
Date: March 7, 2018
Subject: Substation Underground Exit Cable Purchase

At the February 13, 2018 Regular Board Meeting, staff presented and the Board approved the Substation Exits Replacement 2018 Project Authorization Request (Project). This Project is being undertaken to replace aging cable and bring it up to full carrying capacity as identified in the Distribution System Study completed by GRP Engineering, Inc. (GRP) in 2016. GRP issued a Request for Proposals on Traverse City Light & Power's (TCL&P) behalf for the substation underground exit cable and bids were received as follows:

<u>Vendor</u>	<u>Price</u>
Anixter	\$ 131,620.00
Irby	\$ 130,248.00
Power Line Supply	\$ 129,276.00
RESCO	\$ 176,664.00
WESCO	\$ 130,118.40

After review by GRP and TCL&P staff, it is recommended TCL&P accept the low bid from Power Line Supply and issue a purchase order in the amount of \$129,276. The bid tabulation and recommendation letter from GRP is included in the bid packet. Total cost including the cable used from stock is \$5,000 above approved project costs.

This item is on the Consent Calendar as it is deemed non-controversial. Approval of this item on the Consent Calendar means you agree with staff's recommendation.

If any member of the Board or the public wishes to discuss this matter other than clarifying questions, it should be placed on the "Items Removed from the Consent Calendar" portion of the agenda for full discussion. If after Board discussion you agree with staff's recommendation, the following motion is recommended:

MOVED BY _____, SECONDED BY _____,

THAT THE BOARD AUTHORIZES THE EXECUTIVE DIRECTOR TO ISSUE A PURCHASE ORDER TO POWER LINE SUPPLY IN THE AMOUNT OF \$129,276 FOR SUBSTATION UNDERGROUND EXIT CABLE, PLUS OR MINUS DEPENDENT ON COMMODITY PRICES DAY OF SHIPMENT, TO BE USED FOR THE SUBSTATION EXITS REPLACEMENT 2018 PROJECT.



**TRAVERSE CITY
LIGHT & POWER**

To: Light & Power Board
From: Karla Myers-Beman, Controller and Kelli Schroeder, Manager of HR & Communications
Date: March 7, 2018
Subject: Approval of Application for Waiver and Plan – Retirement System

The State of Michigan enacted into legislation Public Act 202 of 2017, to protect local government retirement and benefits; to provide the powers and duties of certain state and local agencies and officials; and to create a municipal stability board.

Within the act, it requires local agencies to submit Form No. 5572 (an evaluation report of the entity's pension system or retiree health system) to the Michigan Department of Treasury, which is enclosed in your board packet for review. If the entity does not meet certain funding thresholds on their pension and/or retiree health systems, further action of applying for waiver is required.

The law states an entity can apply for a waiver of the underfunded status if the governing body can approve a plan demonstrating the underfunded status is being addressed, and the governing body approves the waiver application. This waiver is required when a pension system is less than 60% funded, according to the most recent annual report. The funded ratio reported in the utility's June 30, 2017 financial statements showed the funding ratio was 56%, which is lower than the 60% threshold.

Included within your board packet is the waiver form describing the system design changes and the additional funding implemented through the ten-year amortization schedule (in the current fiscal year we are at year nine). Additional documents will be submitted showing support of increased funding levels through the past two years' actuarial valuations, internally developed projections, and documentation of the accelerated funding. (These are not included in your board packet due to length of the documents.) Staff believes this information will be sufficient in showing that the utility is addressing the pension system's underfunded status.

It is staff's recommendation to approve the application for waiver and plan to be submitted to the State of Michigan Department of Treasury. This item is on the Consent Calendar as it is deemed non-controversial. Approval of this item on the Consent Calendar means you agree with staff's recommendation.

(MOTION ON NEXT PAGE)

FOR THE LIGHT & POWER BOARD MEETING OF MARCH 13, 2018

If any member of the Board or the public wishes to discuss this matter, other than clarifying questions, it should be placed on the "Items Removed from the Consent Calendar" portion of the agenda for full discussion. If after Board discussion you agree with staff's recommendation the following motion would be appropriate:

MOVED BY _____, SECONDED BY _____,

**THAT THE BOARD APPROVES THE APPLICATION FOR WAIVER AND PLAN TO
BE SUBMITTED TO THE STATE OF MICHIGAN DEPARTMENT OF TREASURY.**

Public Act 202 of 2017 Pension Report

Enter Local Unit Name	Traverse City Light and Power
Enter Six-Digit Municode	287516
Fiscal Year (four-digit year only, e.g. 2017)	2017 Revised
Contact Name (Chief Financial Officer)	William Twietmeyer
Title if not CFO	Treasurer/Finance Director
Contact Email Address	wtvietme@traversecitymi.gov
Contact Telephone Number	231-922-4436

Instructions/Questions: For a list of detailed instructions on how to complete and submit this form, visit michigan.gov/LocalRetirementReporting. For questions, please email LocalRetirementReporting@michigan.gov. Return this original Excel file. Do not submit a scanned image or PDF.

Line	Description	Source of Data	Plan 1	Plan 2	Plan 3	Plan 4	Plan 5
1	Provide the name of your retirement pension system	Most Recent Actuarial Valuation Report	Traverse City Light and Power MERS Defined Benefit Plan				
2	Enter retirement pension system's assets (plan fiduciary net position ending)	Most Recent Audit Report	Sec. 5(4)(b) 16,498,456				
3	Enter retirement pension system's liabilities (total pension liability ending)	Most Recent Audit Report	Sec. 5(4)(b) 29,483,200				
4	Date (plan year ending) of valuation of system's assets and liabilities (e.g. 12/31/2016)	Most Recent Audit Report	Sec. 5(6) 12/31/16				
5	Actuarially Determined Contribution (ADC)	Most Recent Audit Report	Sec. 5(4)(b) 944,388				
6	Governmental Fund Revenues	Most Recent Audit Report	Sec. 5(4)(b) 35,114,839				
7	Pension Trigger Summary						
8	Is this unit a primary unit (County, Township, City, Village)?	From Municode	NO	NO	NO	NO	NO
9	Funded ratio	Calculated	Sec. 5(4)(b) 56.0%				
10	All plans combined ADC/Governmental fund revenues	Calculated	Sec. 5(4)(b) 2.7%	0.0%	0.0%	0.0%	0.0%
11	Does this plan trigger "underfunded status" as defined by PA 202 of 2017?	Primary unit triggers: Less than 60% funded AND greater than 10% ADC/Governmental fund revenues. Non-Primary unit triggers: Less than 60% funded	Sec. 5(4)(b) YES	NO	NO	NO	NO

By emailing this report to the Michigan Department of Treasury, the local unit of government acknowledges that these statements are complete and accurate in all known respects. Act 202 of 2017 also requires the local unit of government to electronically submit the report to its governing body.

Protecting Local Government Retirement and Benefits Act

Application for Waiver and Plan:

Defined Benefit Pension Retirement Systems

Issued under authority of Public Act 202 of 2017.

I. MUNICIPALITY INFORMATION

Local Unit Name: Traverse City Light and Power Six-Digit Muni Code: 287516
Defined Benefit Pension System Name: Traverse City Light and Power MERS Defined Benefit Plan
Contact Name (Administrative Officer): Tim Arends
Title if not Administrative Officer: Executive Director
Email: tarends@tclp.org Telephone: (231) 932-4558

2. GENERAL INFORMATION

Application for Waiver and Plan: This Application for Waiver and Plan may be filed by any local unit of government with at least one defined benefit pension retirement system that has triggered a preliminary review of underfunded status. In accordance with Public Act 202 of 2017 (the Act), if the state treasurer determines that the underfunded status is adequately being addressed by the local unit of government, the state treasurer shall issue a waiver of the determination of underfunded status. If requesting a waiver, you must submit a separate and unique application for each underfunded retirement system as determined by the *2017 Retirement System Annual Report (Form 5572)*.

Due Date: The local unit of government has **45 days from the date of notification** to complete and file the Application for Waiver and Plan. Failure to file within 45 days will result in a determination of underfunded status for your local unit of government as defined by the Act, and your local unit of government will be required to submit a corrective action plan to the Municipal Stability Board for approval.

Filing: This Application for Waiver and Plan must be approved by the local government's administrative officer and its governing body. **You must provide proof of your governing body approving this Application for Waiver and Plan and attach the documentation as a separate PDF document.** Failure to provide documentation that demonstrates approval from your governing body will automatically result in a denial of the waiver application.

The completed application must be submitted via email to LocalRetirementReporting@michigan.gov. **If you have multiple underfunded retirement systems, you are required to complete separate applications and send a separate email for each underfunded system.** Please attach each application as a separate PDF document in addition to all applicable supporting documentation.

The subject line of the email(s) should be in the following format: **Waiver-2017, Local Unit Name, Retirement System Name** (e.g. Waiver-2017, City of Lansing, Employees' Retirement System Pension Plan). Treasury will send an automatic reply acknowledging receipt of the email. Your individual email settings must allow for receipt of Treasury's automatic reply. This will be the only notification confirming receipt of the application(s).

Considerations for Waiver: A successful Application for Waiver and Plan will demonstrate what your local unit has **already done** to adequately address its underfunded status. Prospective solutions will not be granted merit in determining the outcome of the waiver application (e.g. future amendments to collective bargaining agreements, upcoming millage proposals, potential budget changes, etc.). However, Treasury may consider additional ongoing funding dedicated to your retirement system if those commitments have been formally enacted by the governing body and can be documented. Section three of this waiver application allows the local unit of government to enter a brief description

of prior actions that have already been implemented to adequately address its underfunded status. For purposes of Sec. 6.(1) of the Act, this application will also be considered the plan.

Underfunded status for a defined benefit pension system is defined as being less than 60% funded according to the most recent audited financial statements, and, if the local unit of government is a city, village, township, or county, the actuarially determined contribution for all of the defined benefit pension retirement systems of the local unit of government is greater than 10% of the local unit of government's annual governmental fund revenues, based on the most recent fiscal year.

3. DESCRIPTION OF PRIOR ACTIONS

Prior actions are separated into three categories below: System Design Changes, Additional Funding, and Other Considerations. Please provide a brief description of the prior actions implemented by the local government to address the retirement system's underfunded status within the appropriate category section. Within each category are sample statements that you may choose to use to indicate the changes to your system that will positively affect your funded status. For retirement systems that have multiple divisions, departments, or plans within the same retirement system, please indicate how these changes impact the retirement **system** as a whole.

Please indicate where in the attached supporting documentation these changes are described and the impact of those changes (i.e. what has the local unit of government done to improve its underfunded status, and where can we find the proof of these changes in the supporting documentation?).

Note: Please provide the name of the system impacted, the date you made the change, the relevant page number(s) within the supporting documentation, and the resulting change to the system's funded ratio.

Category of Prior Actions:

System Design Changes - System design changes may include the following: Lower tier of benefits for new hires, final average compensation limitations, freeze future benefit accruals for active employees in the defined benefit system, defined contribution system for new hires, hybrid system for new hires, bridged multiplier for active employees, etc.

Sample Statement: *The system's multiplier for current employees was lowered from 2.5X to 2X for the **General Employees' Retirement System** on **January 1, 2017**. On page 8 of the attached actuarial supplemental valuation, it shows our funded ratio will be **60%** by fiscal year **2020**.*

Enter System Design Statement here:

The system's multiplier for new hire union employees was lowered from 2.25% to 1.5% based on base wage only. This was implemented for union employees hired after 7/1/2012.

The system's multiplier for new hire non-union employees was lowered from 2.25% to 1.5% based on base wage only. This was implemented for new hire non-union employees hired after 7/1/2017.

Additional Funding – Additional funding may include the following: voluntary contributions above the actuarially determined contribution, bonding, millage increases, restricted funds, etc.

Sample Statement: *The local unit provided a lump sum payment of **\$1 million** to the **General Employees' Retirement System** on **January 1, 2017**. This lump sum payment was in addition to the actuarially determined contribution (ADC) of the*

system. The additional contribution will increase the retirement system's funded ratio to **61% by 2025**. Please see page 10 of the attached enacted budget, which highlights this contribution of **\$1 million**.

Enter Additional Funding Statement here:

On an annual basis during budget, staff reviews continuing on a ten year accelerated payment schedule (reduced each year - currently proposing to the Board year 8) based on market value not on actuarial value. (This leads to more conservative contributions.) The accelerated funding was first adopted for the fiscal year ending June 30, 2017. This accelerated payment in theory should bring us close to 100% funding level by fiscal year ending June 20, 2026. With six months of funding the utility's funding percentage increased from 57% from the December 31, 2015 actuarial valuation to 59% from the December 31, 2016 actuarial valuation showed on pp6 of the December 31, 2016 actuarial valuation. Additionally, our assets have increased from \$16,498,455.81 to \$18,986,521.95 from December 31, 2016 to December 31, 2017 per the MERS Statement of Fiduciary Net Position.

Other Considerations – Other considerations may include the following: outdated Form 5572 information, enterprise fund revenue considerations, actuarial assumption changes, amortization policy changes, etc.

Sample Statement: The information provided on the Form 5572 from the audit used actuarial data from **2015**. Attached is an updated actuarial valuation for **2017** that shows our funded ratio has improved to **62%** as indicated on page 13.

Sample Statement: **50%** of our retirement liabilities are attributable to employees within our enterprise divisions as shown in the attached analysis, yet we could not include enterprise revenue as part of our governmental funds. The attached analysis shows that our revenue ratio (ADC / Total Governmental Funds) would only be **5%** when including enterprise funds within the calculation.

Enter Other Considerations Statement here:

4. DOCUMENTATION ATTACHED TO THIS WAIVER APPLICATION AND PLAN

Documentation must be attached as a .pdf to this waiver application. The documentation must demonstrate the prior actions that have already been implemented to adequately address the local unit of government's underfunded status. Please ensure this documentation directly supports and highlights the systems funded ratio as entered in section three of the waiver application above. Please check all documents that are included as part of this application and attach in successive order as provided below:

Naming convention: when attaching documents please use the naming convention shown below. If there is more than one document in a specific category that needs to be submitted, include a, b, or c for each document. For example, if you are submitting two supplemental valuations, you would name the first document "Attachment 2a" and the second document "Attachment 2b".

Continued on Page 4.

Naming Convention

- Attachment – 1
- Attachment – 1a

- Attachment – 2a

- Attachment – 3a
- Attachment – 4a

- Attachment – 5a

- Attachment – 6a

- Attachment – 7a

Type of Document

This Waiver Application and Plan (Required)

Documentation from the governing body approving the Waiver Application and Plan (Required)

Actuarial Analysis (annual valuation, supplemental valuation, projection)

Internally Developed Projection Study

Documentation of additional payments in past years that is not reflected in your audited financial statements (e.g. enacted budget, system provided information).

Documentation of commitment to additional payments in future years (e.g. resolution, ordinance)

A plan that the local unit has already approved to address its underfunded status, which includes documentation of prior actions and the positive impact on the system's funded ratio

Other documentation, not categorized above

5. LOCAL UNIT OF GOVERNMENT'S ADMINISTRATIVE OFFICER APPROVAL OF WAIVER APPLICATION AND PLAN

I _____, as the government's administrative officer (*enter title*) _____ (Ex: City/Township Manager, Executive director, Chief Executive Officer, etc.) approve this Application for Waiver and Plan. We are requesting a waiver of underfunded status, because we have already implemented substantial changes to our retirement system as described above.

I confirm to the best of my knowledge that because of the changes listed above the following statement will occur:

The Retirement Pension System listed below will achieve a funded status of at least 60% by the Fiscal Year listed below.

Retirement Pension System Name: _____ Fiscal Year: _____

Signature: _____

Date: _____



**TRAVERSE CITY
LIGHT & POWER**

To: Light & Power Board
From: Tim Arends, Executive Director
Date: February 23, 2018
Subject: Voluntary Green Pricing Program

Public Act 342, Section 61, requires utilities to provide customers the option to participate in a voluntary green pricing program where customers can specify the amount of electricity provided to the customer that will be generated from renewable energy. The Michigan Public Service Commission ("MPSC") is requiring the programs be implemented by utilities within the State of Michigan by April 20, 2018.

Staff, with consultation from Michigan Public Power Agency ("MPPA") and Utility Financial Solutions, LLC, mutually agreed the best method to calculate the renewable energy rider tariff was based on marginal cost (the cost of adding one more unit of product). For Traverse City Light & Power ("TCL&P") this is the next renewable energy project to come online (Pegasus Wind Project) energy cost. The rate calculated as a rider tariff rate is \$.0085 per kWh and the tariff sheet is included in the board packet for your review.

In accordance with recommendations from the MPSC this rate will be reviewed biennially unless the utility's purchase power portfolio changes, with new renewable energy projects this will automatically require a new calculation of the rider tariff rate.

Any customer who wishes to enroll in the renewable energy rider will have the tariff rate added to their rate class and, at least on a quarterly basis, the utility's renewable energy credits (utility receives one credit for one MWh of renewable energy generated) will be retired by MPPA on their behalf, demonstrating their energy was provided by renewable energy. More information prepared by MPPA on this program has been included in this packet for your review.

Currently, the utility has a long position with their renewable energy credits, however, if the demand of the volunteer green pricing program exceeds this position, renewable energy credits can be purchased off the market.

Staff is proposing to take this one step further by proposing a grant program with the revenues generated from this rider tariff rate. The revenues would be awarded to community programs for renewable energy or energy waste reduction programs with the intention it will reduce government operations costs and lead to cost savings in taxes or through other rates and fees charged to the public. Finite details have yet to be developed and will be brought before the board for future consideration.

FOR THE LIGHT & POWER BOARD MEETING OF MARCH 13, 2018

If the Board concurs with staff's recommendation the following motion would be appropriate:

MOVED BY _____, SECONDED BY _____,

THAT THE BOARD SET A PUBLIC HEARING FOR PROPOSED ADOPTION OF THE RENEWABLE ENERGY RATE RIDER TARRIFF RATE ON APRIL 10, 2018 IN ACCORDANCE WITH PUBLIC ACT 342 OF 2016; AND FURTHER THAT A NOTICE OF THE PUBLIC HEARING BE POSTED ON THE UTILITY'S WEBSITE AND PLACED IN THE TRAVERSE CITY RECORD EAGLE.

City of Traverse City
Light and Power Department
Effective:

RENEWABLE ELECTRIC ENERGY RIDER

Availability:

The rider is available to customers making use of a TCL&P metered electric rate schedule(s).

Nature of Service:

TCL&P will provide green power to system or if needed, purchase renewable energy credits per the participant enrollment. However, TCL&P does not guarantee that the actual electricity delivered to each participant's facility at any specific time will be produced from a green supply resource.

Monthly Rate:

Customer's electing this premium service option will receive an additional charge per kWh in the amount of \$.0086 for the specified amount of electricity attributable to the customer. The customer may elect to have 25%, 50%, 75% or 100% of their consumption that will be renewable energy. The rate will be modified when new renewable resources are executed by a purchase power agreement or on a biennial basis. The amount of kWh's will be based on the availability of resources including renewable energy credits TCL&P is able to secure.

Term:

All participants electing to sign up for this rider will be enrolled until notification is received to terminate the rider.



Voluntary Green Pricing (VGP) Program

VGP Legislation / Requirements:

- PA 342 – Section 61 requires electric providers to offer to its customers the opportunity to participate in a voluntary green pricing program under which the customer may specify, from the options made available by the electric provider, the amount of electricity attributable to the customer that will be renewable energy.
- Municipal Utilities must make VGP program available for their customers no later than April 20, 2018.

VGP Webpage / Customer Sign-Up

- MPPA will develop and maintain a VGP webpage which will provide a description of the VGP Program, include customer registration page and provide emails to the municipality with customer registration information.
- Municipal Utilities will have the option to list the MPPA VGP webpage link on their own Municipal webpage.
- Municipal Utilities will be required to provide MPPA with a monthly VGP customer tracking sheet that includes the monthly VGP kWh usage for customers as well as one year historical kWh usage data for any new VGP customers.

VGP Administrative Costs:

- Cost to Member Municipal Utilities are in the hundreds of dollars per year to participate.
- Program admin costs should be viewed as fixed and nominal costs that should be recovered through all rate classes not just VGP participants

VGP Program Rate to Customers:

- Member Utility VGP Rate should be based upon desired participation levels
 - (i.e. higher participation = lower VGP Rate, lower participation = higher VGP Rate)
- MPPA Recommended VGP Rate = \$0.01 per kWh or \$10.00 per MWh

MPPA Responsibilities:

- VGP webpage development and maintenance
- VGP tracking database for customer kWh usage data
- REC management activities
 - (REC tracking, REC pricing forecast, Wholesale REC transactions, MIRECs account management, Retirement of VGP Program RECs)

Customer Registration Sample

Customer Sign-up

*** Required**

Title First* Last*

Address*

Address 2

City* State* Zip*

E-mail Address*

Re-enter E-mail*

Phone* Alternate

My participating energy provider is: *
-Select-

What percentage of your electricity usage would you like devoted to the Program?*

25% 50% 75% 100%

Member
Municipal
Selection





**TRAVERSE CITY
LIGHT & POWER**

To: Light & Power Board
From: Tim Arends, Executive Director
Date: February 23, 2018
Subject: Spartan Renewable Energy Proposal

At the November 28, 2017 board meeting, Spartan Renewable Energy (“Spartan”) presented to the Board a proposal for renewable energy at multiple levels to provide a solution in meeting the City of Traverse City’s renewable energy goal resolution and Traverse City Light & Power’s (“TCL&P”) State mandated renewable energy goal of 15% by 2021.

Since the initial presentation, staff has been working with Spartan to clarify the terms of the proposal. A formal energy offer has been submitted in December 2017 outlining the terms of which are included in the packet for your review. The terms clarify that energy volumes are fixed and are not based on the actual production of any particular generating unit(s). The capacity credits increase based on the three tier levels offered – 5,000 MWh, 10,000 MWh and 15,000 MWh with capacity starting at 1MW and escalating 1MW with each tier.

Information on the initial proposal has been provided to the city’s Green Team, along with the other renewable energy offers presented at the November 2017 board meeting. The Green Team has responded, that at this time, they are interested in pursuing renewable energy offers that would not require a rate subsidy paid by the city. TCL&P staff also provided an update on renewable energy including information on this proposal at the January 8, 2018 City Commission Study Session.

The proposal analysis (attached) has changed since the presentation held at the City Commission Study Session, because of new hourly energy prices provided by the Michigan Public Power Agency (“MPPA”) that shows a slower increase in forward market energy prices. Initially, it was expected at ten years the proposed power agreement would reflect market price and continue on until the end of the contract at a discount (lower than market price); however, based on the MPPA analysis, that has been extended to twenty years causing this proposed purchase power offering to be at a premium. The calculated premium is approximately \$1M over the twenty-year contract period, or an average of \$50,000 per year. If the energy is not dedicated to the City (paying the full premium annually), the first year will affect wholesale rates by \$.00015 per kWh through the power cost recovery rate. This is an immediate rate increase without board action. The different rate class average billings will increase by the following amounts annually: 1) residential \$.90, 2) commercial \$6.98, and 3) industrial \$469.52. The utility’s largest customer’s annual electric cost will increase approximately \$5,400.

FOR THE LIGHT & POWER BOARD MEETING OF MARCH 13, 2018

Staff forwarded this offer to MPPA to perform an analysis on this agreement because that is what they do every day and what we pay them to do for this utility. The evaluation and assessment is included in your board packet. Some of the major takeaways of the evaluation are:

1. Change the single priced structure to an annually graduated or escalating price to align with TCL&P's power supply portfolio and the natural shape of the forward market value of electricity, which will eliminate the front-end loaded costs.
2. The contract would be a better fit with the utility's portfolio if it were solely "On-Peak" as the portfolio has greater percentage of "On-Peak" hours available for supply additions (5/12 instead of 24/7).
3. A formal power purchase agreement should be developed and negotiated by TCL&P executives and legal staff before board action.
4. The analysis concluded that the economic impact of this offer would be at a premium to the city and/or the utility until year 2039.

MPPA's analysis was shared with Spartan and the following is their high-level response, "MPPA brings up valid points about graduated pricing, shaping, and a shorter term to bridge to when they can provide more supply. Products can always be better and cheaper, but they have to be weighed against alternatives. Our struggle with the analysis is that it is weighed against a product that doesn't exist and, if it did, would cost more than \$54.50/MWh. Future utility scale solar may have that profile, but it will certainly be a similar 20+ year commitment and there is no indication that proposed Michigan projects will hit those price points in a timeframe suitable to meet the City's goal and/or TCL&P's RPS step up. It is actually trending the other way recently with solar tariffs, lengthy MISO queues, ITC deadlines, unfavorable property tax treatment, and land use issues (like you just witnessed at Elmwood Township). MPPA can confirm all of these pressures and risks, if asked about them. I think what it really boils down to is whether the City/Utility wants to act on affordable renewable supply now or wait. If you choose to wait, you should know what you are waiting for and the risks and opportunity costs associated with waiting."

Additionally, a representative from Spartan has indicated they will be attending the meeting to provide you further information on their purchase power offer and answer any questions you may have.

One of the selling points from Spartan regarding their proposal is to help meet the City of Traverse City's renewable energy goal resolution, and further to help TCL&P meet its State mandated renewable energy goal.

Included within the packet is a spreadsheet provided by MPPA showing the forecasted position of TCL&P in meeting the State Renewable Energy mandate under two different scenarios. (The Renewable Energy Credits is how the utility meets the State Renewable Energy Goal through the MIRECS system, which MPPA manages for TCL&P. For simplicity purposes, one MWh of renewable energy produced (or purchased) equals one Renewable Energy Credit). The first scenario is with the Pegasus Wind Project and takes into consideration Landfill Gas Project roll off. The other is without the Pegasus Wind Project and Landfill Gas Project roll off. In both scenarios, the utility is forecasted to meet the State mandate that requires the utility's power supply portfolio consist of 15% renewable energy by 2021. In fact, TCL&P has already met the State

FOR THE LIGHT & POWER BOARD MEETING OF MARCH 13, 2018

mandate through 2022 without the Pegasus Wind Project. With the Pegasus Wind Project, which is to be operational by early 2019, the utility would be in compliance until 2029.

Therefore, it is my recommendation that the Board not view the Spartan offer as assisting TCL&P in meeting its State mandated renewable energy goal. If the Board desires this offer to assist the City in meeting its 100% renewable energy goal I believe I have shown a better program for the city with the prior agenda item, through the Voluntary Green Pricing program without the city or the utility paying a \$50K premium per year over a twenty-year period.

Further, it is my opinion that the Board should not act on this (or any) unsolicited offer for a variety of reasons. Most importantly it goes against best practices in evaluating firm energy contracts. When a utility determines it needs more energy, renewable or otherwise, it seeks bids for that energy and recommends the best price/contract. That is not what is happening in this case. While this offer “appears” appealing, for a variety of reasons to different individuals/groups, it was never put out for bid to see if this truly was the best offer the utility could obtain.

Before this Board acts on an offer for additional renewable energy, it must first determine how much energy is needed and when. Further, if the board simply desires to get more renewable energy as quickly as possible, which we certainly can do, the Board must determine for Staff how much you want above the State mandate. To-date, the Board has not made that determination nor given Staff direction in that regard.

Therefore, it is my recommendation to the Board that it reject this offer (take no action), and collectively define for Staff what your desires are for additional renewable energy. If Staff is not moving swiftly enough to satisfy the Board we can change our processes as directed by the Board.

If the Board does not agree with staff’s recommendation to **NOT** entertain the offer from Spartan, the following motion would be appropriate:

MOVED BY _____, SECONDED BY _____,

**THAT THE BOARD DIRECTS STAFF TO NEGOTIATE A PURCHASE POWER
AGREEMENT WITH SPARTAN RENEWABLE ENERGY FOR THE BOARDS
FUTURE CONSIDERATION.**



December 15, 2017

Spartan Renewable Energy Proposal

Spartan is excited for the opportunity to supply Traverse City Light & Power (TCL&P). Spartan's power supplier is Michigan's leader in renewables, making Spartan well suited to meet the needs of TCL&P.

Spartan is offering to supply with fixed renewable energy volumes and fixed capacity for 20 years. Details of Spartan's proposal are covered below.

1. Offer –

	Renewable Energy Volume	Capacity Volume	All-Inclusive Price
Tier 1	5,000 MWh	1 MW	\$54.50/MWh
Tier 2	10,000 MWh	2 MW	\$54.50/MWh
Tier 3	15,000 MWh	3 MW	\$54.50/MWh

2. Generation source – Spartan will use its Michigan-based sources for renewable energy and capacity.

3. Delivery – Spartan will deliver to CONS.TCLP.

Should TCL&P require more capacity, we are pleased to offer it at the following price points.

Capacity Length	Price
5-year	\$3.50/kW month
10-year	\$4.00/kW month

Spartan appreciates your consideration of our offer to serve TCL&P. Please contact me with any questions.

Respectfully submitted,

Kim Molitor, President and CEO



Objective:

On January 15, 2018, Traverse City Light & Power (“TCLP”) requested Michigan Public Power Agency (“MPPA”) evaluate the December 15, 2017 Renewable Power Supply proposal from Spartan Renewable Energy to (a) understand how the proposal would impact the economics of the utility portfolio, (b) analyze the appropriate quantity considering power supply portfolio objectives, (c) evaluate the proposal relative to other renewable energy supply options, and (d) provide TCLP with other economic & operational considerations related to such a transaction.

Note: MPPA was not asked to issue a Request for Proposal or formally solicit the market place or its Members so all references to pricing contained herein are from the energy supply staff that routinely enter into transactions in the wholesale power market.

Transaction Strategy:

TCLP informed MPPA that it desires to increase the percentage of supply in its portfolio from renewable energy resources and that it would like to implement this portfolio change in the near term 2018 / 2019. It further indicated that its governing body is concerned about the success and timing of new renewable energy projects that TCLP and 22 other Michigan municipal utilities are participating in or evaluating for future participation. These projects are in various stages of development.

TCLP is a member participant in the Pegasus Wind Project. This renewable Project is expected to come online 1st quarter of 2019. TCLP has also entered into numerous other renewable energy transactions with new resources in previous years. TCLP is an active participant in the Michigan Public Power Agency Energy Services Project and Renewable Resource Services Committee tasked with evaluating new wind and solar power supply projects.

Transaction Description:

The Spartan Renewable Energy proposal discussed within this document is not a formal power purchase agreement where the specific legal terms & conditions of a transaction are written. As such, MPPA is only evaluating the single page commercial proposal provided on December 15, 2017.

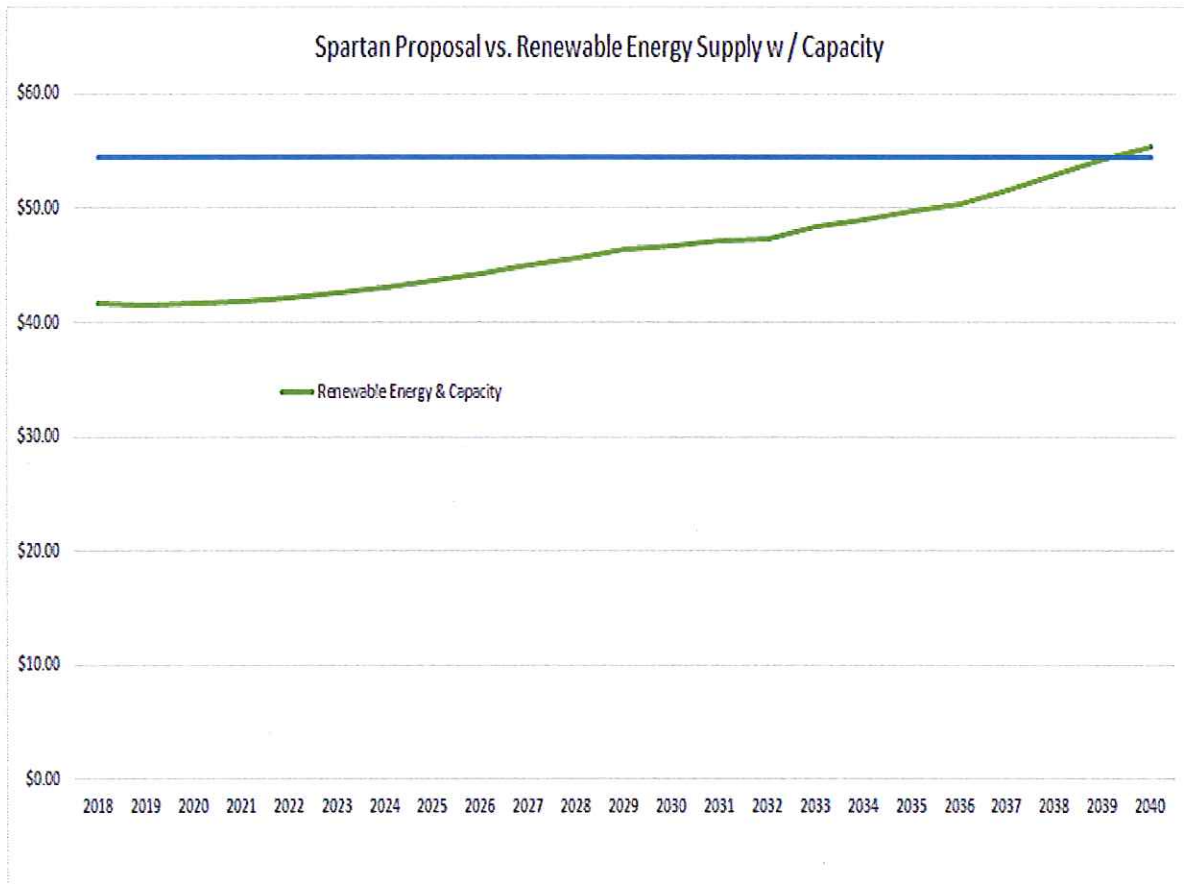
The transaction contemplated here is for 20 years, contains energy from renewable resources located in Michigan and a defined quantity of capacity. The proposal contains three options - tiers of must take energy volumes of 5,000, 10,000 and 15,000 MWh annually delivered 7 days a week & 24 hour a day as well as 1, 2 and 3 MW of Capacity respectively. The proposed transaction is at a flat price from year 1 thru year 20 at **\$54.50 per MWh**. The energy would be delivered to the TCLP load commercial pricing location in the MISO regional power market. (this would need assistance from MPPA to effectuate).

MPPA recommends that, due to the size of the financial commitment & term being contemplated by this transaction, TCLP thoroughly and properly obtain legal counsel to develop, review and agree on a power purchase agreement before authorizing a transaction binding its municipal electric utility.

Expected Economic Value:

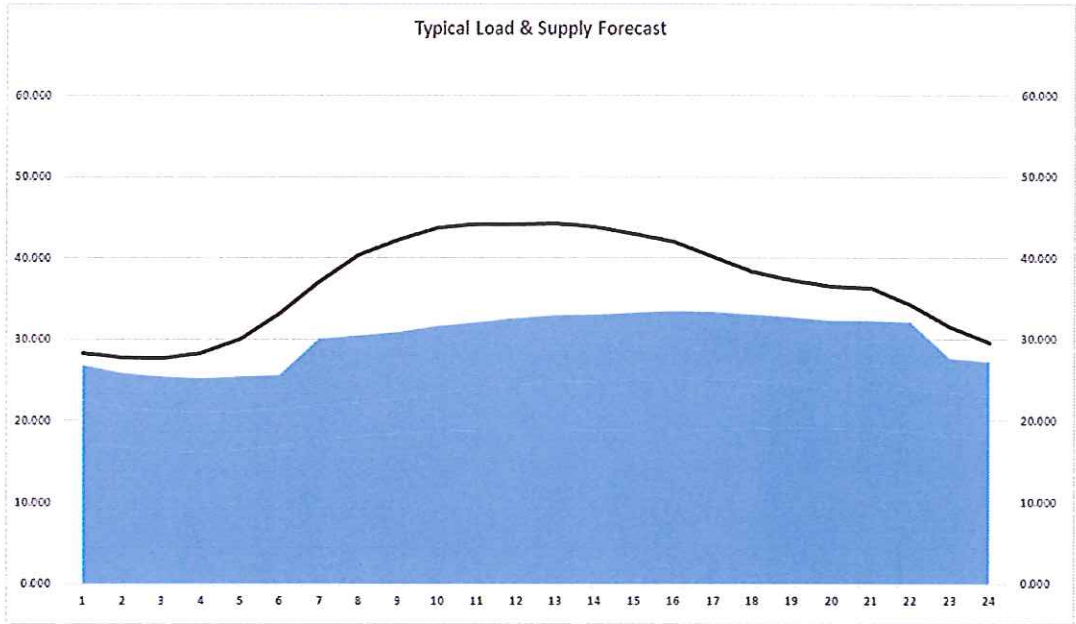
The proposal does raise projected costs to TCLP customers largely due to the net present value impact of the flat price structure against the value of market energy. The present-day value of energy delivered to Michigan on a 7 x 24 energy delivery basis is approximately \$30 per MWh with capacity less than \$2 MWh. The forward curve for energy escalates over time (see graph below) and long-term capacity is \$4.00 kW / month (as provided in the Spartan proposal).

TCLP should consider asking Spartan to align its pricing with the current forward curve, so TCLP utility customers are not front-loading year 15 costs in year 1. This can be accomplished with a lower year 1 starting price escalated annually each year thereafter (see example below).



Power Supply Portfolio fit:

The chart represented below depicts the volume of energy projected to be consumed in 2019 for all utility customers of TCLP (black line) and how currently that consumption is to be served (blue shaded area).



This load verse resource shape is largely consistent over the next decade. The better fitting energy supply would be Solar as On-Peak hours will require a large % of new supply additions. Further, this portfolio shape accentuates the issue with the 20-year flat price structure as it means a much higher contract price will have a higher probability of being sold during some Off-Peak hours at current market prices (\$20 / MWh).

If TCLP was to proceed with the 7 x 24 shape and the single flat fixed price for the term, MPPA recommends that it limit the transaction to Tier 1 volume until more research can be done on the Off Peak economic impacts.

Comparative Supply Arrangements:

The desire to obtain renewable energy in the near term (this calendar year) means that TCLP is defaulting to existing renewable supply resources. Existing resources have already been financed and produce electricity being consumed today. A transaction from an existing renewable energy resource simply switches the accounting of ownership of the energy & renewable attributes. No physical grid impact occurs.

By contrast, a new resource adds power supply and renewable attributes to the wholesale electric grid, displacing conventional fossil fuel resources.

New Resource Economics

Solar in Michigan is being proposed in the mid \$40's per MWh. These contract prices typically escalate at 2% annually. The energy delivery is during On-Peak hours. They also provide Capacity due to their alignment with load.

Wind in Michigan is being proposed in the \$30's per MWh. These contract prices typically escalate at 2% annually. The energy delivery is skewed more to the Off-Peak and deliver about 20% of the maximum output as capacity value.

Existing Resource Economics

MPPA member portfolios consist of varying percentages of renewable energy today. Those same members own and control capacity over time horizons into the mid 2030's. Depending on the price level (particularly the flat price economics being considered here) MPPA members may want to engage TCLP in a sale.

External renewable supply resources (non-municipal owned) are also interested in long-term supply sale arrangements. Those indications show price offers through 2035. They would contain capacity and provide annually escalated energy pricing.

Other Economic & Operational Requirements:

Physical Delivery

Since the resources proposed in this transaction are not interconnected to the TCLP distribution or transmission system, the renewable energy and capacity products proposed here will need to be scheduled to and settled in the wholesale market. MPPA, TCLP and Spartan (or any other outside supply source) will need to carefully consider the contract and operational arrangements to ensure the energy can be delivered efficiently and effectively. A formal power purchase agreement will specify these details.

Evaluation & Assessment - SPARTAN Renewable Energy Power Supply Proposal to TCLP

Observations and Considerations:

- The size of the financial commitment of the proposed transaction (**between \$5.5 million and \$16.3 million depending on volume Tier**) should be evaluated under *City Purchasing and Contracting Policies and Procedures*.
- The single fixed price structure of the proposal should be revised to an annually graduated or escalating price to align with TCLP power supply portfolio budgets and the natural shape of the forward market value of electricity. Otherwise there are funding, credit risk / costs and Net Present Value considerations that need to be evaluated. Current market prices are approximately 30% below the proposed fixed price.
- The shape of the block of MWhs delivered would be an incrementally better fit if it were On-Peak as the projected TCLP load & supply resource profile (depicted below) has a greater percentage of On-Peak hours available for supply additions.
- A formal Power Purchase Agreement should be developed and negotiated by utility executive & legal staff before utility board action. The significance of the financial commitment, the complexity of the commercial conditions & term (20 years) warrant careful negotiation w/ proper legal review.
- If the primary objective of the City is to increase the percentage of renewable energy in the portfolio in the near term (i.e. 2018, 2019 & 2020) and new renewable resources are not important, then the City should also consider a less financially intensive transaction of 1 to 5 years. This would better align with market prices, reduce the contracting / approval requirements, meet City goals and allow TCLP to obtain visibility into the new project completion pipeline.
- MPPA member portfolios have long-term renewable energy & capacity, and some may be interested in selling to TCLP. There are also external supply resources that have shown an interest in offering long-term renewable energy & capacity supply. Hence internal (municipal only) and external solicitation is warranted.

RENEWABLE ENERGY OBJECTIVES, ENVIRONMENTAL CLAIMS & SUPPLY SPECIFICATIONS

Objectives

Specifications are critical in developing or creating a product or project. Whether it's a food recipe, construction plan or a power supply portfolio, specifications are what define the core elements of what is being created.

Renewable Energy (sources) capture their energy from existing flows of energy, from on-going natural processes, such as sunshine, wind, flowing water, biological processes and geothermal heat flows.

To date what complied as Renewable Energy was typically driven by a State mandate or Renewable Energy Portfolio Standards.

29 States have Renewable Energy Portfolio Standards each with different definitions, goals and objectives. They range in what resources comply to the intensity of the requirement from Ohio's 12.5% by 2026 to California's 50% by 2030.

Inside these different State rules are specifications that drive the type, quantity and vintage of renewable resources that can be used to comply with the law.

For political reasons and cost to retail electric rates all State laws related to renewable energy standards allowed (at time of passage) existing resources to comply. The limitations on those resources (age, type, location, etc.) and the percentage limits varied significantly across the United States.

Obviously, the main objective of all State legislation mandating a certain amount of renewable energy was the development of new renewable resources since it is the only action that truly impacts the composition of power supply resources on the electric grid and the environmental impacts of producing electricity.

Environmental Claims

Today, many citizens, corporations and local governing bodies in the United States have moved well beyond State mandate requirements. They are committing to their own specifications both in quantity and type. In 2015, over 50% of all wind power purchase agreements in the United States were executed by corporations.

This fast-growing marketplace has garnered the interest of the Federal Trade Commission (FTC). The FTC has published *Guides for the Use of Environmental Marketing Claims (Green Guides)*. Organizations making environmental claims that fail to comply with the Green Guides risk facing an FTC Action.

What environmental claim do you want to make?

Renewable Supply specifications

When an organization specifies its own unique renewable energy objective it must create its own Standard of what complies in meeting that requirement.

- **New** means “additional” ...the supply you produce or purchase into your portfolio would not have been on the electric grid but for your commitment. The concept of “additionality” is at the epicenter of strategic plans of many large corporate buyers and utilities.
- **Fuel Type** means the renewable resource (sun, wind, water, biomass, etc.) %’s you want in your portfolio. Some buyers want a zero-emission factor since biomass does produce Green House Gas Emissions (for example). Fuel type also determines the production profile (solar mostly on peak example) which obviously impacts cost, value and the complement to the other resources in the portfolio.
- **Geographic** means where the Resource is located. Does it need to be in a City, State, Region or Country? In the case of Michigan’s RPS, load serving electric utilities are required to source from within the State. Municipal utilities were granted an exception and can also source from Ohio, Indiana and Wisconsin. Obviously, if your % objectives exceed the State mandate then where you buy from is up to you.
- **Cost** means how the power supply resources impact your retail electric rates. Do you want your overall electric rates to remain neutral, go down or only go up by a certain %? Economies of scale is the principle driver of cost
- **Diversification** means the allocation of supply from one resource, two resources or a portfolio of resources. Diversification is a risk principle that spreads project, owner, operator and performance risk.
- **Technological Obsolescence** means how you replace older versions of power supply resources with newer versions. The concepts in portfolio management called “layering” provide for consistent rolling out of and into new resources. The exact specifications of layering are driven by the risk tolerances of the asset owner but clearly the power industry has shown the efficiency of power supply resources has and will continue to change dramatically. Do you want to commit your entire need to one transaction for 20 years or have multiple transactions starting and stopping at different times over the next 20 years?
- **Vintage** – means the application of an age limit to an existing resource. If you choose to purchase from existing resources (those that are already on the grid and producing electricity) then you might apply an age limit (built on or after).

There are many other specifications that could be employed but these are primary factors in a renewable portfolio plan.

The state of Michigan’s law has very broad requirements.

- Michigan – Clean and Renewable Energy and Energy Waste Reduction Act (Act 295 of 2008)
- Act No 342 of 2016

TRAVERSE CITY

SCENARIO 1 (PEGASUS WIND WITH LFG ROLL OFF)				
YEAR	EXPECTED ANNUAL BEGINNING REC BALANCE	ANNUAL RECS GENERATED	REC REQUIREMENT	LONG / (SHORT)
2017	87,269	16,639	32,297	71,611
2018	71,611	36,935	32,297	76,249
2019	76,249	47,818	41,591	82,476
2020	82,476	47,875	41,916	88,435
2021	88,435	47,818	50,754	85,499
2022	85,499	47,818	51,233	82,084
2023	82,084	47,818	51,729	78,173
2024	78,173	47,875	52,236	73,812
2025	73,812	46,921	52,752	67,981
2026	67,981	46,019	53,276	60,724
2027	60,724	42,559	53,806	49,477
2028	49,477	40,291	54,341	35,427
2029	35,427	40,255	54,881	20,801

PA 295 / PA 342 Compliance Requirement % Lookup	
2017	10%
2018	10%
2019	12.5%
2020	12.5%
2021	15%
2022	15%
2023	15%
2024	15%
2025	15%
2026	15%
2027	15%
2028	15%
2029	15%

SCENARIO 2 (NO PEGASUS WIND WITH LFG ROLL OFF)				
YEAR	EXPECTED ANNUAL BEGINNING REC BALANCE	ANNUAL RECS GENERATED	REC REQUIREMENT	LONG / (SHORT)
2017	87,269	16,639	32,297	71,611
2018	71,611	36,935	32,297	76,249
2019	76,249	36,935	41,591	71,593
2020	71,593	36,962	41,916	66,639
2021	66,639	36,935	50,754	52,820
2022	52,820	36,935	51,233	38,522
2023	38,522	36,935	51,729	23,728
2024	23,728	36,962	52,236	8,454
2025	8,454	36,038	52,752	(8,260)
2026	-	35,136	53,276	(18,140)
2027	-	31,676	53,806	(22,130)
2028	-	29,378	54,341	(24,963)
2029	-	29,372	54,881	(25,509)

Traverse City Light and Power
Spartan Proposal

Year	Fiscal Year Ending	SPARTAN PROPOSAL AT 5,000 MWh			PROJECTED MARKET		COST OVER MARKET	
		Annual Production	Purchase Price	Annual Cost	Projected Market Rate	Annual Cost	Per kWh rate over Projected Market	Annual Cost
1	2019	5,000,000	\$ 0.0545	272,500.00	\$ 0.0440	\$ 220,000.00	\$ 0.0105	\$ 52,500.00
2	2020	5,000,000	\$ 0.0545	272,500.00	\$ 0.0404	\$ 202,000.00	\$ 0.0141	\$ 70,500.00
3	2021	5,000,000	\$ 0.0545	272,500.00	\$ 0.0407	\$ 203,500.00	\$ 0.0138	\$ 69,000.00
4	2022	5,000,000	\$ 0.0545	272,500.00	\$ 0.0409	\$ 204,500.00	\$ 0.0136	\$ 68,000.00
5	2023	5,000,000	\$ 0.0545	272,500.00	\$ 0.0413	\$ 206,500.00	\$ 0.0132	\$ 66,000.00
6	2024	5,000,000	\$ 0.0545	272,500.00	\$ 0.0418	\$ 209,000.00	\$ 0.0127	\$ 63,500.00
7	2025	5,000,000	\$ 0.0545	272,500.00	\$ 0.0423	\$ 211,500.00	\$ 0.0122	\$ 61,000.00
8	2026	5,000,000	\$ 0.0545	272,500.00	\$ 0.0428	\$ 214,000.00	\$ 0.0117	\$ 58,500.00
9	2027	5,000,000	\$ 0.0545	272,500.00	\$ 0.0435	\$ 217,500.00	\$ 0.0110	\$ 55,000.00
10	2028	5,000,000	\$ 0.0545	272,500.00	\$ 0.0443	\$ 221,500.00	\$ 0.0102	\$ 51,000.00
11	2029	5,000,000	\$ 0.0545	272,500.00	\$ 0.0448	\$ 224,000.00	\$ 0.0097	\$ 48,500.00
12	2030	5,000,000	\$ 0.0545	272,500.00	\$ 0.0445	\$ 222,500.00	\$ 0.0100	\$ 50,000.00
13	2031	5,000,000	\$ 0.0545	272,500.00	\$ 0.0458	\$ 229,000.00	\$ 0.0087	\$ 43,500.00
14	2032	5,000,000	\$ 0.0545	272,500.00	\$ 0.0462	\$ 231,000.00	\$ 0.0083	\$ 41,500.00
15	2033	5,000,000	\$ 0.0545	272,500.00	\$ 0.0466	\$ 233,000.00	\$ 0.0079	\$ 39,500.00
16	2034	5,000,000	\$ 0.0545	272,500.00	\$ 0.0477	\$ 238,500.00	\$ 0.0068	\$ 34,000.00
17	2035	5,000,000	\$ 0.0545	272,500.00	\$ 0.0482	\$ 241,000.00	\$ 0.0063	\$ 31,500.00
18	2036	5,000,000	\$ 0.0545	272,500.00	\$ 0.0489	\$ 244,500.00	\$ 0.0056	\$ 28,000.00
19	2037	5,000,000	\$ 0.0545	272,500.00	\$ 0.0498	\$ 249,000.00	\$ 0.0047	\$ 23,500.00
20	2038	5,000,000	\$ 0.0545	272,500.00	\$ 0.0512	\$ 256,000.00	\$ 0.0033	\$ 16,500.00
Total				\$ 5,450,000.00		\$ 4,478,500.00		\$ 971,500.00

Traverse City Light and Power
Spartan Proposal

		SPARTAN PROPOSAL AT 10,000 MWh			PROJECTED MARKET		COST OVER MARKET	
Year	Fiscal Year Ending	Annual Production	Purchase Price	Annual Cost	Projected Market Rate	Annual Cost	Per kWh rate over Projected Market	Annual Cost
1	2019	10,000,000	\$ 0.0545	545,000.00	\$ 0.0440	\$ 440,000.00	\$ 0.0105	\$ 105,000.00
2	2020	10,000,000	\$ 0.0545	545,000.00	\$ 0.0404	\$ 404,000.00	\$ 0.0141	\$ 141,000.00
3	2021	10,000,000	\$ 0.0545	545,000.00	\$ 0.0407	\$ 407,000.00	\$ 0.0138	\$ 138,000.00
4	2022	10,000,000	\$ 0.0545	545,000.00	\$ 0.0409	\$ 409,000.00	\$ 0.0136	\$ 136,000.00
5	2023	10,000,000	\$ 0.0545	545,000.00	\$ 0.0413	\$ 413,000.00	\$ 0.0132	\$ 132,000.00
6	2024	10,000,000	\$ 0.0545	545,000.00	\$ 0.0418	\$ 418,000.00	\$ 0.0127	\$ 127,000.00
7	2025	10,000,000	\$ 0.0545	545,000.00	\$ 0.0423	\$ 423,000.00	\$ 0.0122	\$ 122,000.00
8	2026	10,000,000	\$ 0.0545	545,000.00	\$ 0.0428	\$ 428,000.00	\$ 0.0117	\$ 117,000.00
9	2027	10,000,000	\$ 0.0545	545,000.00	\$ 0.0435	\$ 435,000.00	\$ 0.0110	\$ 110,000.00
10	2028	10,000,000	\$ 0.0545	545,000.00	\$ 0.0443	\$ 443,000.00	\$ 0.0102	\$ 102,000.00
11	2029	10,000,000	\$ 0.0545	545,000.00	\$ 0.0448	\$ 448,000.00	\$ 0.0097	\$ 97,000.00
12	2030	10,000,000	\$ 0.0545	545,000.00	\$ 0.0445	\$ 445,000.00	\$ 0.0100	\$ 100,000.00
13	2031	10,000,000	\$ 0.0545	545,000.00	\$ 0.0458	\$ 458,000.00	\$ 0.0087	\$ 87,000.00
14	2032	10,000,000	\$ 0.0545	545,000.00	\$ 0.0462	\$ 462,000.00	\$ 0.0083	\$ 83,000.00
15	2033	10,000,000	\$ 0.0545	545,000.00	\$ 0.0466	\$ 466,000.00	\$ 0.0079	\$ 79,000.00
16	2034	10,000,000	\$ 0.0545	545,000.00	\$ 0.0477	\$ 477,000.00	\$ 0.0068	\$ 68,000.00
17	2035	10,000,000	\$ 0.0545	545,000.00	\$ 0.0482	\$ 482,000.00	\$ 0.0063	\$ 63,000.00
18	2036	10,000,000	\$ 0.0545	545,000.00	\$ 0.0499	\$ 498,900.00	\$ 0.0046	\$ 46,100.00
19	2037	10,000,000	\$ 0.0545	545,000.00	\$ 0.0498	\$ 498,000.00	\$ 0.0047	\$ 47,000.00
20	2038	10,000,000	\$ 0.0545	545,000.00	\$ 0.0512	\$ 512,000.00	\$ 0.0033	\$ 33,000.00
Total				<u>\$ 10,900,000.00</u>		<u>\$ 8,966,900.00</u>		<u>\$ 1,933,100.00</u>

Traverse City Light and Power
Spartan Proposal

Year	Fiscal Year Ending	SPARTAN PROPOSAL AT 15,000 MWh			PROJECTED MARKET		COST OVER MARKET	
		Annual Production	Purchase Price	Annual Cost	Projected Market Rate	Annual Cost	Per kWh rate over Projected Market	Annual Cost
1	2019	15,000,000	\$ 0.0545	817,500.00	\$ 0.0440	\$ 660,000.00	\$ 0.0105	\$ 157,500.00
2	2020	15,000,000	\$ 0.0545	817,500.00	\$ 0.0404	\$ 606,000.00	\$ 0.0141	\$ 211,500.00
3	2021	15,000,000	\$ 0.0545	817,500.00	\$ 0.0407	\$ 610,500.00	\$ 0.0138	\$ 207,000.00
4	2022	15,000,000	\$ 0.0545	817,500.00	\$ 0.0409	\$ 613,500.00	\$ 0.0136	\$ 204,000.00
5	2023	15,000,000	\$ 0.0545	817,500.00	\$ 0.0413	\$ 619,500.00	\$ 0.0132	\$ 198,000.00
6	2024	15,000,000	\$ 0.0545	817,500.00	\$ 0.0418	\$ 627,000.00	\$ 0.0127	\$ 190,500.00
7	2025	15,000,000	\$ 0.0545	817,500.00	\$ 0.0423	\$ 634,500.00	\$ 0.0122	\$ 183,000.00
8	2026	15,000,000	\$ 0.0545	817,500.00	\$ 0.0428	\$ 642,000.00	\$ 0.0117	\$ 175,500.00
9	2027	15,000,000	\$ 0.0545	817,500.00	\$ 0.0435	\$ 652,500.00	\$ 0.0110	\$ 165,000.00
10	2028	15,000,000	\$ 0.0545	817,500.00	\$ 0.0443	\$ 664,500.00	\$ 0.0102	\$ 153,000.00
11	2029	15,000,000	\$ 0.0545	817,500.00	\$ 0.0448	\$ 672,000.00	\$ 0.0097	\$ 145,500.00
12	2030	15,000,000	\$ 0.0545	817,500.00	\$ 0.0445	\$ 667,500.00	\$ 0.0100	\$ 150,000.00
13	2031	15,000,000	\$ 0.0545	817,500.00	\$ 0.0458	\$ 687,000.00	\$ 0.0087	\$ 130,500.00
14	2032	15,000,000	\$ 0.0545	817,500.00	\$ 0.0462	\$ 693,000.00	\$ 0.0083	\$ 124,500.00
15	2033	15,000,000	\$ 0.0545	817,500.00	\$ 0.0466	\$ 699,000.00	\$ 0.0079	\$ 118,500.00
16	2034	15,000,000	\$ 0.0545	817,500.00	\$ 0.0477	\$ 715,500.00	\$ 0.0068	\$ 102,000.00
17	2035	15,000,000	\$ 0.0545	817,500.00	\$ 0.0482	\$ 723,000.00	\$ 0.0063	\$ 94,500.00
18	2036	15,000,000	\$ 0.0545	817,500.00	\$ 0.0499	\$ 748,350.00	\$ 0.0046	\$ 69,150.00
19	2037	15,000,000	\$ 0.0545	817,500.00	\$ 0.0498	\$ 747,000.00	\$ 0.0047	\$ 70,500.00
20	2038	15,000,000	\$ 0.0545	817,500.00	\$ 0.0512	\$ 768,000.00	\$ 0.0033	\$ 49,500.00
Total		\$ 16,350,000.00			\$ 13,450,350.00		\$ 2,899,650.00	



**TRAVERSE CITY
LIGHT & POWER**

To: Light & Power Board
From: Daren Dixon, Operations Manager
Date: March 8, 2018
Subject: Project Authorization Request – PC-32 OH East Bay Blvd & East Ave

Staff is requesting authorization from the Board to proceed with development, design, and construction to rebuild 0.98 miles of PC-32 with #336.4 Hendrix aerial spacer cable. This includes adding additional switches to provide more reliability to the water plant and NMC. This work was identified in the 2016 Electric Distribution Study performed by GRP Engineering, Inc. and has been in the TCL&P Six Year Capital Improvements Plan.

Staff recommends Board approval of the project authorization for the PC-32 OH East Bay Blvd & East Ave Project and seeks the necessary Board approvals for expenditures in order to complete the project by August 31, 2018.

If the Board concurs, the following motion is recommended:

**MOVED BY _____, SECONDED BY _____,
THAT THE BOARD APPROVE AS PRESENTED THE PC-32 OH EAST BAY BLVD &
EAST AVE PROJECT AND DIRECTS STAFF TO SOLICIT CONSTRUCTION BIDS AND
MATERIAL QUOTES FOR THE BOARD'S CONSIDERATION OF APPROVAL AFTER
DESIGN COMPLETION.**

PROJECT AUTHORIZATION REQUEST



TRAVERSE CITY
LIGHT & POWER

Project Name: PC-32 OH East Bay Blvd & East Ave

Budgeted in CIP: Yes

Dollar Amount Budgeted: \$350,000

Date of Board Presentation: March 13, 2018

Objective: Target Completion date of August, 2018

Project Description:

Rebuild PC32 overhead line along East Bay Blvd and Eastern Avenue (0.98 miles) with #336.4 Hendrix aerial spacer cable, replacing poles as required, and adding two new switches at the Water Plant & intake. This will improve reliability to two critical customers, including the main services for the Water Plant and NMC. This project was identified in the 2016 Electric Distribution Study prepared by GRP Engineering.

Project Purpose and Necessity:

This overhead primary cable currently is located near heavily wooded areas. The upgrade to Hendrix aerial spacer cable will help insulate the wire and reduce outages caused by incidental tree branch and animal contact. This also replaces aged overhead 336 ACSR which is approaching the end of its life. The installation of the new switches will allow the water plant to stay online in the event of a widespread outage on the PC-32 circuit. This will also improve the reliability of the tie between PC-32 and BW-31.

Project Benefits:

Replacement of aged equipment and protection of the line from incidental tree contact will help reliability in this heavily wooded area.

Alternatives:

Delaying the replacement of this cable and equipment would risk prolonged outages for one of our largest customers.

Timeline:

Design Completion April 13, 2018
Bid Opening May 2, 2018
Construction Start July 9, 2018
Construction End August 31, 2018



PROJECT AUTHORIZATION REQUEST

Financing Methods:

Cash from TCL&P fund balance. Bonding will not be required.

Revenues:

There will be no additional revenues.

Impact on O&M Expenses:

Fewer outages will lead to less after hours call outs. Often with falling branches in wooded areas, linemen are not always able to definitively find the source of the issue so they end up patrolling the lines extensively in search of the problem while the branch causing the problem has fallen to the ground and isn't always the obvious culprit.

Staff Recommendation:

Staff recommends that the Board approve the PC-32 project as presented and to authorize staff to seek competitive bids for construction.

Budget:

Professional Services:	\$30,000.00
Material:	\$100,000.00
Labor:	\$185,000.00
Contingency:	<u>\$35,000.00</u>
Total:	\$350,000.00



**TRAVERSE CITY
LIGHT & POWER**

To: Light & Power Board
From: Daren Dixon, Operations Manager
Date: March 8, 2018
Subject: Project Authorization Request – Critical and Large Customers #2

Staff is requesting authorization from the Board to proceed with development, design, and construction to rebuild approximately 2900' of three phase underground #500 MCM cable and 500' of #2 cable to #750 MCM and #4/0 cable. This includes replacing aged primary metering cabinets. This work was identified in the 2016 Electric Distribution Study performed by GRP Engineering, Inc. and has been in the TCL&P Six Year Capital Improvements Plan.

Staff recommends Board approval of the project authorization for the Critical and Large Customers #2 Project and seeks the necessary Board approvals for expenditures in order to complete the project by August 31, 2018.

If the Board concurs, the following motion is recommended:

**MOVED BY _____, SECONDED BY _____,
THAT THE BOARD APPROVE AS PRESENTED THE CRITICAL AND LARGE
CUSTOMER #2 PROJECT AND DIRECTS STAFF TO SOLICIT CONSTRUCTION BIDS
AND MATERIAL QUOTES FOR THE BOARD'S CONSIDERATION OF APPROVAL
AFTER DESIGN COMPLETION.**

PROJECT AUTHORIZATION REQUEST



TRAVERSE CITY
LIGHT & POWER

Project Name: Critical and Large Customers #2

Budgeted in CIP: Yes

Dollar Amount Budgeted: \$600,000

Date of Board Presentation: March 13, 2018

Objective: Target Completion date of August, 2018

Project Description:

Replacement of approximately 2900' of three-phase 500kCM copper direct buried primary underground cable on the PC-30 circuit with new 750kCM copper cable in conduit, 500' three-phase direct buried 2 aluminum primary with 4/0 aluminum primary in conduit, three primary metering cabinets, three sectionalizing cabinets, and two PME switch gears.

Project Purpose and Necessity:

The primary cable providing service to one of TCL&P's largest industrial customers is near the end of its useful life and thus nearing failure. It is also direct buried which will lead to long outages if it needs to be repaired or replaced. The new cable would be installed in conduit so a new section could be quickly replaced in the event of a failure of the cable. This project will also replace three primary metering cabinets with a newer version that meets our new standards, which provides additional safety for our crews to work on. This project also includes replacing approximately 55' of customer owned 4/0 copper primary with 750kCM copper primary, which will be billed to the customer. The project is timed to coordinate with a large customer's shutdown of operation; doing this project at any other time would be extremely disruptive to the customer.

Project Benefits:

Replacement of aged equipment helps reliability. Decreased potential outage time due to conduit installations. Greater safety, higher capacity, and more versatile primary metering cabinets.

Alternatives:

Delaying the replacement of this cable and equipment would risk prolonged outages for one of our largest customers.

Timeline:

Long Lead Time Material Ordering March 13, 2018

Bid Opening April 30, 2018



PROJECT AUTHORIZATION REQUEST

Construction Start May 9, 2018

Construction End July 9, 2018

Financing Methods:

Cash from TCL&P fund balance. Bonding will not be required.

Revenues:

Customer will be billed approximately \$6,500 for upgrading their facilities.

Impact on O&M Expenses:

There are no reductions in O&M expenses in the near future. However, existing cable failure could result in expensive O&M repair costs.

Staff Recommendation:

Staff recommends that the Board approve the Critical and Large Customers #2 project as presented and to authorize staff to seek competitive bids for construction.

Budget:

Professional Services:	\$66,121.80
Material:	\$279,702.51
Labor:	\$161,109.50
Contingency:	<u>\$66,121.80</u>
Total:	\$573,055.61



**TRAVERSE CITY
LIGHT & POWER**

To: Light & Power Board
From: Daren Dixon, Manager of Operations
Date: March 7, 2018
Subject: Underground Power Cable Purchase

The Board is being presented with the Critical and Large Customer Improvements #2 Project Authorization Request (Project) earlier in the agenda. This Project is being undertaken to replace aging primary cable and primary metering cabinets to meet new utility standards. Staff issued a Request for Proposals for the underground power cable and bids were received as follows:

<u>Vendor</u>	<u>Price</u>
Anixter	\$ 141,375.00
Power Line Supply	\$ 138,852.00
RESCO	\$ 183,048.00
WESCO	\$ 139,756.80

Staff is recommending TCL&P accept the low bid from Power Line Supply and issue a purchase order in the amount of \$138,852. The recommended bid is in line with approved project costs.

If after Board discussion you agree with staff's recommendation, the following motion is recommended:

MOVED BY _____, SECONDED BY _____,
THAT THE BOARD AUTHORIZES THE EXECUTIVE DIRECTOR TO ISSUE A
PURCHASE ORDER TO POWER LINE SUPPLY IN THE AMOUNT OF \$138,852 FOR
UNDERGROUND POWER CABLE, PLUS OR MINUS DEPENDENT ON
COMMODITY PRICES DAY OF SHIPMENT, TO BE USED FOR THE CRITICAL
AND LARGE CUSTOMER IMPROVEMENTS #2 PROJECT.



TRAVERSE CITY
LIGHT & POWER

March 8, 2018

RE: Central High School Solar Project

After an in-depth presentation to our staff by these Martin Chown and Elliott Smith, TCL&P decided this solar project at Central High School fits in perfectly with our Energy Waste Reduction program. The educational pieces that will be put in place after the installation of the solar panels creates a hands on approach to alternative energy sources that will be used for years to come. In addition, the ability to educate children on the benefits of solar power while being able to see it in operation will create an experience that not all children have an opportunity to see. For these reasons, we are using our entire budget of \$15,000 from the Commercial and Industrial education budget within our Energy Waste Reduction program.

Traverse City Light and Power also has a Commercial and Industrial Pilot budget within the Energy Waste Reduction program that helps fund innovative, energy saving projects. The use of the solar panels, while not a new technology, is a sought after alternative energy source. From this fund TCL&P is offering an additional \$10,000.00 to help fund this project.

While alternative energy sources are a hot topic among all utilities and governments across the globe, Martin and Elliott have added an educational piece that is just as important as the panels themselves. Traverse City Light and Power is proud to donate a total of \$25,000 to this project.

Sincerely,

Jacob Hardy
Energy Technician

CHS Solar Project

By Martin Chown and Elliott Smith, representing CHS's
SEA (Students for Environmental Advocacy) Club

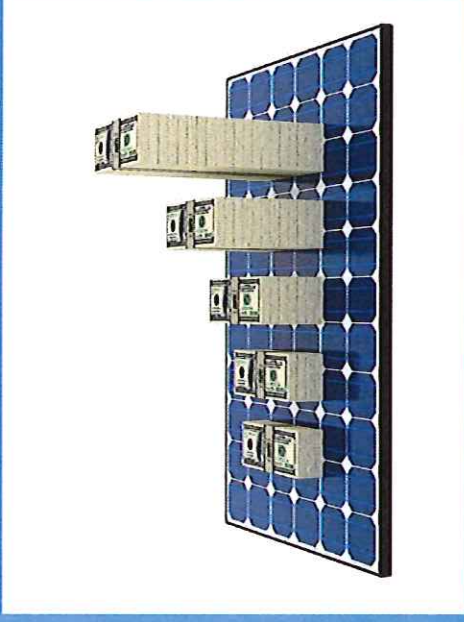
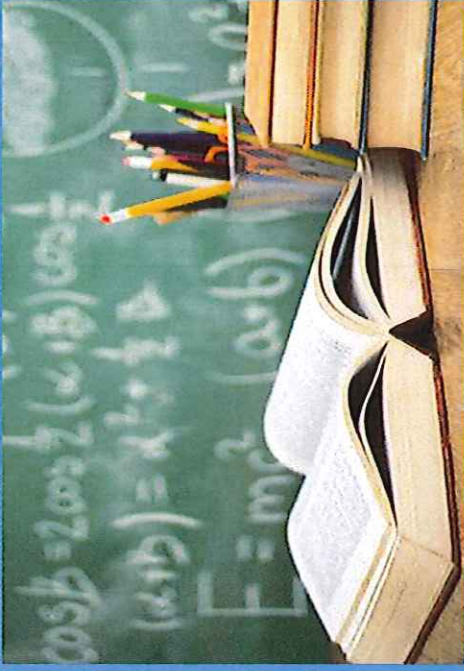
SEA Club

- Environmental activism club addressing ecological issues from the local to national level
- Lobbied Congress concerning climate change
- Pursuing sustainable solutions at CHS



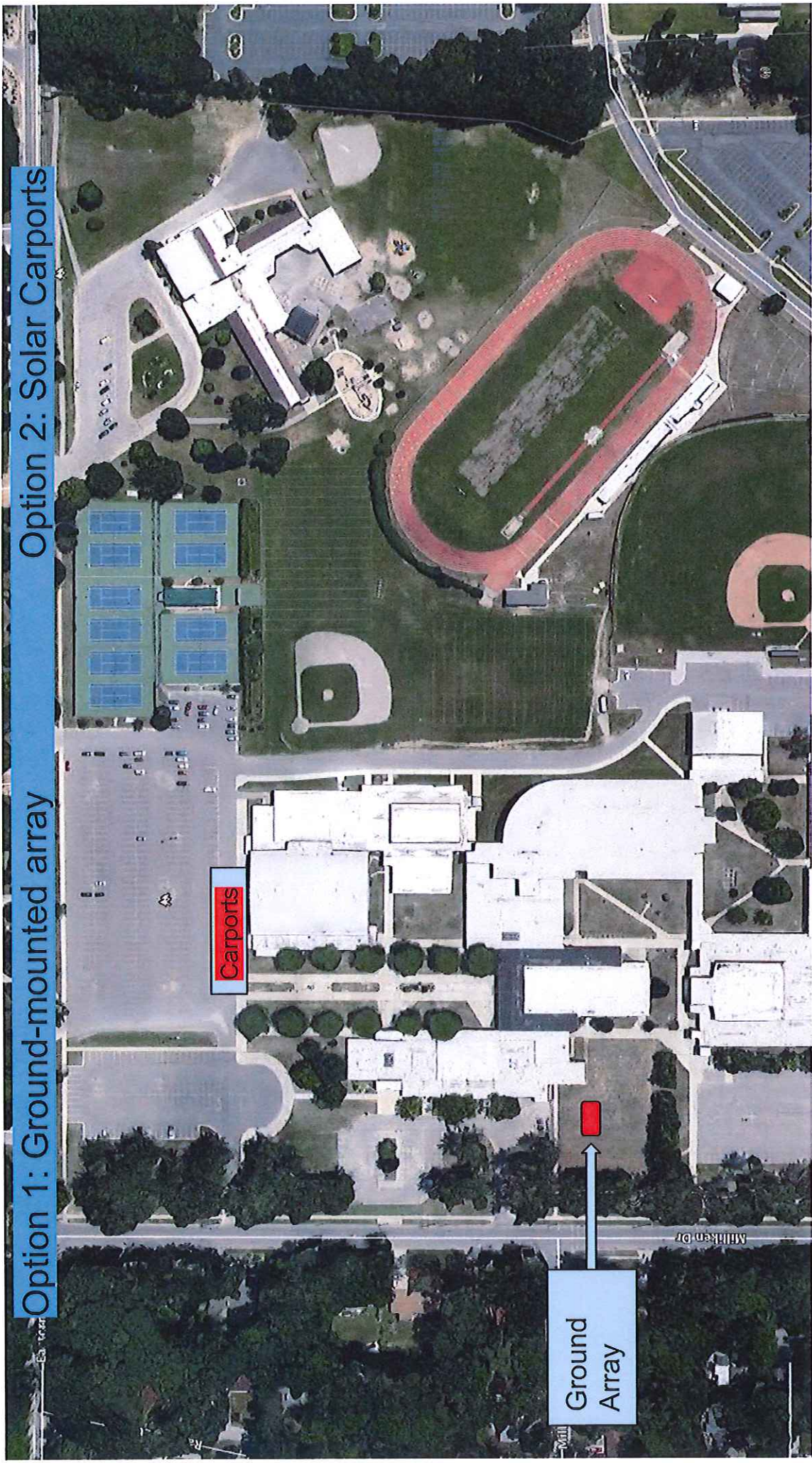
Solar Project Overview

- Project began December 2016
- 20 kW array
- 2 options for installation
- Educational, financial, and environmental benefits



Option 2: Solar Carports

Option 1: Ground-mounted array



Option 1: Ground-mounted array

Located in the open space on the west side of campus between the Library and Milliken Drive.

Pros:

- More visible to Public (driving by on Milliken)
- Greater possibility for hands on learning interactions with students

Cons:

- Not quite as visible to student population



Option 2: Solar carports

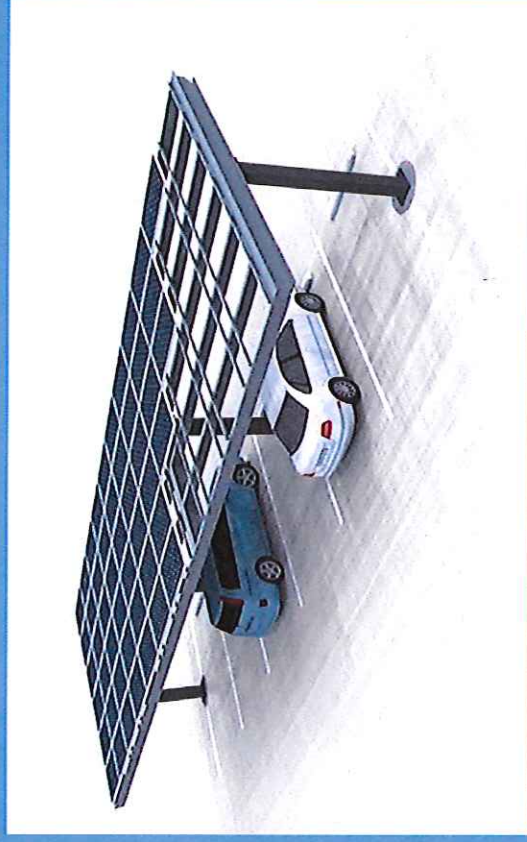
Located in the parking lot south of the main gym

Pros:

- Students could park under them and would drive by them everyday
- Don't take up campus space

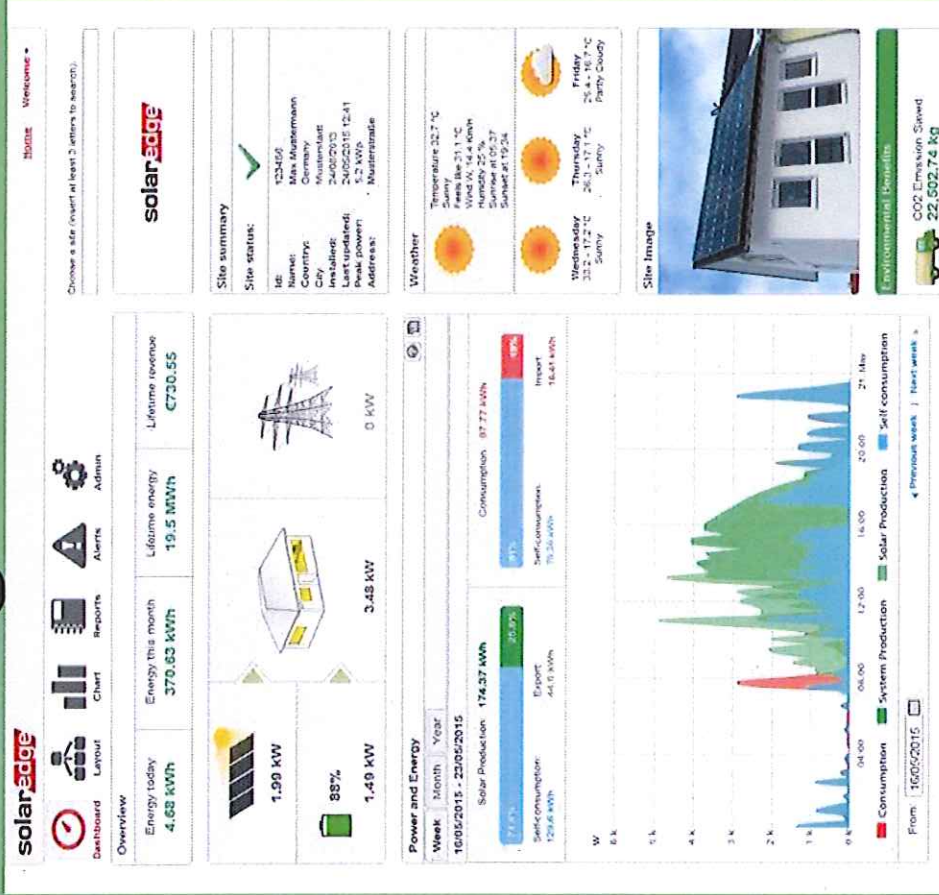
Cons:

- More expensive (by about \$13,700)



Educational Integration

- Incorporated into SCI-MA-TECH and Environmental Science curriculum
- Website-based monitoring program
- Hands on experience for CHS, EES, and possibly NMC students



Environmental Benefits

- Solar array would offset about 20 tons of CO2 per year
- Equivalent to planting 992 trees per year
- Supports the Traverse City Commission's resolution to be 100% powered by renewable energy by 2050



Finances

- We will work with TCAPS and PIE representatives to pursue donors/grants consistent with TCAPS procedures.
- Project is scalable depending on the amount of money we raise

Expenses for 20 kW Carport	Cost	Expenses for 20 kW Ground Mount	Cost
Panels and Installation (\$4/watt)	\$80,000.00	Panels and Installation (\$3.40/watt)	\$66,300.00
Solar Energy Curriculum Materials	\$2,000.00	Solar Energy Curriculum Materials	\$2,000.00
Electrical Engineering	\$1,500.00	Electrical Engineering	\$1,500.00
IT Costs, Display and Software	\$1,500.00	IT Costs, Display and Software	\$1,500.00
Plaque Explaining Project	\$1,500.00	Plaque Explaining Project	\$1,500.00
Net Metering Application Fee	\$100.00	Net Metering Application Fee	\$100.00
Maintenance	\$2,000.00	Maintenance	\$2,000.00
Total Cost (not paid by TCAPS)	\$88,600.00	Total Cost (not paid by TCAPS)	\$74,900.00
Total Payback (Offset power at \$.13/kWh over 25 years)	\$76,800.00	Total Payback (Offset power at \$.13/kWh over 25 years)	\$76,800.00

Timeline (subject to change)



1. Secure Executive Team approval (January 2018)
2. Start fundraising, write RFP (January - April 2018)
3. Select solar contractor and present to TCAPS' Board of Finance (April 2018)
4. Start installation of the array (May 2018)
5. Complete installation (Summer 2018)

Thank you!

Donations are welcome!



**TRAVERSE CITY
LIGHT & POWER**

To: Light & Power Board
From: Karla Myers-Beman, Controller
Date: March 1, 2018
Subject: Electric Fund Budget

Enclosed for your review is the proposed 2018-19 Electric Fund budget with a supplemental payroll spreadsheet and six year forecasted cash flow for discussion at the Regular Meeting scheduled for March 13, 2018. Overall, the fund remained relatively status quo with a few exceptions described below.

❖ **REVENUES**

Utility Sales

The amount of kWh's used for projected 2017-18 retail sales was calculated by taking actual sales through January 31, 2018 and taking last year's consumption from February 1 through June 30, 2018 and increasing it by 1% for expected load increase. The retail sales for the 2018-19 fiscal year was forecasted at 3% over projected sales. The explanation of the 3% is below:

- Account for annual load growth, while taking into consideration reduction of energy savings through the energy waste reduction program (1%).
- Compensate for the mild summer, which is approximately 8 million kWh less than the prior year as of the end of January (2%).

The retail sales kWh consumption was then compared to the modeling performed by Michigan Public Power Agency ("MPPA") which takes into consideration weather patterns (heating and cooling days), economy, population characteristics, and past history consumption. Staff analyzed the retail sales kWh consumption to MPPA's forecasted wholesale purchases, it provided a little over 1.41% line loss for projected and 5.38% for budget, both within electric utility industry standards.

The average power cost recovery rate for 2016-17 was \$(.001) per kWh and increased to \$(0.00) per kWh for projected 2017-18 and then decreased back to \$(.001) per kWh for budgeted 2018-19 fiscal year. This rate is based on the 12 month rolling average and follows the purchase power per kWh cost.

❖ **EXPENSES**

Payroll

Staff continues to provide transparent information on salaries and wages/fringe benefits by providing a supplemental sheet showing the actual salaries and wages/fringe benefits by department and the reclassifications that are made in/out of that department along with the full time equivalents (FTE). The amount of salaries and wages/fringe benefits shown on the budget statements is the net amount reflected in the payroll supplemental sheet as Net Wages/Fringe Benefits Reported. There are many reclassifications that occur during the year that include salaries and wages/fringe benefits being transferred to the Kalkaska Combustion Turbine, Energy Optimization, employees working for other departments or work orders that are capital in nature, and GASB 68 adjustments.

Staff is continuing with the Board direction on the 8-year amortization schedule to increase our funding percentage regarding unfunded pension liabilities. Going forward with the 8-year amortization will be an additional \$1.15M in cash outlay beyond the normal contribution requirement to MERS. In May/June 2018, the new December 31, 2017 actuarial report will be published accounting for a full year of accelerated payments.

The pension expense calculation has driven the cost of fringe benefits. In 2016-17, 2017-18 projected and 2018-19, the pension expense is calculated in accordance with GASB 68. In fiscal year 2016-17 the pension expense was approximately \$2,000,000 while normal contributions would range from \$900,000 to \$1,000,000; pension expense lowers in projected and budgeted column to \$1,800,000 resulting from favorable interest earnings. This expense will continually decrease as the investment portion of assets held in trust increase through higher contributions and with continuation of favorable interest earnings.

On the payroll statement, there are several deviations from current year budget to current year projection for the 2017-18 budget, which mostly consist of changes caused by terminations of employment causing vacancies and filling previous year's vacancies. In addition, a FTE was added for 2018-19 in the Distribution Department to allow an employee to be dedicated to the Combustion Turbine and another to Facilities with both assisting the Line Department on jobs instead of having this as a combined position.

Purchase Power Expense

Purchase power expense for the actual 2016-17 year was \$65.30 per kWh, projected costs for the 2017-18 fiscal year came in at \$62.36 per kWh, and budgeted for the 2018-19 fiscal year is \$62.10 per kWh. The primary cause of the decrease in purchase power expense was the elimination of the Belle River Project Debt Service.

❖ **VARIATIONS IN REVENUES AND EXPENSES**

Throughout the budget, statements there were significant variations explained below:

Merchandising and Jobbing

Increased in the projected column relating to the completion of the Immaculate Conception Project for the new catholic school which was invoiced at approximately \$30,000.

MISO Income

Decreased in the budget column regarding discussions that the rate of return may decrease again from 10.32% down to the 9% range.

Software and Hardware

All of these accounts within the departments were consolidated into its own department, Information Systems. This new department will reflect all of the utility's expenditures relating to information systems allowing for greater transparency of this activity. A pro forma of the department financials looking backwards is provided in your packet.

Substation

Increased under the projected column reflecting the recently approved contract for Substation Maintenance.

Reimbursements

Reflects reimbursements relating to the M-72 and Cherry Capital Airport Runway Expansion Projects.

Special Item

Reflects the write-off of the current meters in service replaced through the AMI Capital Project.

❖ **OPERATING INCOME**

The utility's target operating income should cover the depreciation expense and the inflationary cost to replace those assets often referred to as the rate of return on investment. This calculation is taking the net book value times the calculated rate of return and is close to \$3,000,000. Currently, the operating income is below the target operating income. This provides information that the utility will need to do a rate increase in the future when the cash balances decrease over time.

❖ **CASH FLOW**

Overall, cash flow shows the utility being in compliance with the utility's cash reserve policy and that overall cash balance will decline with the completion of the AMI Project, which is a significant project beyond the normal scope of utility's capital projects. A rate increase is planned to occur in the 2019-20 fiscal year to maintain funding for operations and capital projects to allow the utility to continue providing reliable service to our customers.

City of Traverse City, Michigan
TRAVERSE CITY LIGHT & POWER DEPARTMENT
 2018-19 Budgeted Revenues and Expenses Summary

	FY 15/16 Actual	FY 16/17 Actual	FY 17/18 Budget	FY 17/18 Projected	FY 18/19 Recommended
Operating Income:	\$ 35,530,044	\$ 34,513,531	\$ 36,065,200	\$ 34,167,200	\$ 34,171,700
Operating Expenses:					
Purchase Power Expenses:					
Capacity	\$ 465,421	\$ 693,921	\$ 810,000	\$ 810,700	\$ 673,000
Purchased Power - MISO	3,766,366	613,006	2,640,000	550,000	2,311,400
Purchased Power - Lansing BWL	2,898,085	-	-	-	-
Stoney Corners - Wind Energy	2,940,041	3,115,585	3,170,000	2,930,000	3,152,000
Combustion Turbine Power Cost	3,338,292	4,254,812	4,500,000	4,415,000	4,541,200
Campbell #3 Power Cost	3,793,717	3,834,696	4,522,500	4,010,000	4,402,000
Belle River #1 Power Cost	3,749,902	4,062,954	3,800,000	2,980,000	1,988,000
Landfill Gas - Granger Project	567,834	858,858	980,000	940,000	930,000
M-72 Wind Turbine	35,056	27,551	48,000	30,000	30,000
M-72 Solar	-	-	-	82,000	128,000
Pegasus Wind	-	-	-	-	260,000
Bilateral Contracts	1,100,866	4,252,243	3,300,000	4,424,000	2,432,000
Other Generation Expenses	414,424	418,943	329,050	187,000	250,575
Total Purchase Power Expenses	23,070,004	22,132,569	24,099,550	21,358,700	21,098,175
Distribution Expenses:					
Operations & Maintenance	4,424,951	3,800,057	4,261,500	4,014,425	4,319,950
Transmission Expenses:					
Operations & Maintenance	421,135	444,502	525,100	434,735	471,400
Other Operating Expenses:					
Metering & Customer Accounting	577,278	501,210	561,550	509,900	501,000
Conservation & Public Services	671,545	466,506	593,000	491,550	569,300
Information Systems	-	-	-	-	480,650
Administrative & General	986,037	1,258,666	1,276,100	1,249,400	981,900
Insurance	62,001	73,530	70,720	75,000	87,625
Depreciation Expense	2,254,188	2,511,527	2,605,000	2,605,000	2,700,000
City Fee	1,784,900	1,729,139	1,820,000	1,716,000	1,712,200
Total Other Operating Expenses	6,335,949	6,540,578	6,926,370	6,646,850	7,032,675
Total Operating Expenses	34,252,039	32,917,706	35,812,520	32,454,710	32,922,200
Operating Income	\$ 1,278,005	\$ 1,595,825	\$ 252,680	\$ 1,712,490	\$ 1,249,500
Non Operating Revenues/(Expenses):					
Non Operating Revenues	737,684	297,670	555,800	1,086,000	539,400
Non Operating Expenses	(355,965)	(5,965)	-	-	-
Total Non Operating Revenue	381,719	291,705	555,800	1,086,000	539,400
Special Item					
Retirement of meters	-	-	-	-	(725,000)
OTHER FINANCING SOURCES:					
Transfers in	175,000	125,000	125,000	125,000	175,000
Change in Net Position	\$ 1,834,724	\$ 2,012,530	\$ 933,480	\$ 2,923,490	\$ 1,238,900

City of Traverse City, Michigan
TRAVERSE CITY LIGHT & POWER
 2018-19 Budgeted Revenues and Expenses

	FY 15/16 Actual	FY 16/17 Actual	FY 17/18 Budget	FY 17/18 Projected	FY 18/19 Recommended
OPERATING REVENUES:					
Residential Sales	\$ 6,090,231	\$ 6,121,779	\$ 6,400,000	\$ 5,960,000	\$ 6,035,000
Commercial Sales	15,348,675	14,832,506	15,560,000	14,700,000	14,800,000
Industrial Sales	9,615,567	9,594,935	10,050,000	9,580,000	9,670,000
Public Authority Sales	309,162	299,780	300,000	280,000	285,000
Street Lighting Sales	203,949	209,592	225,000	225,000	225,000
Yard Light Sales	98,529	106,527	155,000	144,000	144,000
Total Utility Sales	31,666,113	31,165,119	32,690,000	30,889,000	31,169,000
Forfeited Discounts	60,777	50,712	60,000	50,000	50,000
Merchandise and Jobbing	231,826	91,528	70,000	124,000	73,500
Recovery of Bad Debts	26	151	200	200	200
Sale of Scrap	41,792	26,911	35,000	65,000	50,000
Miscellaneous Income	41,663	38,154	39,500	37,000	37,000
Refunds and Rebates	4,795	17,335	500	2,000	2,000
MISO Revenue	3,483,052	3,123,621	3,170,000	3,000,000	2,800,000
TOTAL OPERATING REVENUES	\$ 35,530,044	\$ 34,513,531	\$ 36,065,200	\$ 34,167,200	\$ 34,171,700
OPERATING EXPENSES:					
PURCHASE POWER					
Salaries and Wages	\$ 123,124	\$ 101,437	\$ 62,000	\$ (14,600)	\$ 12,500
Fringe Benefits	192,648	195,024	142,700	67,500	107,500
Wind Generation - Traverse	-	-	-	-	-
Trap and Transfer	-	-	250	250	250
Union Street Fish Ladder	-	-	250	250	250
Kalkaska Combustion Turbine	-	5,613	-	-	-
Operation Supplies	-	-	1,000	1,000	1,000
Software and Hardware	-	100	-	300	-
Capacity Purchases	465,421	693,921	810,000	810,700	673,000
Purchased Power - MISO Market	3,766,366	613,006	2,640,000	550,000	2,311,400
Bilateral Contracts (offsetting MISO Market)	1,100,866	4,252,243	3,300,000	4,424,000	2,432,000
Purchased Power - LBWL	2,898,085	-	-	-	-
Combustion Turbine Power Cost	3,338,292	4,254,812	4,500,000	4,415,000	4,541,200
Campbell #3 Power Cost	3,793,717	3,834,696	4,522,500	4,010,000	4,402,000
Belle River #1 Power Cost	3,749,902	4,062,954	3,800,000	2,980,000	1,988,000
Stoney Corners - Wind Energy	2,940,041	3,115,585	3,170,000	2,930,000	3,152,000
Landfill Gas - NANR & Granger Project	567,834	858,858	980,000	940,000	930,000
M72 Wind Turbine	35,056	27,551	48,000	30,000	30,000
M72 Solar	-	-	-	82,000	128,000
Pegasus Wind	-	-	-	-	260,000
Total Purchase Power	22,655,580	21,713,626	23,770,500	21,171,700	20,847,600
Purchased Power Cost as % of Sales	71.55%	69.67%	72.71%	68.54%	66.91%
Coal Dock	2,842	-	-	-	-
Communications	170	171	250	300	300
Meal Payments	-	-	200	-	-
Safety	2,994	2,415	3,500	3,500	3,500
Tools	-	-	500	500	500
Professional and Contractual	85,029	100,384	96,000	93,500	93,500
Transportation	6,316	6,449	7,000	7,000	7,500
Professional Development	-	175	500	1,500	1,500
Uniforms	3,456	3,325	3,500	3,000	4,275
Vehicle Rentals	(3,308)	3,820	11,400	23,000	18,000
Miscellaneous	1,153	30	-	-	-
Total Purchase Power	23,070,004	22,132,569	24,099,550	21,358,700	21,098,175
DISTRIBUTION OPERATION & MAINTENANCE:					
Salaries and Wages	1,226,717	1,098,243	1,213,000	1,218,025	1,458,550
Fringe Benefits	1,611,956	1,543,663	1,616,000	1,425,800	1,528,400
Office Supplies	3,160	4,775	4,000	2,000	4,000
Operation Supplies	51,121	36,148	40,000	40,000	40,000
Utilities	44,244	52,728	51,000	54,000	56,000
Meals and Payments	3,231	2,443	5,000	2,800	3,000
Communications	33,987	24,077	61,500	48,000	98,200

City of Traverse City, Michigan
TRAVERSE CITY LIGHT & POWER
 2018-19 Budgeted Revenues and Expenses

	FY 15/16 Actual	FY 16/17 Actual	FY 17/18 Budget	FY 17/18 Projected	FY 18/19 Recommended
Software and Hardware	74,618	95,078	191,400	100,000	-
Substation	70,618	103,743	120,000	270,000	150,000
Overhead Lines	170,363	222,665	205,000	212,800	217,700
Load and Dispatching	25,000	25,991	31,500	32,300	34,100
Storm Damage Contingency	448,383	-	50,000	-	50,000
Underground Lines	97,922	54,830	30,000	50,000	30,000
Electric Meters	2,624	2,933	6,000	4,000	4,000
Street Lighting	217,587	212,558	230,000	225,000	230,000
Traffic Signal Oper. & Maint.	1,767	4,952	5,000	5,000	5,000
Radio Equipment	3,244	9,860	5,000	2,500	2,500
Plant & Structures	94,302	81,830	82,000	80,800	75,000
Safety	27,538	29,578	38,000	30,000	35,000
Tools	14,969	23,372	31,000	20,000	15,000
Uniforms	22,218	20,672	25,000	21,000	24,000
Professional and Contractual	139,050	84,768	94,000	62,000	82,000
Rent Expense	1,757	-	2,000	2,000	2,000
Professional Development	28,861	47,176	65,000	48,000	55,000
Printing and Publishing	4,110	4,948	4,000	4,000	4,500
Transportation	23,796	23,742	28,000	30,500	32,000
Vehicle Rentals	(23,539)	(12,567)	16,600	8,900	69,000
Miscellaneous	1,673	2,633	1,500	5,000	5,000
Inventory Adjustments	3,674	(782)	10,000	10,000	10,000
Total Distribution O & M	4,424,951	3,800,057	4,261,500	4,014,425	4,319,950
<u>TRANSMISSION OPERATIONS & MAINTENANCE:</u>					
Salaries and Wages	232,813	219,225	294,100	222,000	235,000
Fringe Benefits	409	2,503	3,500	4,000	4,000
Substation	14,496	45,927	50,000	75,000	82,000
Overhead Lines	76,567	33,623	23,000	20,000	25,000
Load and Dispatching	-	10,259	13,500	12,735	14,400
MISO Transmission	32,494	38,466	36,000	36,000	41,000
Tools	-	-	9,000	-	-
Professional and Contractual	-	-	15,000	-	5,000
Vehicle Rentals	223	2,242	3,000	1,000	1,000
Miscellaneous-MPPA Transmission Project	64,133	55,289	78,000	64,000	64,000
Inventory Adjustments	-	36,968	-	-	-
Total Transmission O & M	421,135	444,502	525,100	434,735	471,400
<u>METERING & CUSTOMER ACCOUNTING:</u>					
Salaries and Wages	273,710	251,092	263,700	245,800	248,000
Fringe Benefits	190,106	155,678	164,600	135,300	133,100
Office Supplies	3,610	1,737	4,200	4,000	4,000
Operations Supplies	-	-	-	200	200
Communications	110	50	250	200	200
Hardware/Software	22	1,350	8,000	3,800	-
Meal Payments	-	20	200	100	100
Safety	4,990	1,610	3,500	4,000	4,000
Uniforms	1,826	3,188	3,000	3,000	3,000
Professional and Contractual	23,893	18,509	13,000	27,000	24,000
Postage	28,185	16,575	33,000	30,000	30,000
Uncollectable Accounts	1,739	7,690	10,000	7,800	5,000
Collection Costs	4,118	3,669	5,000	4,000	4,000
Data Processing	20,197	15,890	25,000	20,000	20,000
Transportation	2,344	2,127	4,500	4,000	4,200
Professional Development	1,124	1,494	5,000	2,500	2,500
Printing and Publishing	684	62	4,000	1,000	1,000
Vehicle Rentals	19,666	19,422	14,000	16,000	16,500
Miscellaneous	954	1,047	600	1,200	1,200
Total Customer Accounting	577,278	501,210	561,550	509,900	501,000
<u>CONSERVATION & PUBLIC SERVICES:</u>					
Salaries and Wages	22,481	12,470	13,300	45,000	60,000
Fringe Benefits	34,637	9,887	9,700	21,950	27,100

City of Traverse City, Michigan
TRAVERSE CITY LIGHT & POWER
 2018-19 Budgeted Revenues and Expenses

	FY 15/16 Actual	FY 16/17 Actual	FY 17/18 Budget	FY 17/18 Projected	FY 18/19 Recommended
Office Supplies	-	-	-	1,000	1,000
Professional and Contractual	4,011	20,916	1,500	1,100	1,500
Contract Labor - Energy Optimization	30,948	-	-	-	-
Public Service & Communications	32,653	17,940	22,000	10,000	25,900
Community Services	32,240	35,960	35,000	25,000	48,500
Professional Development	-	498	-	1,000	3,800
Printing and Publishing	-	49	-	1,500	1,500
Vehicle Rentals	3,943	8,670	6,500	5,000	5,000
PA295 Energy Optimization Compliance	510,632	360,116	505,000	380,000	395,000
Total Conservation & Public Services	671,545	466,506	593,000	491,550	569,300
<u>INFORMATION SYSTEMS</u>					
Salaries and Wages	-	-	-	-	142,000
Fringe Benefits	-	-	-	-	128,800
Office Supplies	-	-	-	-	1,000
Operation Supplies	-	-	-	-	10,100
Communications	-	-	-	-	2,000
Software	-	-	-	-	121,250
Hardware	-	-	-	-	20,000
Professional and Contractual	-	-	-	-	50,000
Professional Development	-	-	-	-	5,500
Total Information Systems	-	-	-	-	480,650
<u>ADMINISTRATIVE AND GENERAL:</u>					
Salaries and Wages	386,497	517,101	515,700	527,000	401,100
Fringe Benefits	322,167	462,158	474,100	464,800	305,600
Office Supplies	5,973	11,307	6,000	7,000	7,000
Communications	3,909	6,452	4,400	10,000	6,000
Software and Hardware	18,579	24,100	15,000	15,600	-
Fees and Per Diem	67,613	64,601	70,000	65,000	66,700
Board Related Expenses	3,872	2,659	15,000	3,000	5,000
Professional & Contractual	82,759	73,293	67,400	77,500	76,500
Legal Services	57,950	57,112	65,000	50,000	75,000
Employee Appreciation	7,073	7,195	7,000	5,000	7,000
City Fee	1,784,900	1,729,139	1,820,000	1,716,000	1,712,200
Transportation	619	326	1,500	1,500	1,500
Professional Development	15,985	21,890	25,000	12,000	19,500
Printing & Publishing	4,682	4,733	5,000	5,000	5,000
Insurance and Bonds	62,001	73,530	70,720	75,000	87,625
Miscellaneous	8,359	5,739	5,000	6,000	6,000
Depreciation Expense	2,254,188	2,511,527	2,605,000	2,605,000	2,700,000
Total Administrative and General	5,087,126	5,572,862	5,771,820	5,645,400	5,481,725
Total Operating Expenses	34,252,039	32,917,706	35,812,520	32,454,710	32,922,200
Operating Income	\$ 1,278,005	\$ 1,595,825	\$ 252,680	\$ 1,712,490	\$ 1,249,500
<u>NON OPERATING REVENUES/(EXPENSES):</u>					
Rents and Royalties	\$ 44,387	\$ 38,880	\$ 46,500	\$ 51,000	\$ 53,400
Pole Rentals	48,860	65,866	68,000	79,000	81,000
Reimbursements	296,244	236,776	91,300	703,000	150,000
Interest & Dividend Earnings	348,193	(43,852)	350,000	250,000	250,000
Gain/(Loss) on Sale of Fixed Assets	(355,965)	(5,965)	-	3,000	5,000
Total Non Operating Revenue/(Expenses)	381,719	291,705	555,800	1,086,000	539,400
Income before special items	1,659,724	1,887,530	808,480	2,798,490	1,788,900
<u>SPECIAL ITEM</u>					
Retirement of meters	-	-	-	-	(725,000)
Change in Net Position before Transfers	\$ 1,659,724	\$ 1,887,530	\$ 808,480	\$ 2,798,490	\$ 1,063,900

City of Traverse City, Michigan
TRAVERSE CITY LIGHT & POWER
 2018-19 Budgeted Revenues and Expenses

	FY 15/16 Actual	FY 16/17 Actual	FY 17/18 Budget	FY 17/18 Projected	FY 18/19 Recommended
<u>OTHER FINANCING SOURCES:</u>					
Operating Transfers In	175,000	125,000	125,000	125,000	175,000
Change in Net Position	<u>\$ 1,834,724</u>	<u>\$ 2,012,530</u>	<u>\$ 933,480</u>	<u>\$ 2,923,490</u>	<u>\$ 1,238,900</u>

Traverse City Light and Power
 Payroll Supplemental Spreadsheet
 March 2018

	2015-16	2016-17	2017-18		2018-19
	Actual	Actual	Budget	Projected	Budget
Purchase Power Department					
Wages	291,524.48	247,321.76	276,406.69	284,860.76	295,974.32
Fringe Benefits	171,766.62	313,916.76	347,492.50	412,949.70	435,487.59
Subtotal	463,291.10	561,238.52	623,899.19	697,810.46	731,461.91
Reclassifications	(147,519.17)	(264,777.91)	(419,311.35)	(645,907.90)	(613,414.46)
Net Wages/Fringe Benefits Reported	315,771.93	296,460.61	204,587.84	51,902.56	118,047.45
TCLP FTE's	3.00	3.00	3.00	3.00	3.00
Distribution Operation and Maintenance Department					
Wages	1,925,399.17	1,718,803.68	1,958,301.03	1,803,124.59	2,055,937.57
Fringe Benefits	1,182,241.80	1,979,012.48	2,166,927.45	2,142,912.21	2,207,843.71
Subtotal	3,107,640.97	3,697,816.16	4,125,228.48	3,946,036.80	4,263,781.28
Reclassifications	(299,800.95)	(1,053,531.17)	(1,306,217.05)	(1,304,461.57)	(1,277,852.25)
Net Wages/Fringe Benefits Reported	2,807,840.02	2,644,284.99	2,819,011.43	2,641,575.23	2,985,929.03
TCLP FTE's	24.15	21.66	24.25	21.50	24.00
Transmission Operation and Maintenance Department					
Reclassifications	263,826.04	221,728.64	297,600.00	225,532.97	238,157.37

Traverse City Light and Power
Payroll Supplemental Spreadsheet
March 2018

	2015-16	2016-17	2017-18		2018-19
	Actual	Actual	Budget	Projected	Budget
Metering and Customer Accounting Department					
Wages	288,124.42	260,227.51	267,622.87	251,769.16	259,170.20
Fringe Benefits	134,258.79	172,388.40	176,436.68	152,509.87	146,963.88
Subtotal	422,383.21	432,615.91	444,059.55	404,279.03	406,134.08
Reclassifications	41,433.24	(25,845.20)	(16,681.17)	(17,888.90)	(27,099.53)
Net Wages/Fringe Benefits Reported	463,816.45	406,770.71	427,378.38	386,390.13	379,034.55
TCLP FTE's	2.50	2.00	2.00	2.13	1.50
Total City FTE's	3.00	3.00	2.90	2.90	3.00
Conservation and Public Services Department					
Wages	35,129.17	-	-	64,884.77	89,197.66
Fringe Benefits	15,141.68	-	-	27,446.38	37,774.08
Subtotal	50,270.85	-	-	92,331.15	126,971.74
Reclassifications	6,848.14	22,204.33	23,000.00	(26,569.65)	(44,214.98)
Net Wages/Fringe Benefits Reported	57,118.99	22,204.33	23,000.00	65,761.50	82,756.76
TCLP FTE's	0.50	-	-	0.75	1.00
Information Systems Department					
Wages	-	-	-	-	168,604.03
Fringe Benefits	-	-	-	-	149,337.33
Subtotal	-	-	-	-	317,941.36
Reclassifications	-	-	-	-	(48,199.07)
Net Wages/Fringe Benefits Reported	-	-	-	-	269,742.29
TCLP FTE's	-	-	-	-	1.90

Traverse City Light and Power
Payroll Supplemental Spreadsheet
March 2018

	2015-16	2016-17	2017-18		2018-19
	Actual	Actual	Budget	Projected	Budget
Administrative and General Department					
Wages	386,497.05	540,175.42	548,223.32	553,123.85	400,741.14
Fringe Benefits	192,266.65	492,984.13	495,379.87	556,950.03	353,178.56
Subtotal	578,763.70	1,033,159.55	1,043,603.19	1,110,073.88	753,919.70
Reclassifications	129,900.57	(53,900.43)	(56,037.42)	(120,882.67)	(51,082.51)
Net Wages/Fringe Benefits Reported	708,664.27	979,259.12	987,565.77	989,191.21	702,837.19
TCLP FTE's	4.00	5.90	5.90	5.90	4.00
Fiber Fund					
Wages	11,008.61	70,525.90	81,614.82	83,291.16	86,996.39
Fringe Benefits	5,061.29	81,805.07	99,210.00	114,018.56	121,602.11
Subtotal	16,069.90	152,330.97	180,824.82	197,309.72	208,598.50
Reclassifications	63,843.11	(45,894.94)	(5,303.93)	(37,705.79)	(37,296.97)
Net Wages/Fringe Benefits Reported	79,913.01	106,436.03	175,520.89	159,603.93	171,301.53
TCLP FTE's	0.10	1.10	1.10	1.10	1.10
Reclassifications:					
Kalkaska Combustion Turbine	196,620.93	187,177.24	350,000.00	487,243.02	459,283.02
GASB 68 & GASB 75	(1,096,128.06)	196,890.81	159,781.57	598,047.22	531,603.73
Energy Optimization	19,221.46	-	24,400.00	46,165.57	63,550.65
Capitalization of wages	821,754.69	815,948.63	948,769.35	796,427.70	806,565.00
Total	0.00	0.00	0.00	-	(0.00)
Total Wages/Fringe Benefits	4,638,419.73	5,877,161.11	6,417,615.23	6,447,841.04	6,808,808.57
Total TCL&P FTE's	34.25	33.66	36.25	34.38	34.60
Total City FTE's	3.00	3.00	2.90	2.90	3.00
Total FTE's	37.25	36.66	39.15	37.28	37.60

Note: Amounts may not agree exactly to the budget statement because of rounding amounts for budgeting purposes.

Traverse City Light & Power - Electric Fund - 2% Rate Increase in Fiscal Years 2020/21 and 2022/23

Cash Flow Forecast

Fiscal Year:	Actual 2016/17	Estimate 2017/18	Estimate 2018/19	Estimate 2019/20	Estimate 2020/21	Estimate 2021/22	Estimate 2022/23	Estimate 2023/24
Receipts								
Charges for Services	\$ 31,165,119	\$ 30,889,000	\$ 31,159,000	\$ 31,626,385	\$ 32,575,177	\$ 33,063,804	\$ 34,055,718	\$ 34,566,554
Other Operating Revenues	3,348,412	3,278,200	3,012,700	3,072,954	3,134,413	3,197,101	3,261,043	3,326,264
Non Operating Revenues	512,975	1,086,000	539,400	550,188	561,192	572,416	583,864	595,541
Transfers In	125,000	125,000	175,000	175,000	175,000	175,000	83,875	100,000
Total Receipts	35,151,506	35,378,200	34,886,100	35,424,527	36,445,781	37,008,321	37,984,501	38,588,360
Payments								
Generation Expense	22,132,569	21,358,700	21,098,175	21,520,139	21,950,541	22,389,552	22,837,343	23,294,090
Distribution Expense	3,800,057	4,014,425	4,319,950	4,406,349	4,494,476	4,584,365	4,676,053	4,769,574
Transmission Expense	444,502	434,735	471,400	480,828	490,445	500,253	510,259	520,464
Metering & Customer Accounting	501,210	509,900	501,000	479,020	488,600	498,372	508,340	518,507
Conservation & Public Service	466,506	491,550	569,300	580,686	592,300	604,146	616,229	628,553
Information Systems	-	-	480,650	490,263	500,068	510,070	520,271	530,676
Administrative & General	1,258,665	1,249,400	981,900	1,001,538	1,021,569	1,042,000	1,062,840	1,084,097
Insurance	73,530	75,000	87,625	89,378	91,165	92,988	94,848	96,745
City Fee	1,729,139	1,716,000	1,712,200	1,758,336	1,840,826	1,837,477	1,923,700	1,920,183
GASB 68 Adjustment	196,890	600,000	531,000	541,620	552,452	563,501	574,771	586,267
Timing of receivables/payables	(67,574)							
Capital Investments	4,571,219	5,490,000	8,795,000	5,491,000	4,755,000	5,676,000	3,935,000	4,495,000
Total Payments	35,106,713	35,939,710	39,548,200	36,839,156	36,777,442	38,298,725	37,259,653	38,444,155
Cashflow Surplus/Deficit (-)	44,793	(561,510)	(4,662,100)	(1,414,629)	(331,661)	(1,290,404)	724,847	144,204
Opening Cash & Investments Balance	19,371,155	19,415,948	18,854,438	14,192,338	12,777,709	12,446,048	11,155,644	11,880,491
Closing Cash & Investments Balance	19,415,948	18,854,438	14,192,338	12,777,709	12,446,048	11,155,644	11,880,491	12,024,695
Reserved Cash & Investment Balance	9,300,000	8,300,000	8,900,000	9,000,000	9,100,000	9,300,000	9,400,000	9,500,000
Unreserved & Undesignated Cash & Investment	10,115,948	10,054,438	5,292,338	3,777,709	3,346,048	1,855,644	2,480,491	2,524,695

Notes and Assumptions

- 1) Includes MERS 8 year amortization funding schedule
- 2) Load growth increase of 1% per year
- 3) General inflation increase of 2% per year

Traverse City Light and Power
 Pro Forma Financial Statements
 March 8, 2018

INFORMATION SYSTEMS

	FY 15/16 Actual	FY 16/17 Actual	FY 17/18 Budget	FY 17/18 Projected	FY 18/19 Recommended
Salaries and Wages	\$ 60,388	\$ 134,844	\$ 140,000	\$ 138,300	\$ 142,000
Fringe Benefits	84,256	145,866	127,400	138,000	128,800
Office Supplies	-	-	-	-	1,000
Operation Supplies	-	-	-	-	10,100
Communications	-	-	-	-	2,000
(Previously reported as Software and Hardware)	93,219	120,628	164,400	119,700	-
Software	-	-	-	-	121,250
Hardware	-	-	-	-	20,000
Professional and Contractual	-	-	50,000	-	50,000
Professional Development	-	-	4,000	1,000	5,500
Total Information Systems	\$ 237,863	\$ 401,338	\$ 485,800	\$ 397,000	\$ 480,650



**TRAVERSE CITY
LIGHT & POWER**

To: Light & Power Board
From: Tim Arends, Executive Director
Date: February 23, 2018
Subject: Belle River Coal Project

Traverse City Light & Power's ("TCL&P") entitlement costs in the Belle River project ("project") (coal power plant located in St. Clair County) substantially decreased in January 2018 attributed to the retirement of the project's revenue bonds. TCL&P's share of the bonds represented 4.53% of the Michigan Public Power Agency's entitlement, or \$140,780 per month. This will reduce the overall wholesale purchase cost of power by \$1,689,360, or \$.005 per kWh, and annually save the average residential customer \$30, the average commercial customer \$237, and the average industrial customer \$15,963, with the utility's largest customer saving \$183,600.

Included within the board packet is documentation showing the impact to the 2017-18 budgeted wholesale cost of power due to the retirement of the bonds as of January 2018. The budgeted wholesale cost of power was at \$67.79 and declined to \$65.39.

Traverse City Light and Power
 Impact of Belle River Debt Service
 March 2018

BUDGETED			
MWH's	2017-18 Budgeted	2017-18 Revised Budgeted	Percentage Allocation
Belle River (Coal)	60,077	60,077	17.12%
Campbell (Coal)	79,739	79,739	22.72%
Kalkaska CT (Natural Gas)	11,112	11,112	3.17%
Granger Landfill (Renewable)	8,786	8,786	2.50%
NANR Landfill (Renewable)	1,577	1,577	0.45%
Stoney Corners Wind (Renewable)	26,524	26,524	7.56%
M-72 Wind (Renewable)	1,426	1,426	0.41%
Bilateral Transactions (Market Offset)	81,680	81,680	23.27%
Market	80,067	80,067	22.81%
Total	350,988	350,988	
Cost	2017-18 Budgeted	2017-18 Revised Budgeted	Percentage Allocation
Capacity	\$ 808,434.66	\$ 808,434.66	3.52%
Belle River (Coal)	\$ 3,790,843.24	\$ 2,946,076.06	12.84%
Campbell (Coal)	\$ 4,522,553.53	\$ 4,522,553.53	19.71%
Kalkaska CT (Natural Gas)	\$ 4,493,594.64	\$ 4,493,594.64	19.58%
Granger Landfill (Renewable)	\$ 840,678.81	\$ 840,678.81	3.66%
NANR Landfill (Renewable)	\$ 132,153.92	\$ 132,153.92	0.58%
Stoney Corners Wind (Renewable)	\$ 3,167,658.13	\$ 3,167,658.13	13.80%
M-72 Wind (Renewable)	\$ 99,820.00	\$ 99,820.00	0.43%
Bilateral Transactions (Market Offset)	\$ 3,302,228.00	\$ 3,302,228.00	14.39%
Market	\$ 2,636,683.96	\$ 2,636,683.96	11.49%
Total	\$ 23,794,648.89	\$ 22,949,881.71	
Price per MWH	\$ 67.79	\$ 65.39	



**TRAVERSE CITY
LIGHT & POWER**

To: Light and Power Board
From: Scott Menhart, Manager of Technology and Telecommunications
Date: March 2, 2018
Subject: Advanced Metering Infrastructure (AMI) and Fiber to the Premise (FTTP) – Update

Advanced Metering Infrastructure (AMI) Update

To give a high-level update of where the project stands, Staff will break down the project into multiple parts for easy viewing. Currently, the pilot phase of the project is being deployed, which is just a smaller scope of the entire project containing roughly 50 meters. This is being done to ensure everything works to the bid specifications prior to mass deployment of meters. The initial pilot is focused around Hall Street Substation as we already have fiber to this location.

Internal Infrastructure

- Servers have been installed and configured
- Databases have been installed and configured
- Software has been installed and configured and is operational

External Infrastructure

- Gateway (Collector) has been installed at Hall Street Substation
- Antenna has been installed at Hall Street Substation
- Networking has been setup and configured to allow the data transport from Hall street to Hastings (Server Location)
- The pilot meters have been provisioned and ordered. They have an estimated time of arrival in April or beginning of May

Integration to Existing Infrastructure

- Staff has been working with Superior (Utility Billing Vendor) to allow for the change of using the current meter reading handhelds to information from the new AMI system. All logistics have been worked out and currently Eaton, Superior, and Staff are developing the necessary requirements to finalize

All of the infrastructure for the pilot phase is operational and ready to have meters installed. Once we receive the pilot meters in April/May, we will begin installation, which will take roughly a month to finalize. Once the meters are installed for the pilot, we will begin doing the formalized

FOR THE LIGHT & POWER BOARD STUDY SESSION MARCH 13, 2018

testing developed within the agreement between TCL&P and Eaton, which is estimated to take two-four weeks. If all tests are passed and the system is working as promised, we will proceed to procure the remaining meters for the entire deployment (note that all meters have been ordered but will not be delivered or invoiced until the Pilot is approved by TCL&P). These will then be deployed in phases to allow for simultaneous testing and system assurance. Project completion is expected to be finalized by Fall/Winter of this year.

Fiber to the Premise (FTTP) Update

After the Board approved Staff to go out for bid on phase one of the project during the February 13, 2018 Board Meeting, Staff has been meeting internally to review next steps and to formalize the process for moving forward. In doing so, Staff has begun to meet with vendors to engage in discussions about a strategy best suited for TCL&P's operations that will yield the most successful results. As such, TCL&P will be going out for bid to work with a specific vendor, who in turn, will assist Staff to develop the project plans, including costs, engineering, design and phase one deployment. These plans will then be brought back to the Board for approval with actual costs for this phase.

The following estimated timeline is how Staff is moving the project forward:

BID – Prepare, Release, Review, and Select (60 – 120 days)

- Prepare an RFQ for vendor selection which would be completed by April
- Go out for RFQ in April, for thirty – sixty days, depending on responses and/or questions
- Review responses from RFQ, which will entail detailed vendor checks, and narrow down to three or less (sixty days). This will include potential trips to deployment areas of specific vendors to see their solution in action
- Work with the three (or less) remaining vendors for final selection (30 days)

Project Plans Development (60 – 180 days)

- Begin meeting with selected vendor to cover Board/Staff expectations and operating strategies of the project
 - Construction Plans
 - Operating Strategies
 - Maintenance Strategies
 - Marketing Strategies
 - Customer Service Strategies
 - Financing Strategies
 - Hookup and Deployment Strategies
- Construction Development – Design and Engineering
- Operating Strategies
 - Single ISP vs Multiple
 - Marketing and Promotional

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- Call Center and Customer Connections
- O&M on Fiber
- O&M on Electronics
- Hookup and Deployment
 - Methodology
 - Financial Strategies for Deployment
 - Hookup Costs: Now vs Later
 - Hookup Costs: One-time fee vs Monthly fee
- Equipment and Material Selection
 - Fiber Selection
 - Electronic Selection
 - Hardware Selection

Board Decision – Project Approval: Plan, costs, and Initial Operating Strategy (30 - 60 days)

- Present Project Plan and costs to Board at a regular Board Meeting with no motion. Allow for initial comments, questions, and refinements to Project Plan as needed
- Bring Final Project Plan, with motion, to following Board Meeting for Board Approval Consideration

Project Plan Execution (If Board Approved) – (120 - 180 days)

- Vendor Contract legal review
- Begin Project Execution
 - Material and Hardware Procurement
 - Construction (Permitting, Planning, Building)
 - System Integration (Billing, Access, etc.)
 - Customer Hookups

Future Widespread Deployment across TCL&P Service Territory (If Board Approves) – 730 Days

- Bonding will be required which involves City Commission authorization
- Design and Engineering on remaining circuits
- Construction for deployment on remaining circuits
- Customer hookups

Project Totals

- Full Completion of Phase One: 270 – 540 days
- Full Project Completion (TCL&P Service Territory): 1000 – 1270 days

*All project timing estimates are based on current deployment methodologies and understanding of the project. They are subject to change as the project evolves. Through periodic Staff updates, the Board will be made aware of timeline changes.