

Council Business Meeting

June 4, 2019

Agenda Item	Resolution for Electric Rate Increases and Repeal of Resolution 2018-14	
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SUMMARY

The City Council is being asked to increase electric rates. The requested increase of 3.67 percent is an average across all rate classes. The percentage of increase will vary for the individual rate classes. These rate increases are based on the Cost of Service Study (COS) (late 2016) and corresponding Rate Recommendation (early 2017), that were completed by Utility Financial Solutions. The intent of this rate model is to set rates at a level which accurately reflects the costs of providing electric service to each unique rate class. To avoid large swings in any rates the implementation of the rate recommendation has been spread out over multiple years.

POLICIES, PLANS & GOALS SUPPORTED

Administrative Goals Supported:

- 29. Promote conservation as a long-term strategy to protect the environment and public utility needs.
- 40. Ensure on-going fiscal ability to provide desired and required services at an acceptable level.
- 51. Develop fee/rate structure that is consistent with adopted master plans and studies.

Plans/Studies Supported:

- Electric System Ten -Year Planning Study (2014)
- Electric Cost of Service Study and Financial Projection (October 2016)

2016 Community Livability Report (Citizen Survey): The current survey indicates eighty-six percent of the citizens rate the Electric Utility as either excellent or good. The proposed rate changes allow the Electric Utility to preserve the service levels necessary to keep this favorable rating.

PREVIOUS COUNCIL ACTION

[October 2016](#) – Council was presented the Cost of Service and Financial Projection Study prepared by Utility Financial Solutions. Council gave staff direction to move forward with designing rates based on the Cost of Service.

[March 2017](#) – Council was presented the rate design based on the Cost of Service Study (COS). Staff was given direction to bring the rate design to a future business meeting for action.

[May 2017](#) – Council was presented a rate increase of 6.9 percent based on the cost of service rate design. Council declined the increase pending more information.

[June 2017](#) – Council was presented a rate increase of 6.04 percent based on a slight modification to the cost of service rate design. Council approved this rate increase.

[May 2018](#) – Council was presented and approved a rate increase of 5.16 percent that was based on the recommendations of the cost of service study.

BACKGROUND AND ADDITIONAL INFORMATION

The COS evaluated how the utility's costs are allocated across different customer classes to determine whether those costs are accurately reflected in rates. The COS identified the cost to serve each class of customer and provides a model to ensure these costs are recovered through equitable charge and rate structures (i.e. all classes carry their fair share). The COS recommended a series of rate changes over a five-year period. This Rate Design implements the COS rate model.

A summary of actual and **proposed** average rate changes for the Electric Department are:

Rate Adjustment by FY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Increase %	0.0	4.0	5.3	5.3	3.6	4.5	0.0	6.04	5.16	3.67

Risks in the next year

Bonneville Power Administration (BPA) financial reserves surcharge - As of May 10, 2019 estimates are that there is a 61 percent chance that a reserves surcharge would be triggered by BPA in the 2020 FY. This surcharge is implemented when a BPA business line’s “reserves available for risk” falls below 60 days’ cash on hand. If implemented the costs are distributed to customers based on their share of the Federal System.

Electric Bill Comparison

Pacific Power is the City’s neighboring utility. A comparison of a typical residential customer’s bill is seen below.

Residential - single family dwelling	Pacific Power (Talent, OR)			City of Ashland			City of Ashland FY20			
	kwh	cost/unit	Total	kwh	cost/unit	Total	kwh	cost/unit	Total	
Average monthly usage = 750kwh										
Total Usage	750			750			750			
Basic Charge		\$ 9.50	\$ 9.50		\$ 12.50	\$ 12.50		\$ 14.00	\$ 14.00	
Delivery Charge	750	0.04433	33.25							
Supply Energy Charge Block 1 for 32 Days	750	0.05603	42.02	500	0.07216	36.08	500	0.07456	37.28	
Supply Energy Charge Block 2	-	0.07639	0.00	250	0.08726	21.82	250	0.08966	22.42	
sub total			\$ 84.77			70.40			73.70	
Public Purpose		3.00%	2.54							
Energy Conservation Charge	750	0.00346	2.60							
Low Income Assistance			0.84							
JC Boyle Dam Removal	750	0.00036	0.27							
Copco & Iron Gate Dam Removal	750	0.00114	0.86							
BPA Columbia River Benefits for 32 Days	750	(0.01062)	(7.97)							
Franchise Fee		1.50%	1.27							
Electric Utility total			85.18			70.40			73.70	
Electric Utility total more/(less) than Pacific Power bill for same kwh use:						\$ (14.78)	17.4% Less		\$ (11.48)	13.5% Less

Notes:

- Pacific Power billing information current as of January 1, 2019
- The proposed rate would result in an increase of \$3.30 monthly for electricity to the average residential customer in Ashland

FISCAL IMPACTS

The proposed rate is included in the FY20 budget. If the rate increase is not approved by Council, it would mean a decrease of approximately \$600,000 in gross revenue to the Electric Department and a significant decrease in revenue to the General Fund.

Assistance Programs

If qualified, the following programs are funded from utility rates and may be available to City of Ashland utility customers to help pay utility bills. The bulk of the funding for these programs comes from fees and charges collected through utility rates. The programs are:

- Senior and Disabled Discount program - helps qualifying customers to pay monthly utility bills.
- Low Income Energy Assistance Program
- The City provides a HEAT donation program
- The City’s Conservation Division helps residents by providing services to lower energy use.

STAFF RECOMMENDATION

Staff recommends Council approve the proposed rate increase based on Cost of Service study recommendations, to be effective July 1, 2019.



ACTIONS, OPTIONS & POTENTIAL MOTIONS

I move approval of resolution 2019-07 titled “A resolution revising rates for electric service pursuant to Ashland Municipal Code 14.16.030 and repealing resolution 2018-14”.

I move to amend resolution 2019-07...

I move to deny resolution 2019-07.

REFERENCES & ATTACHMENTS

Attachment 1: Resolution 2019-07

Attachment 2: Electric Rate Tables

Attachment 3: City of Ashland Rate Design 5-16-17

Attachment 4: Electric Cost of Service and Financial Projections, October 2016

[October 2016 Council Packet Materials](#)

[May 2017 Council Packet Materials](#)

[June 2017 Council Packet Materials](#)

[May 2018 Council Packet Materials](#)

RESOLUTION NO. 2019- 07

**A RESOLUTION REVISING RATES FOR ELECTRIC SERVICE
PURSUANT TO ASHLAND MUNICIPAL CODE SECTION 14.16.030 AND
REPEALING RESOLUTION 2018-14**

THE CITY OF ASHLAND RESOLVES AS FOLLOWS:

SECTION 1. The percentages in the following table represent the average impact to customers in the respective classes. These rates for electric service provided by the City of Ashland are effective with usage after July 1, 2019, per the attached rate tables.

Residential	Seasonal Residential	Commercial Single/ Telecom	Outdoor Lighting	Commercial Three Phase	Govt/Muni Single Phase	Govt/Muni Three Phase	Govt Large Service
4.71%	3.22%	2.75%	2.93%	2.5%	3.9%	2.25%	2.25%

SECTION 2. Copies of this resolution shall be maintained in the Office of the City Recorder and shall be available for public inspection during regular business hours.

SECTION 3. Classification of the fee. The fees specified in Section 1 of this resolution are classified as not subject to the limits of Section 11b of Article XI of the Oregon Constitution (Ballot Measure 5).

SECTION 4. Resolution 2018-14 is repealed on the date new rates established by this Resolution are effective.

SECTION 5. This resolution takes effect upon signing by the Mayor.

This resolution was duly PASSED and ADOPTED this _____ day of June 2019 and takes effect upon signing by the Mayor.

Melissa Huhtala, City Recorder

SIGNED and APPROVED this ____ day of June, 2019.

John Stromberg, Mayor

Reviewed as to form:

David H. Lohman, City Attorney

City of Ashland, Oregon
RESIDENTIAL SERVICE

Applicable:

To single-family residential customers when all service is supplied to one point of delivery.

Monthly Billing:

The Monthly Billing shall be the sum of the Basic and Energy Charges.

Basic Charge:	July 2018	July 2019
Per Month	\$ 12.50	\$ 14.00

Energy Charge: Per kWh	July 2018	July 2019
First 500 kWh	\$ 0.07216	\$ 0.07456
500 kWh - 5000 kWh	\$ 0.08726	\$ 0.08966
Over 5000 kWh	\$ 0.12500	\$ 0.12750

Minimum Charge:

The monthly minimum charge shall be the Basic Charge. A higher minimum may be required under contract to cover special conditions.

Special Conditions:

Residential Horsepower load requirements of greater than 3 HP must comply with the City of Ashland's Electric Service Manual.

Continuing Service:

This schedule is based on continuing service at each service location. Disconnect and reconnect transactions shall not operate to relieve a customer from monthly minimum charges.

City of Ashland, Oregon
SEASONAL RESIDENTIAL SERVICE

Applicable:

This rate is applicable to seasonal residential uses such as owner occupied single-family residential customers providing travelers accommodations, and when all service is supplied at one point of delivery.

Monthly Billing:

The Monthly Billing shall be the sum of the Basic and Energy Charges.

Basic Charge:	July 2018	July 2019
Per Month	\$ 12.50	\$ 14.00

Energy Charge: Per kWh	July 2018	July 2019
First 600 kWh	\$ 0.08209	\$ 0.08381
601 kWh - 5000kWh	\$ 0.08978	\$ 0.09150
Over 5000 kWh	\$ 0.12500	\$ 0.12750

Minimum Charge:

The monthly minimum charge shall be the Basic Charge. A higher minimum may be required under contract to cover special conditions.

Special Conditions:

Residential Horsepower load requirements of greater than 3 HP must comply with the City of Ashland's Electric Service Manual.

Continuing Service:

This schedule is based on continuing service at each service location. Disconnect and reconnect transactions shall not operate to relieve a customer from monthly minimum charges.

Applicable:

This schedule is applicable to non-residential and multiple-family residential customers whose entire requirements are supplied hereunder, and whose loads have never registered 1,000 kilowatts or more, more than once in any consecutive 18-month period. Deliveries at more than one point, or more than one voltage and phase classification, will be separately metered and billed. Service for intermittent, partial requirements or highly fluctuating loads, or where service is seasonally disconnected during any one year period will be provided only by special contract for such service.

Monthly Billing:

The monthly billing shall be the sum of the Basic, Demand (if applicable), Energy, and Reactive Power Charges, plus applicable Metering and Delivery adjustments.

Basic Charge:

Single Phase	July 2018	July 2019
30 kW or less	\$ 21.00	\$ 23.00
Over 30 kW	\$ 64.67	\$ 64.67

Three-Phase Service	July 2018	July 2019
30 kW or less	\$ 40.00	\$ 45.00
Over 30 kW	\$ 112.10	\$ 112.10

Demand Charge:

No charge for the first 15 kW of demand.
 For all kW in excess of 15 kW

Demand Charge	July 2018	July 2019
Per kW	\$ 5.50000	\$ 6.25000

Energy Charge:

Single Phase	July 2018	July 2019
Per kWh up to 3,000 kWh	\$ 0.08550	\$ 0.08648
3001 - 20000 kWh	\$ 0.08575	\$ 0.08673
over 20,000 kWh	\$ 0.08612	\$ 0.08710

Three Phase	July 2018	July 2019
Per kWh up to 3,000 kWh	\$ 0.07706	\$ 0.07754
3001 - 20,000 kWh	\$ 0.07754	\$ 0.07802
over 20,000 kWh	\$ 0.07773	\$ 0.07821

Minimum Charge:

The monthly charge shall be the basic charge. A higher minimum may be required under contract to cover special conditions.

Reactive Power Charges:

The maximum 30-minute reactive demand for the month in kilovolt-amperes in excess of 25% of the measured kilowatt demand the same month will be billed, in addition to the above charges, at rate shown below per kvar of such excess reactive demand.

Reactive Power Charge	July 2018	July 2019
Per kvar	\$ 0.08533	\$ 0.08746

Demand:

Demand shall be the kilowatts shown by, or computed from the readings of the City's demand meter for the 30-minute period of customers greatest use during the month, determined to the nearest kilowatt.

Metering & Delivery Voltage Adjustments:

The above monthly charges are applicable without adjustment for voltage with delivery and metering are at the City's standard secondary voltage.

Metering:

For as long as metering voltage is at the City's available primary distribution voltage of 11 kV or greater, the above charges shall be reduced by one and one-half percent (1 1/2 %) to compensate for losses.

Delivery:

For as long as delivery voltage is at City's available primary distribution voltage of 11 kV or greater, the total of the above charges will be reduced by 15 Cents per kilowatt of load size used for the determination of the Basic Charge billed in the month. A High Voltage Charge of \$47.12 per month will be added where such deliveries are metered at the delivery voltage. When a new delivery is, at the request of the customer, made by means of City-owned transformers at a voltage other than a locally standard distribution voltage, the above charges for any month will be increased by 15 Cents per kilowatt of load size used for the determination of the Basic Charge billed in the month.

The City retains the right to change its line voltage or classification thereof at any time, and after reasonable advance notice to any customer affected by such change, such customer then has the option to take service at the new line voltage or to accept service through transformers to be supplied by City subject to the voltage adjustments above.

Contract:

The City may require the customer to sign a written contract which shall have a term of not less than one (1) year.

Installation and Maintenance:

The City may contract for the installation and maintenance of electric facilities on the customer's premises. The terms of such service shall be set forth in a contract, the form and terms of which shall be approved by the City Council. Monthly charges made by the City as reimbursements for ownership, operation and maintenance costs applicable to facilities installed to furnish service under rules of this schedule shall be determined in accordance with the following:

- (1) Operating Charge shall be equal to $\frac{2}{3}$ of 1% per month of the installed cost of facilities paid for by the customer.
- (2) Facilities Charge shall be equal to 1 $\frac{1}{2}$ % per month of the installed cost of facilities paid for by the customer.
- (3) Transformer Capacity Charge shall be equal to 15 Cents per nameplate kva.

Special Conditions:

Customers shall not resell electric service received from the City under provisions of this schedule to any person, except by written permission of the City, and where customer meters and bills any of his/her tenants at City's regular rates for the type of service which such tenant may actually receive.

Continuing Service:

This schedule is based on continuing service at each service location. Disconnect and reconnect transactions shall not operate to relieve a customer from monthly minimum charge.

Applicable:

This schedule is applicable to governmental customers whose entire requirements are supplied hereunder, and whose loads have never registered 1,000 kilowatts or more, more than once in any consecutive 18-month period. Deliveries at more than one point, or more than one voltage and phase classification, will be separately metered and billed.

Monthly billing:

The monthly billing shall be the sum of the Basic, Demand (if applicable), Energy, and Reactive Power Charges, plus applicable Metering and Delivery adjustments.

Basic Charge:

Single Phase	July 2018	July 2019
30 kW or less	\$ 21.00	\$ 23.00
Over 30 kW	\$ 64.67	\$ 64.67

Three-Phase Service	July 2018	July 2019
30 kW or less	\$ 40.00	\$ 45.00
Over 30 kW	\$ 112.10	\$ 112.10

Demand Charge:

No charge for the first 15 kW of demand
 For all kW in excess of 15 kW

Demand Charge	July 2018	July 2019
Per kW	\$ 5.50	\$ 6.25

Energy Charge:

Single Phase	July 2018	July 2019
Per kWh up to 3,000 kWh	\$ 0.09562	\$ 0.09538
3001 - 20,000 kWh	\$ 0.09562	\$ 0.10038
over 20,000 kWh	\$ 0.09562	\$ 0.10038

Three Phase	July 2018	July 2019
Per kWh up to 3,000 kWh	\$ 0.10433	\$ 0.10433
3001 - 20,000 kWh	\$ 0.07996	\$ 0.07996
over 20,000 kWh	\$ 0.07803	\$ 0.07837

Minimum Charge:

The monthly minimum charge shall be the basic charge. A higher minimum may be required under contract to cover special conditions.

Reactive Power Charges:

The maximum 30-minute reactive demand for the month in kilovolt-amperes in excess of 25% of the measured kilowatt demand the same month will be billed, in addition to the above charges, at rate shown below per kvar of such excess reactive demand.

Reactive Power Charge	July 2018	July 2019
Per kvar	\$ 0.84720	\$ 0.86626

Demand:

Demands shall be the kilowatts shown by, or computed from the readings of the City's demand meter for the 30-minute period of customer's greatest use during the month, determined to the nearest kilowatt.

Metering & Delivery Voltage Adjustments:

The above monthly charges are applicable without adjustment for voltage with delivery and metering are at the City's standard secondary voltage.

Metering:

For as long as metering voltage is at the City's available primary distribution voltage of 11 kV or greater, the above charges shall be reduced by one and one-half percent (1 1/2 %) to compensate for losses.

Delivery:

For as long as delivery voltage is at City's available primary distribution voltage of 11 kV or greater, the total of the above charges will be reduced by 15 Cents per kilowatt of load size used for the determination of the Basic Charge billed in the month. A High Voltage Charge of \$47.12 per month will be added where such deliveries are metered at the delivery voltage. When a new delivery is, at the request of the customer, made by means of City-owned transformers at a voltage other than a locally standard distribution voltage, the above charges for any month will be increased by 15 Cents per kilowatt of load size used for the determination of the Basic Charge billed in the month.

The City retains the right to change its line voltage or classification thereof at any time, and after reasonable advance notice to any customer affected by such change, such customer then has the option to take service at the new line voltage or to accept service through transformers to be supplied by City subject to the voltage adjustments above.

Contract:

The City may require the customer to sign a written contract which shall have a term of not less than one (1) year.

Installation and Maintenance:

The City may contract for the installation and maintenance of electric facilities on the customer's premises. The terms of such service shall be set forth in a contract, the form and terms of which shall be approved by the City Council. Monthly charges made by the City as reimbursements for ownership, operation and maintenance costs applicable to facilities installed to furnish service under rules of this schedule shall be determined in accordance with the following:

(1) Operating Charge shall be equal to 2/3 of 1% per month of the installed cost of facilities paid for by the customer.

(2) Facilities Charge shall be equal to 1 1/2 % per month of the installed cost of facilities paid for by the customer.

(3) Transformer Capacity Charge shall be equal to 15 Cents per nameplate kva.

Special Conditions:

Customers shall not resell electric service received from the City under provisions of this schedule to any person, except by written permission of the City, and where customer meters and bills any of his/her tenants at City's regular rates for the type of service which such tenant may actually receive.

Continuing Service:

This schedule is based on continuing service at each service location. Disconnect and reconnect transactions shall not operate to relieve a customer from monthly minimum charges.

Applicable:

This schedule is applicable to electric service loads which have registered a peak demand of 1,000 to 3,000 kilowatts more than once in any consecutive 18-month period. Deliveries at more than one point, or more than one voltage and phase classification, will be separately metered and billed. Service for intermittent, partial requirements, or highly fluctuating loads, or where service is seasonally disconnected during any one-year period will be provided only by special contract for such service.

Monthly Billing:

The Monthly Billing shall be the sum of the Basic, Demand (if applicable), Energy, and Reactive Power Charges, plus appropriate Metering and Delivery adjustments.

	July 2018	July 2019
Basic Charge	\$ 2,639.36	\$ 2,639.36
Demand Charge per kW	\$ 7.00000	\$ 8.00000
Energy Charge per kWh	\$ 0.05963	\$ 0.05902

Minimum Charge:

The monthly minimum charge shall be the basic charge. A higher minimum charge may be required by contract.

On-Peak Period Billing Demand:

The on peak period kilowatts shown by or computed from the readings of City's demand meter for the 30-minute period of customer's greatest use during the month, determined to the nearest kilowatt.

Reactive Power Charge:

The maximum 30-minute reactive demand for the month in kilovolt-amperes in excess of 25% of the measured kilowatt demand for the same month will be billed, in addition to the above charges, at rate shown below per kvar of such excess reactive demand.

	July 2018	July 2019
Per kvar	\$ 0.84711	\$ 0.86617

Metering:

For as long as metering voltage is at the City's available primary distribution voltage of 11 kV or greater, the above charges shall be reduced by (1-1 1/2%) to compensate for losses.

Delivery:

For as long as delivery voltage is at City's current locally available primary or transmission voltage the total of the above charges will be reduced by the following amount per kilowatt of load size used for the determination of the Basic Charge billed in the month; and where such deliveries are metered at the delivery voltage, the following high voltage charges shall be added.

	July 2018	July 2019
Standard Service Voltage	Reduction per kW	Reduction per kW
Primary voltage of 11 kV or greater	\$ 0.16	\$ 0.16
Transmission voltage of 60 kV or greater	\$ 0.34	\$ 0.35

High Voltage Charge	Per Month	Per Month
Primary voltage of 11 kV or greater	\$ 46.08	\$ 47.12
Transmission voltage of 60 kV or greater	\$ 477.79	\$ 488.54

When a new delivery, or an increase in capacity for an existing delivery is, at the request of the customer, made by means of City-owned transformers at a voltage other than a locally standard distribution voltage, the above charges for any month will be increased by 15 cents per kilowatt of load size for the determination of the Basic Charge billed in the month.

The City retains the right to change its line voltage or classifications thereof at any time and after reasonable advance notice to any customer affected by such change, such customer then has the option to take service at the new line voltage or to accept service through transformers to be supplied by City subject to the voltage adjustments above.

Contract:

The City may require the customer to sign a written contract which shall have a term of not less than one (1) year.

Installation and Maintenance:

The City may contact for the installation and maintenance of electric facilities on the customer's premises. The terms of such service shall be set forth in a contract, the form and terms of which shall be approved by the City Council. Monthly charges made by the City shall be approved by the City Council. Monthly charges made by the City as reimbursement for ownership, operation and maintenance costs applicable to facilities installed to furnish service under rules of the Schedule shall be determined in accordance with the following:

- (1) Operating Charge -- shall be equal to 2/3 of 1% per month of the installed cost of facilities paid for by the customer.
- (2) Facilities Charge -- shall be equal to 1 1/2% per month of the installed cost of the facilities as determined by the City for facilities installed at City's expense.
- (3) Transformer Capacity Charge -- shall be equal 15 (cents) per nameplate kva.

Special Conditions:

Customers shall not resell electric service received from the City under provisions of this schedule to any person, except by written permission of the City, and where customer meters and bills any of his/her tenants at City's regular rates for the type of service which such tenant may actually receive.

City of Ashland, Oregon
OUTDOOR AREA LIGHTING SERVICE

Monthly Billing:

The following rate schedule is no longer available for new residential installations and is for outdoor area lighting service furnished from dusk to dawn by City-owned high pressure sodium luminaries which may be served by secondary voltage circuits from City's existing overhead distribution system, and mounted on City-owned wood poles and served in accordance with City's specifications as to equipment and facilities, shall be as follows:

(1) Net Monthly Rate Per Luminaire:

Type of Luminaire	Nominal Lumen Rating	July 2018	July 2019
High-Pressure Sodium	5,800	\$ 23.80	\$ 24.50
High-Pressure Sodium	22,000	\$ 34.65	\$ 35.65
High-Pressure Sodium	50,000	\$ 55.55	\$ 57.15

Existing Residential Monthly Billing:

Type of Luminaire	Nominal Lumen Rating	July 2018	July 2019
High-Pressure Sodium	5,800	\$ 18.60	\$ 19.15
High-Pressure Sodium	22,000	\$ 26.50	\$ 27.25
High-Pressure Sodium	50,000	\$ 42.75	\$ 44.00

(2) Pole Charge: A monthly charge of \$2.15 per pole shall be made for each additional pole required in excess of the luminaries installed.

Pole Charge	July 2018	July 2019
Per Month	\$ 2.10	\$ 2.15

Maintenance:

Maintenance will be performed during regular working hours as soon as practicable after customer has notified City of service failure. The City reserves the right to contract for the installation and/or maintenance of lighting service provided hereunder.

Suspension of Service:

The customer may request temporary suspension of power for lighting by written notice. During such periods the monthly rate will be reduced by the City's estimated average monthly re-lamping and energy costs for the luminaire.

Contract:

Due to the investment involved and cost of initial installation, the term of the contract shall be by written agreement with the Electric Department, the form of which shall have prior approval by the City Council, and the term of which shall be for not less than three (3) years.

City of Ashland

Rate Design

5/16/2017

Utility Financial Solutions, LLC
185 Sun Meadow Court
Holland, MI USA 49424
(616) 393-9722
Fax (616) 393-9721
Email: mbeauchamp@ufsweb.com

Submitted Respectfully by:
Mark Beauchamp, CPA, CMA, MBA
President, Utility Financial Solutions



City of Ashland
Rate Design
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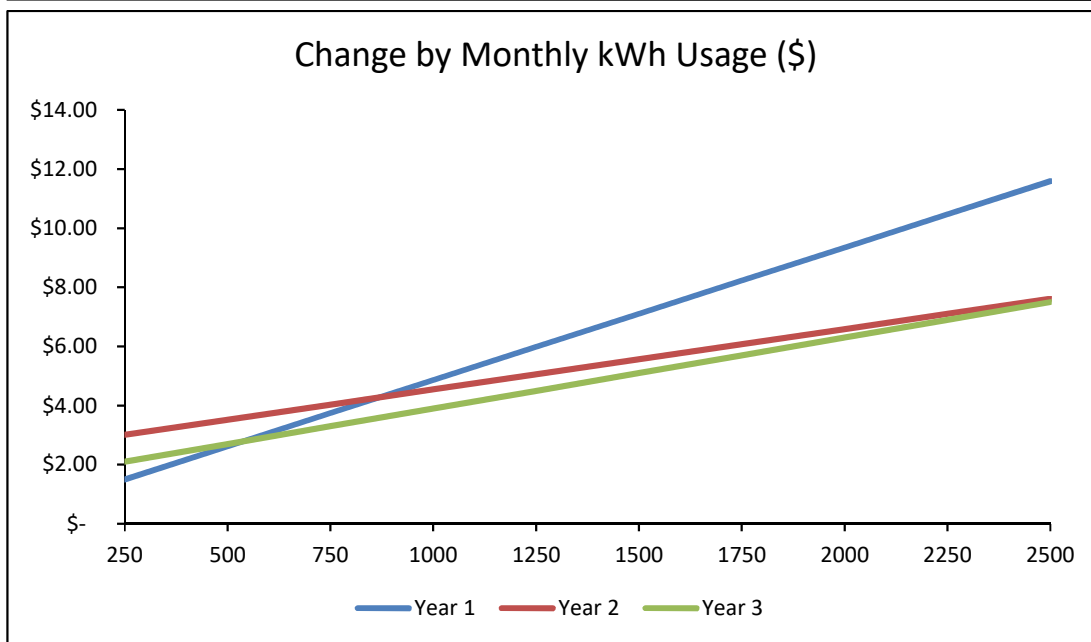
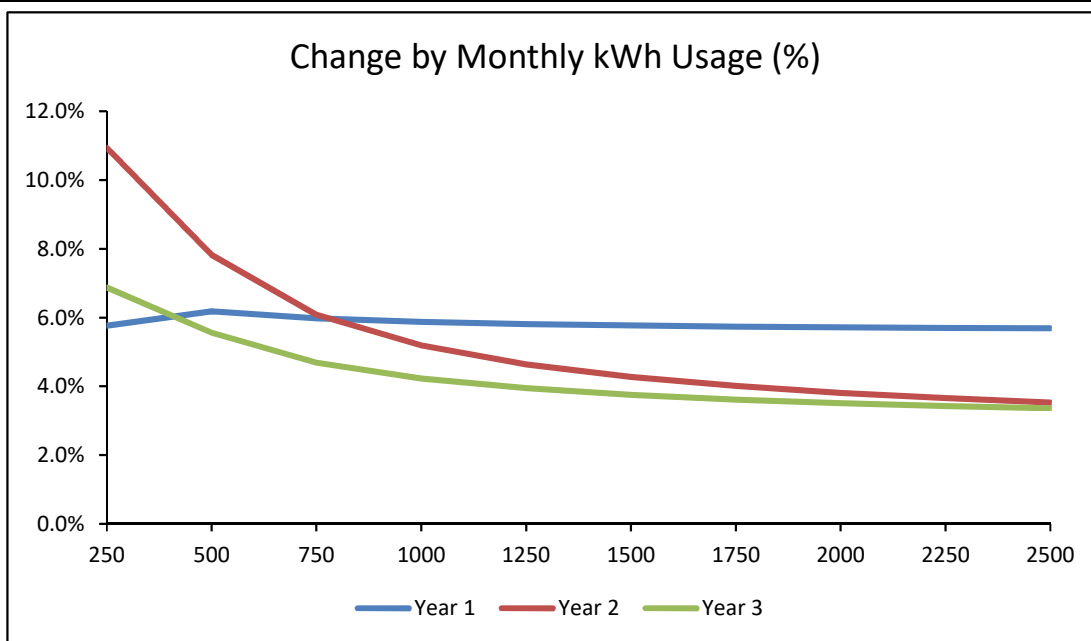
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City of Ashland
Rate Design
Rate Design Summary

Customer Class	Projected	Projected	Projected	Projected	Change Year 1 %	Change Year 2 %	Change Year 3 %
	Revenues Under Current Rates	Revenues Under Proposed Rates Year 1	Revenues Under Proposed Rates Year 2	Revenues Under Proposed Rates Year 3			
Residential Single-Phase	\$ 7,410,275	\$ 7,844,670	\$ 8,329,088	\$ 8,721,105	5.86%	6.18%	4.71%
Seasonal Residential Single	60,785	65,523	69,196	71,425	7.80%	5.61%	3.22%
Commercial Single/Telecomm	1,788,904	1,914,127	1,996,434	2,051,336	7.00%	4.30%	2.75%
Outdoor Lighting	19,703	21,061	21,848	22,489	6.89%	3.74%	2.93%
Commercial Service Three Phase	3,168,263	3,358,358	3,492,693	3,580,010	6.00%	4.00%	2.50%
Govt/Muni Single Phase	222,773	242,597	257,883	267,940	8.90%	6.30%	3.90%
Govt/Muni Three Phase	917,686	968,159	1,004,465	1,027,065	5.50%	3.75%	2.25%
Governmental Large Service	878,093	926,259	960,993	982,616	5.49%	3.75%	2.25%
Totals	\$ 14,466,481	\$ 15,340,754	\$ 16,132,599	\$ 16,723,986	6.04%	5.16%	3.67%

City of Ashland
Rate Design
Residential Single-Phase

Rates	Current	Year 1	Year 2	Year 3
Monthly Facilities Charge:				
All Customers	\$ 9.62	\$ 10.00	\$ 12.50	\$ 14.00
Energy Charge:				
Block 1 (0 - 500 kWh)	\$ 0.06563	\$ 0.07011	\$ 0.07216	\$ 0.07456
Block 2 (501 - 5,000 kWh)	\$ 0.08073	\$ 0.08521	\$ 0.08726	\$ 0.08966
Block 3 (Excess)	\$ 0.08073	\$ 0.12000	\$ 0.12500	\$ 0.12750
Revenue from Rate	\$ 7,410,275	\$ 7,844,670	\$ 8,329,088	\$ 8,721,105
Change from Previous		5.9%	6.2%	4.7%



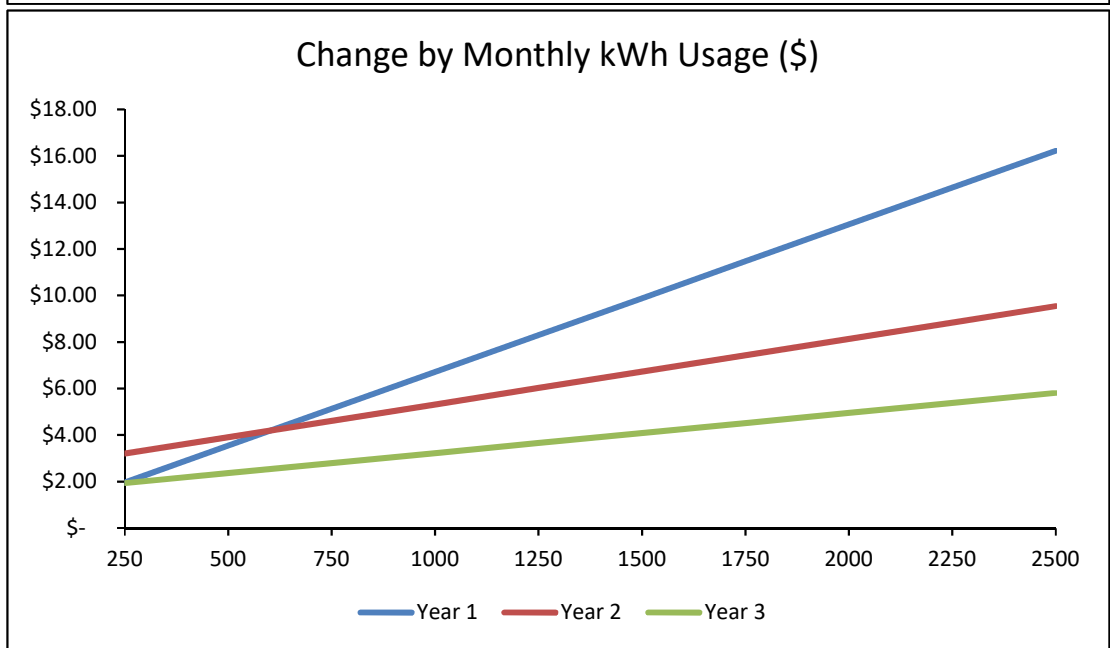
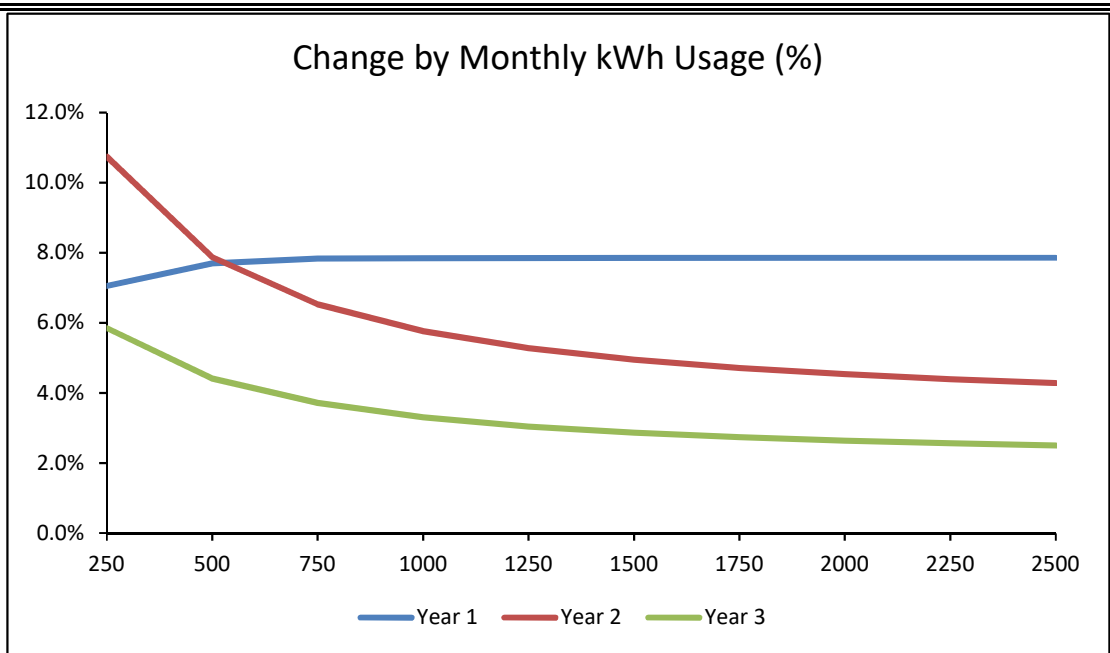
City of Ashland
Rate Design
Residential Single-Phase

Rate Change Effect by Usage (%)				
Usage	Year 1	Year 2	Year 3	
250	5.8%	10.9%	6.9%	
500	6.2%	7.8%	5.6%	
750	6.0%	6.1%	4.7%	
1000	5.9%	5.2%	4.2%	
1250	5.8%	4.6%	3.9%	
1500	5.8%	4.3%	3.8%	
1750	5.7%	4.0%	3.6%	
2000	5.7%	3.8%	3.5%	
2250	5.7%	3.7%	3.4%	
2500	5.7%	3.5%	3.4%	

Rate Change Effect by Usage (\$)				
Usage	Year 1	Year 2	Year 3	
250	\$ 1.50	\$ 3.01	\$ 2.10	
500	\$ 2.62	\$ 3.52	\$ 2.70	
750	\$ 3.74	\$ 4.03	\$ 3.30	
1000	\$ 4.86	\$ 4.54	\$ 3.90	
1250	\$ 5.99	\$ 5.05	\$ 4.50	
1500	\$ 7.11	\$ 5.57	\$ 5.10	
1750	\$ 8.23	\$ 6.08	\$ 5.70	
2000	\$ 9.35	\$ 6.59	\$ 6.30	
2250	\$ 10.47	\$ 7.10	\$ 6.90	
2500	\$ 11.59	\$ 7.61	\$ 7.50	

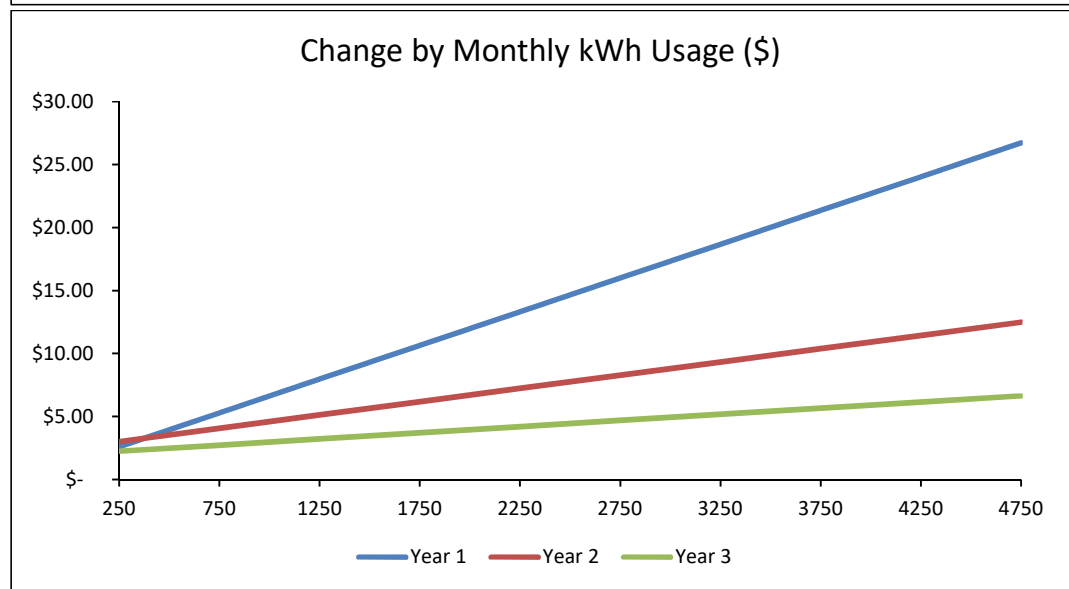
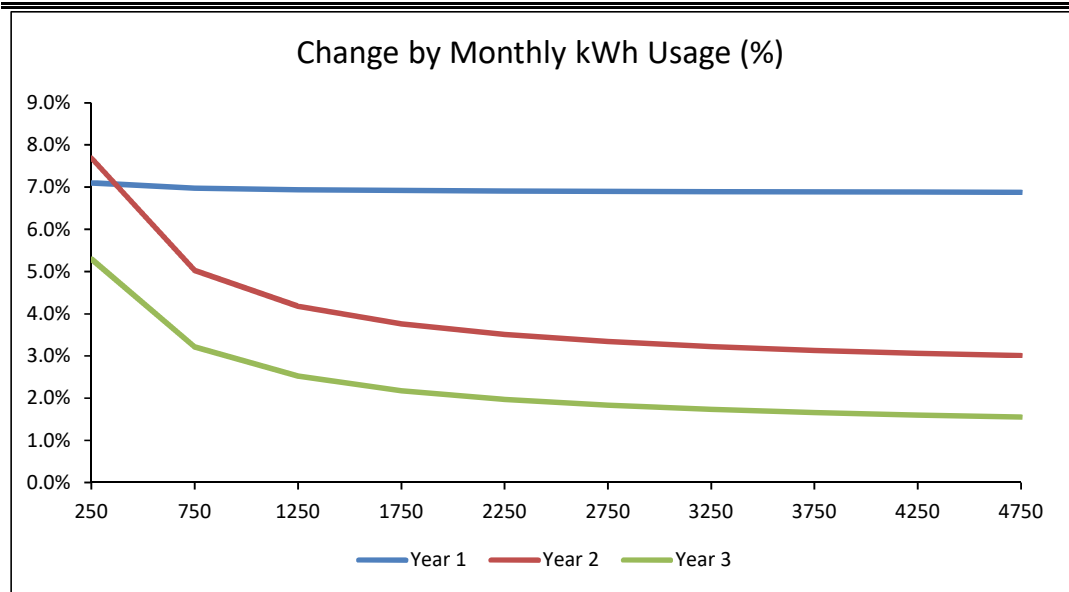
City of Ashland
Rate Design
Seasonal Residential Single

Rates	Current	Year 1	Year 2	Year 3
Monthly Facilities Charge:				
All Customers	\$ 9.62	\$ 10.00	\$ 12.50	\$ 14.00
Energy Charge:				
Block 1 (0 - 600 kWh)	\$ 0.07293	\$ 0.07927	\$ 0.08209	\$ 0.08381
Block 2 (601 - 5,000 kWh)	\$ 0.08062	\$ 0.08696	\$ 0.08978	\$ 0.09150
Block 3 (Excess)	\$ 0.08062	\$ 0.12000	\$ 0.12500	\$ 0.12750
Revenue from Rate	\$ 60,785	\$ 65,523	\$ 69,196	\$ 71,425
Change from Previous		7.8%	5.6%	3.2%



City of Ashland
Rate Design
Commercial Single/Telecomm

Rates	Current	Year 1	Year 2	Year 3
Monthly Facilities Charge:				
30kw or Less/Power Supply	\$ 17.23	\$ 18.50	\$ 21.00	\$ 23.00
Over 30kW	\$ 64.67	\$ 64.67	\$ 64.67	\$ 64.67
Energy Charge:				
Block 1 (0 - 3,000 kWh)	\$ 0.07804	\$ 0.08340	\$ 0.08550	\$ 0.08648
Block 2 (3001 - 20,000 kWh)	\$ 0.07829	\$ 0.08365	\$ 0.08575	\$ 0.08673
Block 3 (Excess)	\$ 0.07866	\$ 0.08402	\$ 0.08612	\$ 0.08710
Demand Charge				
Block 1 (0 - 15 kW)	\$ -	\$ -	\$ -	\$ -
Block 2 (Excess)	\$ 4.12	\$ 4.75	\$ 5.50	\$ 6.25
Power Cost Adjustment:				
All Energy	\$ -	\$ -	\$ -	\$ -
Revenue from Rate	\$ 1,788,904	\$ 1,914,127	\$ 1,996,434	\$ 2,051,336
Change from Previous		7.0%	4.3%	2.8%

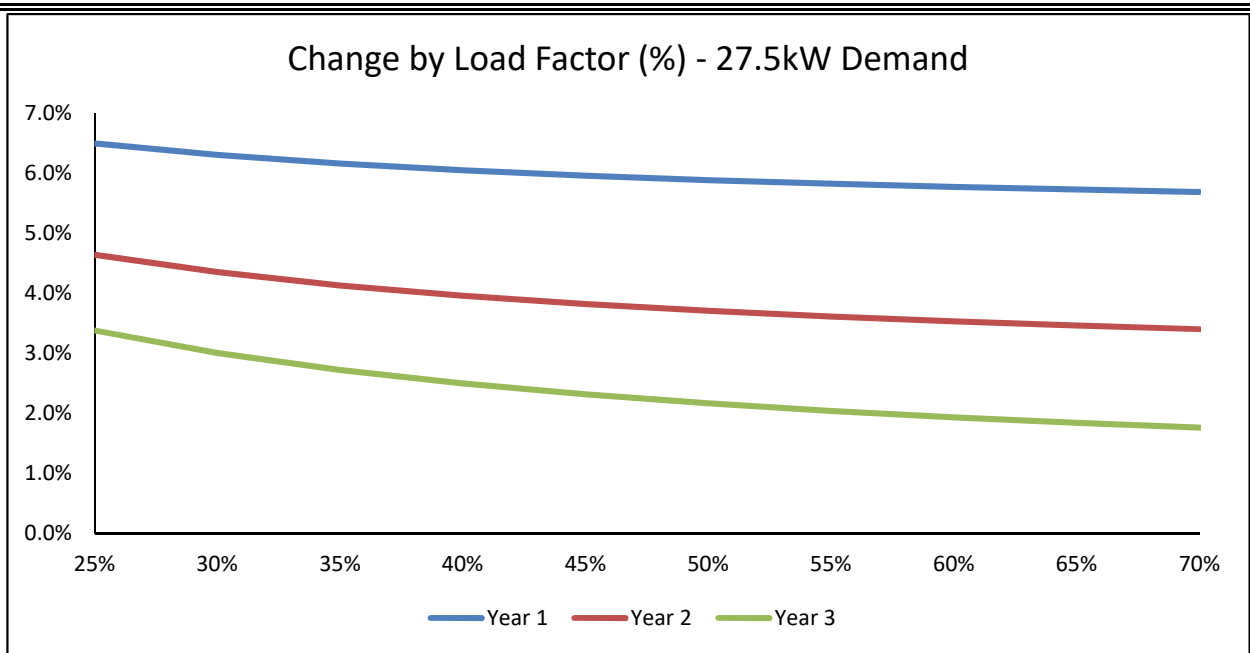


City of Ashland
Rate Design
Outdoor Lighting

Current Rates	Current	Year 1	Year 2	Year 3
Monthly Light Charge:				
Lamp				
HPS 5800 Non Res	\$ 21.69	\$ 23.15	\$ 23.80	\$ 24.50
HPS 22000 Non Res	\$ 31.31	\$ 33.40	\$ 34.65	\$ 35.65
HPS 50000 Non Res	\$ 50.08	\$ 53.55	\$ 55.55	\$ 57.15
HPS 5800 Res	\$ 16.68	\$ 17.85	\$ 18.60	\$ 19.15
HPS 22000 Res	\$ 24.09	\$ 25.70	\$ 26.50	\$ 27.25
HPS 50000 Res	\$ 38.53	\$ 41.20	\$ 42.75	\$ 44.00
Wood Pole	\$ 1.89	\$ 2.00	\$ 2.10	\$ 2.15
Revenues from Current Rates	\$ 19,703	\$ 21,061	\$ 21,848	\$ 22,489
Change from Previous		6.89%	3.74%	2.93%

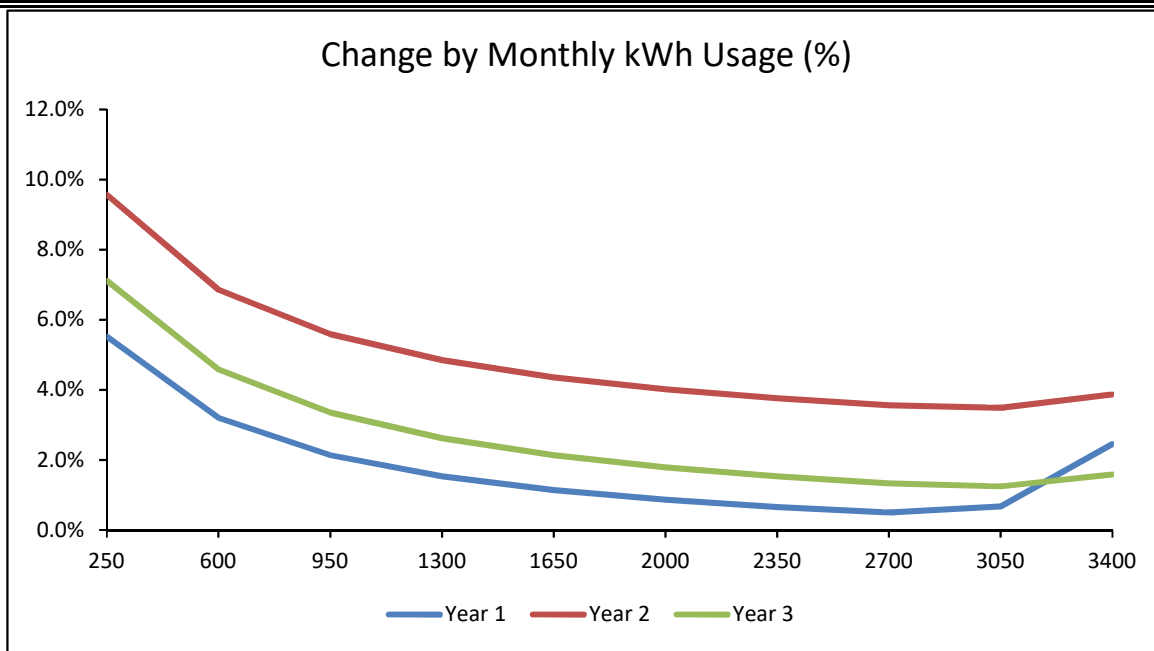
City of Ashland
Rate Design
Commercial Service Three Phase

Rates	Current	Year 1	Year 2	Year 3
Monthly Facilities Charge:				
30kw or Less	\$ 34.47	\$ 37.00	\$ 40.00	\$ 45.00
Over 30kW	\$ 112.10	\$ 112.10	\$ 112.10	\$ 112.10
Energy Charge:				
Block 1 (0 - 3,000 kWh)	\$ 0.07145	\$ 0.07514	\$ 0.07706	\$ 0.07754
Block 2 (3001 - 17,000 kWh)	\$ 0.07193	\$ 0.07562	\$ 0.07754	\$ 0.07802
Block 3 (Excess)	\$ 0.07212	\$ 0.07581	\$ 0.07773	\$ 0.07821
Demand Charge				
Block 1 (0 - 15 kW)	\$ -	\$ -	\$ -	\$ -
Block 2 (Excess)	\$ 4.12	\$ 4.75	\$ 5.50	\$ 6.25
Power Cost Adjustment:				
All Energy	\$ -	\$ -	\$ -	\$ -
Revenue from Rate	\$ 3,168,263	\$ 3,358,358	\$ 3,492,693	\$ 3,580,010
Change from Previous		6.0%	4.0%	2.5%



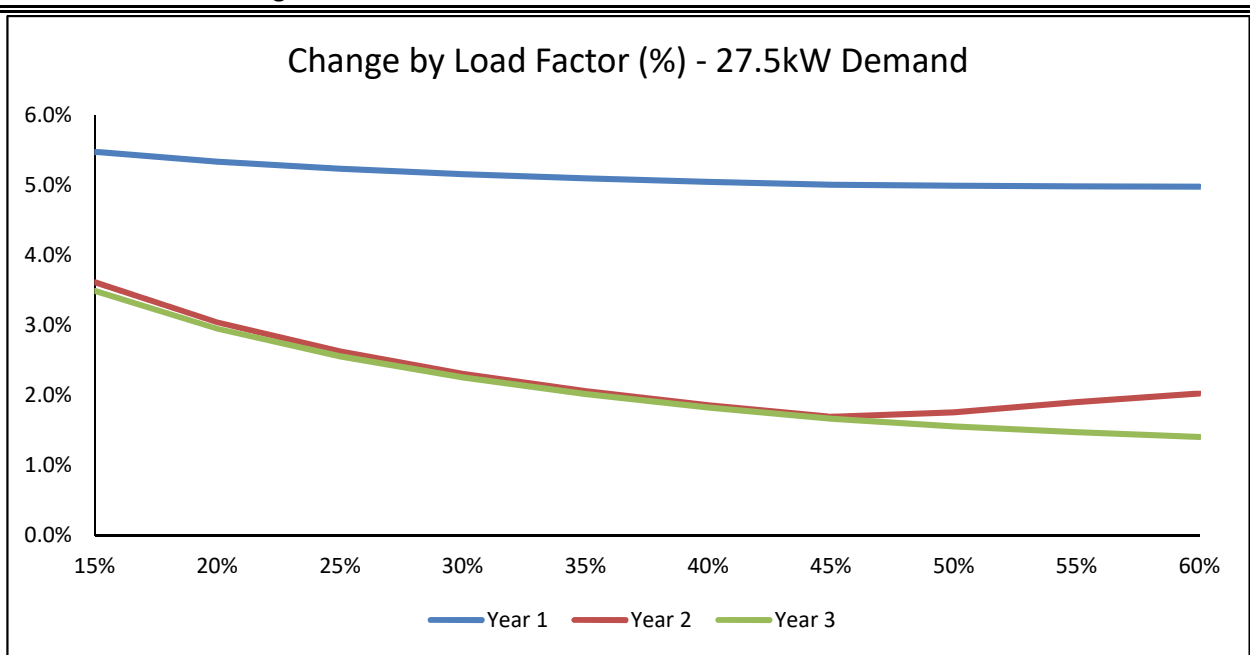
City of Ashland
Rate Design
Govt/Muni Single Phase

Rates	Current	Year 1	Year 2	Year 3
Monthly Facilities Charge:				
30kw or Less/Power Supply	\$ 17.23	\$ 18.50	\$ 21.00	\$ 23.00
Over 30kW	\$ 64.67	\$ 64.67	\$ 64.67	\$ 64.67
Energy Charge:				
Block 1 (0 - 3,000 kWh)	\$ 0.09437	\$ 0.09371	\$ 0.09562	\$ 0.09538
Block 2 (3001 - 20,000 kWh)	\$ 0.07077	\$ 0.08871	\$ 0.09562	\$ 0.10038
Block 3 (Excess)	\$ 0.06632	\$ 0.08871	\$ 0.09562	\$ 0.10038
Demand Charge				
Block 1 (0 - 15 kW)	\$ -	\$ -	\$ -	\$ -
Block 2 (Excess)	\$ 4.19	\$ 4.75	\$ 5.50	\$ 6.25
Revenue from Rate	\$ 222,773	\$ 242,597	\$ 257,883	\$ 267,940
Change from Previous		8.9%	6.3%	3.9%



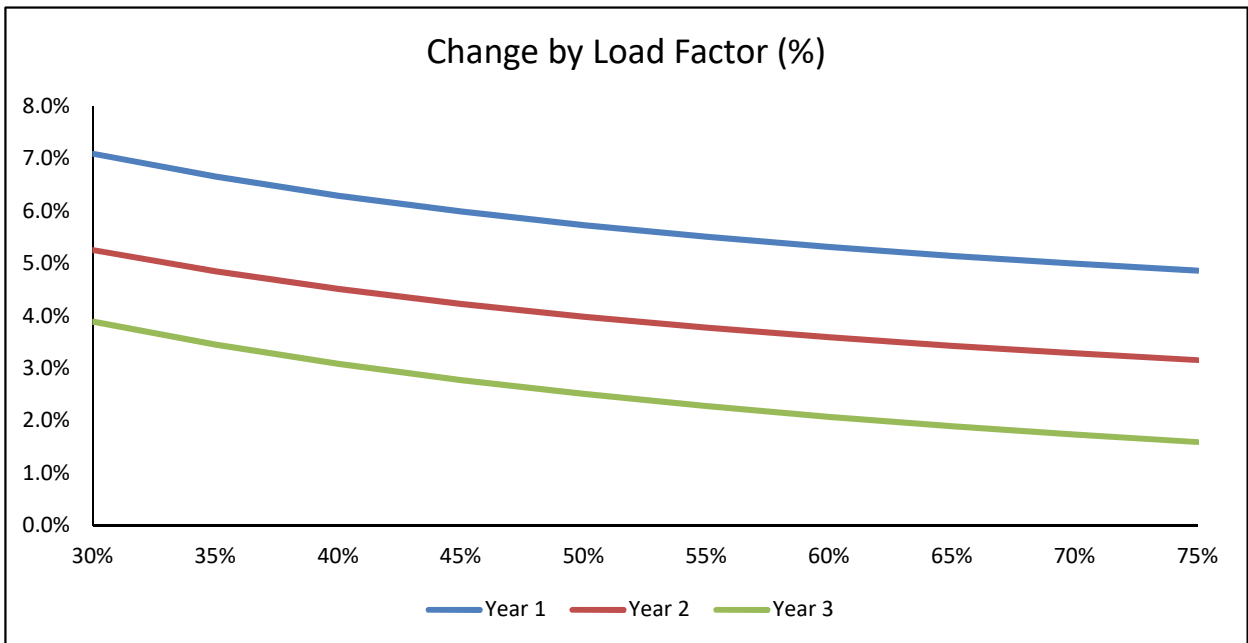
City of Ashland
Rate Design
Govt/Muni Three Phase

Rates	Current	Year 1	Year 2	Year 3
Monthly Facilities Charge:				
30kw or Less	\$ 34.47	\$ 37.00	\$ 40.00	\$ 45.00
Over 30kW	\$ 112.10	\$ 112.10	\$ 112.10	\$ 112.10
Energy Charge:				
Block 1 (0 - 3,000 kWh)	\$ 0.10082	\$ 0.10433	\$ 0.10433	\$ 0.10433
Block 2 (3001 - 20,000 kWh)	\$ 0.07645	\$ 0.07996	\$ 0.07996	\$ 0.07996
Block 3 (Excess)	\$ 0.07166	\$ 0.07517	\$ 0.07803	\$ 0.07837
Demand Charge				
Block 1 (0 - 15 kW)	\$ -	\$ -	\$ -	\$ -
Block 2 (Excess)	\$ 4.19	\$ 4.75	\$ 5.50	\$ 6.25
Power Cost Adjustment:				
All Energy	\$ -	\$ -	\$ -	\$ -
Revenue from Rate	\$ 917,686	\$ 968,159	\$ 1,004,465	\$ 1,027,065
Change from Previous		5.50%	3.75%	2.25%



City of Ashland
Rate Design
Governmental Large Service

Rates	Current	Year 1	Year 2	Year 3
Monthly Facilities Charge:				
Monthly Charge	\$ 2,639.36	\$ 2,639.36	\$ 2,639.36	\$ 2,639.36
Energy Charge:				
All Energy	\$ 0.05766	\$ 0.05912	\$ 0.05963	\$ 0.05902
Demand Charge				
All Demand	\$ 4.92	\$ 6.00	\$ 7.00	\$ 8.00
Power Cost Adjustment:				
All Energy	\$ -	\$ -	\$ -	\$ -
Revenue from Rate	\$ 878,093	\$ 926,259	\$ 960,993	\$ 982,616
Change from Previous		5.49%	3.75%	2.25%



Summary Report

CITY OF ASHLAND ELECTRIC DEPARTMENT

Electric Cost of Service Study and Financial Projection

October 2016



**Specializing in Cost of Service,
Rate Design, and Financial Analysis**

Rate Design and Financial Analysis

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October 2016

Mark Holden
Director of Electric Utility, Telecom and IT
City of Ashland Electric Department
90 N. Mountain Ave
Ashland OR

Dear Mr Holden;

We are pleased to present the Summary Report for the electric cost of service study and financial projection for the City of Ashland Electric Department (Ashland). This report was prepared to provide Ashland with a comprehensive examination of its existing rate structure by an outside party.

The specific purposes of this rate study are:

- Determine electric utility's revenue requirements for fiscal year 2018
- Identify cross-subsidies that may exist between rate classes
- Recommend rate adjustments needed to meet targeted revenue requirements
- Identify the appropriate monthly customer charge for each customer class

This report includes results of the electric cost of service study and financial projection and recommendations on future rate designs.

This report is intended for information and use by the utility and management for the purposes stated above and is not intended to be used by anyone except the specified parties.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Beauchamp", is written over a horizontal line.

Utility Financial Solutions, LLC
Mark Beauchamp
CPA, MBA, CMA
185 Sun Meadow Ct
Holland, MI 49424

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1. Introduction

This report was prepared to provide the City of Ashland Electric Department (Ashland) with an electric cost of service study and financial projection and a comprehensive examination of its existing rate structure by an outside party. The specific purposes of the study are identified below:

- 1) **Determine electric utility's revenue requirements for fiscal year 2018.** Ashland's revenue requirements were projected for the period from 2018 – 2022 and included adjustments for the following:
 - a. Projected power costs
 - b. Capital improvement plan projected over next five years
- 2) **Identify cross-subsidies that may exist between rate classes.** Cross-subsidies exist when certain customer classes subsidize the electric costs of other customers. The rate study identifies if cross-subsidies exist and practical ways to reduce the subsidies. The cost of service study was completed using 2018 projected revenues and expenses. The financial projections are for the period from 2018 – 2022.
- 3) **Recommend rate adjustments needed to meet targeted revenue requirements.** The primary purpose of this study is to identify appropriate revenue requirements and the rate adjustments needed to meet targeted revenue requirements. The report includes a long-term rate track for Ashland to help ensure the financial stability of the utility in future years.
- 4) **Unbundled electric rates.** The cost of providing electricity to customers consists of a number of components, including power generation, distribution, customer services, transmission, and transfers to the general fund. Electric unbundling identifies the cost of each component to aid the utility understanding of its cost structure.
- 5) **Identify the appropriate monthly customer charge for each customer class.** The monthly customer charge consists of fixed costs to service customers that do not vary based on the amount of electricity used.

2. Cost of Service Summary

Utility Rate Process

Ashland retained Utility Financial Solutions to review utility rates and cost of service and make recommendations on the appropriate course of action. This report includes results of the electric cost of service and unbundling study and recommendations on future rate designs.

Utility Revenue Requirements

To determine revenue requirements, the revenues and expenses for Fiscal Years 2014, 2015 and 2016, 2017 budget were analyzed, with adjustments made to reflect projected operating characteristics. ***The projected financial statements are for cost of service purposes only.***

Table 1 is the projected financial statement for the Electric Department from 2018-2022. The 2018 rate of return calculation established an operating income target of \$514k (See Table 5).

Operating income for 2018 is projected at \$(861)k and increases to \$(1.9)M in 2022. Operating income is one target that helps to determine if rate adjustments are needed. The following pages review cash flow and other factors which can be important indicators.

Table 1 – Financial Statements (without rate adjustments)

Description	Projected 2018	Projected 2019	Projected 2020	Projected 2021	Projected 2022
Operating Revenues:					
Electric Sales					
Intergovernmental	184,500	189,113	193,840	198,686	203,653
Charges for Services	14,466,358	14,498,322	14,529,240	14,553,779	14,578,179
Other Charges for Services Revenue (not rates)	260,350	266,859	273,530	280,368	287,378
Miscellaneous	111,788	112,035	112,273	112,463	112,652
Total Operating Revenues	\$ 15,022,996	\$ 15,066,327	\$ 15,108,884	\$ 15,145,297	\$ 15,181,862
Operating Expenses:					
Purchases					
Electric - Supply	\$ 6,886,756	\$ 6,901,972	\$ 7,055,024	\$ 7,349,618	\$ 7,361,940
Electric - Transmission	957,477	957,477	976,626	1,015,691	1,015,691
Total Power Supply Expense	\$ 7,844,232	\$ 7,859,449	\$ 8,031,651	\$ 8,365,309	\$ 8,377,631
Distribution					
Electric - Distribution	\$ 3,500,018	\$ 3,587,519	\$ 3,677,207	\$ 3,769,137	\$ 3,863,365
Total Distribution Expense	\$ 3,500,018	\$ 3,587,519	\$ 3,677,207	\$ 3,769,137	\$ 3,863,365
Other Operating Expenses (Revenues)					
Admin - Conservation	\$ 739,153	\$ 757,631	\$ 776,572	\$ 795,987	\$ 815,886
Electric - Supply (non BPA)	97,990	100,440	102,951	105,525	108,163
Franchise Fee	1,472,671	1,476,518	1,480,277	1,483,415	1,486,556
Allocations					
Central Service - Power Supply (non BPA)	385,060	394,687	404,554	414,668	425,034
Central Service - Distribution	857,095	878,522	900,485	922,997	946,072
Use of Facilities Charge - Distribution	133,250	136,581	139,996	143,496	147,083
Technology Debt - Distribution	541,300	541,300	541,300	541,300	541,300
Depreciation Expense	313,406	325,406	349,406	373,406	397,406
Total Other Operating Expenses	\$ 4,539,924	\$ 4,611,085	\$ 4,695,541	\$ 4,780,793	\$ 4,867,500
Total Operating Expenses	\$ 15,884,175	\$ 16,058,053	\$ 16,404,398	\$ 16,915,239	\$ 17,108,497
Operating Income	\$ (861,179)	\$ (991,725)	\$ (1,295,515)	\$ (1,769,941)	\$ (1,926,635)

Projected Cash Flow

Table 2 is the projected cash flow for 2018-2022, including projections of capital improvements as provided by Ashland. Changes in the capital improvement plan can greatly affect the cash balance and recommended minimum cash reserve target. The cash balance for 2018 is projected at \$163k and \$(6.85)M in 2022. The recommended minimum cash reserve level for 2018 is \$3M and \$3.25M for 2022.

Table 2 – Projected Cash Flows (without rate adjustments)

Description	Projected 2018	Projected 2019	Projected 2020	Projected 2021	Projected 2022
Projected Cash Flows					
Net Income	\$ (855,886)	\$ (991,861)	\$ (1,296,193)	\$ (1,770,349)	\$ (1,926,770)
Depreciation Expense/Amortization	313,406	325,406	349,406	373,406	397,406
Subtract Debt Principal	(21,714)	(21,714)	(21,714)	(21,714)	(21,714)
Cash Available from Operations	\$ (564,194)	\$ (688,170)	\$ (968,502)	\$ (1,418,657)	\$ (1,551,079)
Estimated Annual Capital Additions	576,050	600,000	600,000	600,000	600,000
Net Cash From Operations	\$ (1,140,244)	\$ (1,288,170)	\$ (1,568,502)	\$ (2,018,657)	\$ (2,151,079)
Beginning Cash Balance	\$ 1,303,054	\$ 162,810	\$ (1,125,360)	\$ (2,693,862)	\$ (4,712,519)
Ending Cash Balance	\$ 162,810	\$ (1,125,360)	\$ (2,693,862)	\$ (4,712,519)	\$ (6,863,598)
Total Cash Available	\$ 162,810	\$ (1,125,360)	\$ (2,693,862)	\$ (4,712,519)	\$ (6,863,598)
Recommended Minimum	\$ 3,037,822	\$ 3,080,294	\$ 3,137,714	\$ 3,215,368	\$ 3,232,382

Minimum Cash Reserve

Table 3 details the minimum level of cash reserves required to help ensure timely replacement of assets and to provide financial stability of the utility. The methodology used to establish this target is based on certain assumptions related to a percentage of operating expense, historical investment, capital improvements, and debt service to be kept in cash reserves. Based on these assumptions, Ashland should maintain a minimum of \$3M in cash reserves for 2018 and \$3.25M in 2022.

Table 3 – Minimum Cash Reserves (without rate adjustments)

Description	Projected 2018	Projected 2019	Projected 2020	Projected 2021	Projected 2022
Minimum Cash Reserve Allocation					
Operation & Maintenance Less Depreciation Expense	12.3%	12.3%	12.3%	12.3%	12.3%
Purchase Power Expense	12.3%	12.3%	12.3%	12.3%	12.3%
Historical Rate Base	3%	3%	3%	3%	3%
Current Portion of Debt Service Payment	100%	100%	100%	100%	100%
Five Year Capital Improvements - Net of bond proceeds	20%	20%	20%	20%	20%
Calculated Minimum Cash Level					
Operation & Maintenance Less Depreciation Expense	\$ 952,587	\$ 970,668	\$ 989,179	\$ 1,008,065	\$ 1,027,413
Purchase Power Expense	964,841	966,712	987,893	1,028,933	1,030,449
Historical Rate Base	502,521	520,521	538,521	556,521	574,521
Current Portion of Debt Service Reserve	22,664	22,393	22,121	21,850	-
Five Year Capital Improvements - Net of bond proceeds	595,210	600,000	600,000	600,000	600,000
Minimum Cash Reserve Levels	\$ 3,037,822	\$ 3,080,294	\$ 3,137,714	\$ 3,215,368	\$ 3,232,382
Projected Cash Reserves	\$ 162,810	\$ (1,125,360)	\$ (2,693,862)	\$ (4,712,519)	\$ (6,863,598)

Projected cash balances fall below the recommended minimums during the projection period.

Debt Coverage Ratio

As Ashland has no bond debt and minimal other debt this section is included for educational purposes only so readers can be informed if considering debt. Debt coverage ratio can be ignored from the point of view of a current target.

Table 4 is the projected debt coverage ratios with capital additions as provided by Ashland. The coverage required in bond ordinances is typically 1.15 – 1.20, however the minimum recommended debt coverage ratio is established at 1.35 – 1.40 for projection purposes a 0.20 premium to ordinance. Maintaining a higher debt coverage ratio is good business practice and helps to achieve the following:

- Helps to ensure adequate funds are available to meet debt service payments in years when sales are low due to temperature fluctuations.
- Obtain higher bond rating, if revenue bonds are sold in the future, to lower interest cost.

Table 4 – Projected Debt Coverage Ratios (without rate adjustments)

Description	Projected 2018	Projected 2019	Projected 2020	Projected 2021	Projected 2022
Fixed Cost Coverage Ratio					
Cash Available for Debt Service	\$ (541,258)	\$ (665,506)	\$ (946,109)	\$ (1,396,536)	\$ (1,529,229)
Off System Debt	-	-	-	-	-
Total Available	\$ (541,258)	\$ (665,506)	\$ (946,109)	\$ (1,396,536)	\$ (1,529,229)
Debt Service Including Off System Debt	\$ 22,936	\$ 22,664	\$ 22,393	\$ 22,121	\$ 21,850
Fixed Costs Coverage Ratio	(23.60)	(29.36)	(42.25)	(63.13)	(69.99)
Minimum Fixed Costs Coverage Ratio	1.4	1.4	1.4	1.4	1.4

Debt coverage is adequate for the projection period without changes in rates as the debt is minimal and not subject to ordinances or coverage covenants.

Rate of Return

The optimal target for setting rates is the establishment of a target operating income to help ensure the following:

- Funding of the inflationary increase on the assets invested in the system. The inflation on the replacement of assets invested in the utility should be recouped through the Operating Income.
- Funding of depreciation expense.
- Adequate rate of return on investment to help ensure current customers are paying their fair share of the use of the infrastructure and not deferring the charge to future generations.
- Funding of interest expense on the outstanding principal on debt. Interest expense is below the operating income line and needs to be recouped through the operating income balance.

As improvements are made to the system, the optimal operating income target will increase unless annual depreciation expense is greater than yearly capital improvements. The revenue requirements for the study are set on the utility basis. Table 5 identifies the utility basis target established for 2018 is \$514k and increases to \$594k in 2022.

Table 5 – Rate of Return Calculation

Description	Projected 2018	Projected 2019	Projected 2020	Projected 2021	Projected 2022
Target Operating Income Determinants					
Net Book Value/Working Capital	\$ 7,398,546	\$ 7,673,140	\$ 7,923,734	\$ 8,150,329	\$ 8,352,923
Outstanding Principal on Debt	86,857	65,143	43,429	21,714	-
System Equity	\$ 7,311,689	\$ 7,607,997	\$ 7,880,306	\$ 8,128,614	\$ 8,352,923
Target Operating Income Allocation					
Interest on Debt	1.41%	1.46%	1.56%	1.87%	0.00%
System Equity	7.02%	7.01%	7.02%	7.06%	7.11%
Target Operating Income					
Interest on Debt	\$ 1,221	\$ 950	\$ 679	\$ 407	\$ 136
System Equity	\$ 513,175	\$ 533,305	\$ 553,421	\$ 573,539	\$ 593,671
Target Operating Income	\$ 514,397	\$ 534,255	\$ 554,100	\$ 573,946	\$ 593,807
Projected Operating Income	\$ (861,179)	\$ (991,725)	\$ (1,295,515)	\$ (1,769,941)	\$ (1,926,635)
Rate of Return in %	7.0%	7.0%	7.0%	7.0%	7.1%

Recommended Rate Track

The study identifies increasing current revenues in 2018, and increase annually thereafter to maintain debt coverage ratios and minimum cash targets. Table 6 is a summary of the financial results detailing the recommended revenue adjustments required to meet target operating income.

Table 6 – Recommended Revenue Adjustments

Fiscal Year	Projected Rate Adjustments	Projected Expenses	Projected Revenues	Adjusted Operating Income	Target Operating Income	Projected Cash Balances	Recommended Minimum Cash
2018	6.90%	\$ 15,983,993	\$ 16,021,174	\$ 37,181	\$ 514,397	\$ 1,061,170	\$ 3,050,128
2019	2.75%	16,200,713	16,496,007	295,294	534,255	1,064,512	3,097,882
2020	2.75%	16,591,249	16,983,654	392,404	554,100	1,189,252	3,160,751
2021	2.75%	17,147,575	17,478,199	330,623	573,946	1,277,106	3,244,012
2022	2.75%	17,387,713	17,986,935	599,222	593,807	1,658,269	3,266,806

Cost of Service Summary Results

A cost of service study was completed to determine the cost of providing service to each class of customers and to assist in design of electric rates for customers. A cost of service study consists of the following general steps:

- 1) Determine utility revenue requirement for test year 2018
- 2) Classify utility expenses into common cost pools
- 3) Allocate costs to customer classes based on the classes' contribution to utility expenses
- 4) Compare revenues received from each class to the cost of service

The cost of service summary is included as Table 7 which compares the projected cost to serve each class with the revenue received from each class. The "% change" column is the revenue adjustment necessary

to meet projected cost of service requirements. The cost of service summary uses the current rates including any adjustment factors.

Table 7 – Cost of Service Summary

Customer Class	Cost of Service	Projected Revenues	% Change
Residential Single-Phase	\$ 8,343,058	\$ 7,410,275	12.6%
Seasonal Residential Single	75,378	60,785	24.0%
Telecommunications	73,981	68,342	8.3%
Outdoor Lighting	19,156	19,703	-2.8%
Commercial Service Single Phase	1,907,280	1,720,561	10.9%
Commercial Service Three Phase	3,333,918	3,168,263	5.2%
Governmental Service Single Phase	132,089	100,297	31.7%
Governmental Service Three Phase	475,225	438,354	8.4%
Municipal Service Single Phase	151,481	122,475	23.7%
Municipal Service Three Phase	440,310	479,332	-8.1%
Governmental Large Service	890,057	877,970	1.4%
Total	\$ 15,841,934	\$ 14,466,358	9.5%

Cost of Service Results

Table 8 shows the average cost of service per kWh and compares the cost to the average revenue per kWh for each customer class.

Table 8 – Average Cost per kWh vs. Average Revenue per kWh

Customer Class	Cost of Service \$/kWh	Projected Revenues \$/kWh
Residential Single-Phase	\$ 0.0965	\$ 0.0857
Seasonal Residential Single	0.1066	0.0859
Telecommunications	0.1185	0.1095
Outdoor Lighting	0.0960	0.0988
Commercial Service Single Phase	0.1060	0.0957
Commercial Service Three Phase	0.0897	0.0852
Governmental Service Single Phase	0.1345	0.1021
Governmental Service Three Phase	0.1052	0.0971
Municipal Service Single Phase	0.1361	0.1100
Municipal Service Three Phase	0.0795	0.0865
Governmental Large Service	0.0762	0.0752

Cost differences result from usage patterns of customers and how each class of customer used facilities based on load data provided by Ashland.

Distribution Costs

Separation of distribution costs help identify distribution charges for each customer class and the fixed monthly customer charge. Distribution charge includes the following costs:

- Operation and maintenance of distribution & transmission system
- Contributions to general fund
- Customer service
- Customer accounting
- Meter reading
- Billing
- Meter operation & maintenance
- Administrative expenses

The distribution charges consist of two components:

- Monthly customer charge to recover the costs of meter reading, billing, customer service, and a portion of maintenance and operations of the distribution system.
- Distribution rate based on billing parameter, (kW or kWh) to recover the cost to operate and maintain the distribution system. Table 9 identifies the cost-based distribution rates for customer classes.

Table 9 – Distribution Costs by Customer Class (COS)

Customer Class	Monthly Customer		Billing Basis
	Charge	Distribution Rate	
Residential Single-Phase	\$ 14.09	\$ 0.0296	kWh
Seasonal Residential Single	16.50	0.0418	kWh
Telecommunications	19.45	0.0330	kWh
Commercial Service Single Phase	43.46	11.45	kW
Commercial Service Three Phase	103.90	10.35	kW
Governmental Service Single Phase	51.68	10.16	kW
Governmental Service Three Phase	155.98	11.19	kW
Municipal Service Single Phase	58.97	12.75	kW
Municipal Service Three Phase	127.75	10.64	kW
Governmental Large Service	1,635.79	11.17	kW

Power Supply Costs

Table 10 identifies the average cost of providing power supply to customers of Ashland.

Table 10 – Power Supply Costs by Customer Class

Customer Class	Demand	Billing Basis	Energy	Billing Basis
Residential Single-Phase	\$ 0.0077	kWh	\$ 0.0392	kWh
Seasonal Residential Single	0.0100	kWh	0.0391	kWh
Telecommunications	0.0109	kWh	0.0394	kWh
Commercial Service Single Phase	2.80	KW	0.0393	kWh
Commercial Service Three Phase	2.51	KW	0.0394	kWh
Governmental Service Single Phase	3.14	KW	0.0394	kWh
Governmental Service Three Phase	3.39	KW	0.0394	kWh
Municipal Service Single Phase	3.29	KW	0.0392	kWh
Municipal Service Three Phase	3.38	KW	0.0394	kWh
Governmental Large Service	2.79	KW	0.0385	kWh

Combined Cost Summary

Table 11 identifies the cost of service rates for each customer class. Charging these rates would directly match the cost of providing service to customers identified in this study.

Table 11 – Total Costs by Customer Class

Customer Class	Current Average Customer Charge	COS Monthly Charge	COS Conservation Charge	COS Customer Charge
Residential Single-Phase	\$ 9.62	\$ 14.09	\$ 3.21	\$ 10.87
Seasonal Residential Single	9.62	16.50	5.60	10.89
Telecommunications	17.23	19.45	3.49	15.96
Commercial Service Single Phase	20.29	43.46	7.81	35.65
Commercial Service Three Phase	49.95	103.90	36.07	67.83
Governmental Service Single Phase	17.23	51.68	18.00	33.68
Governmental Service Three Phase	101.01	155.98	87.73	68.25
Municipal Service Single Phase	18.79	58.97	8.37	50.60
Municipal Service Three Phase	54.72	127.75	59.73	68.02
Governmental Large Service	2,639.36	1,635.79	1,413.90	221.89

3. Functionalization of Costs

Delivery of electricity consists of many components that bring electricity from the power supply facilities to the communities and eventually into customer facilities. The facilities consist of four major components: transmission, distribution, customer-related services, and administration. Following are general descriptions of each of these facilities and the sub-breakdowns within each category.

Transmission

The transmission system is comprised of four types of subsystems that operate together:

- 1) Backbone and inter-tie transmission facilities are the network of high voltage facilities through which a utility's major production sources are integrated.
- 2) Generation set-up facilities are the substations through which power is transformed from a utility's generation voltages to its various transmission voltages.
- 3) Sub-transmission plant consists of lower voltage facilities to transfer electric energy from convenient points on a utility's backbone system to its distribution system.
- 4) Radial transmission facilities are those that are not networked with other transmission lines but are used to serve specific loads directly.

Operation of the transmission system also consists of providing certain services that ensure a stable supply of power. These services are typically referred to as ancillary services. The Federal Energy Regulatory Commission (FERC) has defined six ancillary service charges for the use of transmission facilities. For Ashland, these charges will be passed-through charges by the control area operator. Ancillary services consist of the following:

- **Mandatory Ancillary Service Charges:**
 - Reactive Supply and Voltage Control Regulation and Frequency Response Service
 - Energy Imbalance Charges
 - Operating Reserves Spinning
 - Operating Reserves Supplemental
 - Reactive Power Supply

Terminology of Cost of Service

FUNCTIONALIZATION – Cost data arranged by functional category (e.g. power supply, transmission, distribution)

CLASSIFICATION – Assignment of functionalized costs to cost components (e.g. demand, energy and customer related).

ALLOCATION – Allocating classified costs to each class of service based on each class's contribution to that specific cost component.

DEMAND COSTS – Costs that vary with the maximum or peak usage. Measured in kilowatts (kW)

ENERGY COSTS – Costs that vary over an extended period of time. Measured in kilowatt-hours (kWh)

CUSTOMER COSTS – Costs that vary with the number of customers on the system, e.g. metering costs.

DIRECT ASSIGNMENT – Costs identified as belonging to a specific customer or group of customers.

Power losses from use of transmission system

Distribution

The distribution facilities connect the customer with the transmission grid to provide the customer with access to the electrical power that has been generated and transmitted. The distribution plant includes substations, primary and secondary conductors, poles, and line transformers that are jointly used and in the public right-of-way.

Substations typically separate the distribution plant from the transmission system. The substation power transformer “steps down” the voltage to a level that is more practical to install on and under city streets.

Distribution circuits are divided into primary and secondary voltages with the primary voltages usually ranging between 35 kV and 4 kV and the secondary below 4 kV.

Distribution Customer Types

Sub-transmission customers are served directly from the substation feeder and bypass both the secondary and primary distribution lines. The charges for this type of customer should reflect the cost of the substation and not include the cost of primary or secondary line charges.

Primary customers are typically referred to as customers who have purchased, owned, and maintained their own transformers that convert the voltage to the secondary voltage level. The rates for these customers should reflect the cost of substations and the cost of primary distribution lines and not include the cost of secondary line extensions.

Secondary customers have the services provided by the utilities directly into their facilities. The utility provides the customer with the transformer and the connection on the customers’ facilities.

Customer-Related Services

Certain administrative-type services are necessary to ensure customers are provided service connections and disconnections in a timely manner and the facilities are in place to read meters and bill for customer usages. These services typically consist of the following components:

- Customer Services – The cost of providing personnel to assist customers with questions and dispatch personnel to connect and disconnect meters.
- Billing and Collections – The cost of billing and collections personnel, postage, and supplies.
- Meter Reading – The cost of reading customers’ meters.
- Meter Operation and Maintenance – The cost of installing and maintaining customer meters.

Administrative Services

These costs are sometimes referred to as overhead costs and relate to functions that cannot be directly attributed to any service. These costs are spread to the other services through an allocator such as labor, expenses, or total rate base. These costs may consist of City administrative expenses, property insurance, and wages for higher level management of the utility.

System Losses

As energy moves through each component of the transmission and distribution system, some of the power is lost and cannot be sold to customers. Losses vary based on time of day and season. Typically, as system usage increases or ambient temperature increases, the percentages of losses that occur also increase. These losses are recovered from distribution customers through an analysis of the peak losses that occur in the system. The average system losses and unaccounted for energy for Ashland are approximately 4.1%. (Typical municipal system losses are approximately 5.4%)

4. Unbundling Process

The cost of power supply, distribution, and customer services are identified as part of the unbundling process and are the first step in determining unbundled charges to customers. The total revenue requirements of \$15.85M are separated into four categories identified in Table 12.

Table 12 – Breakdown of Ashland Cost Structure

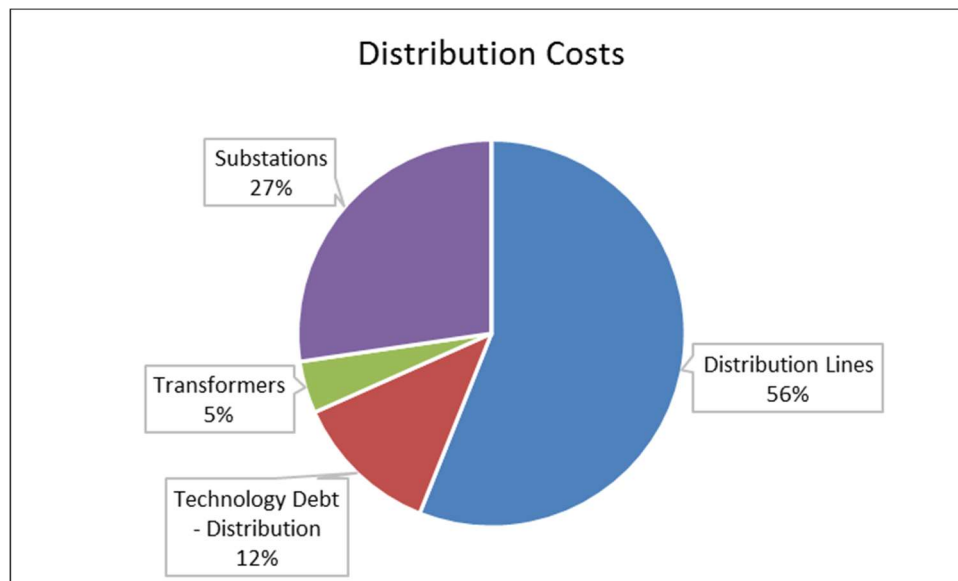
Utility Costs	
Power Supply	\$ 7,844,232
Distribution	\$ 4,406,582
Franchise Fee	\$ 1,472,671
Customer	\$ 2,118,448
	\$ 15,841,934

Ashland is projected to expend 49% of its total costs toward power supply. Distribution related costs are 28%; franchise fee is 10% and customer service 13%. These components are broken down into each of the subcomponents and are identified in the following sections.

Distribution Breakdown

Distribution rates consist of a number of different components. Total distribution-related costs of 4.4M for 2018 are broken down into the main components including substations, transformers, and distribution lines. Figure 1 shows the breakdown of distribution components identified in the study.

Figure 1 – Breakdown of Distribution Costs



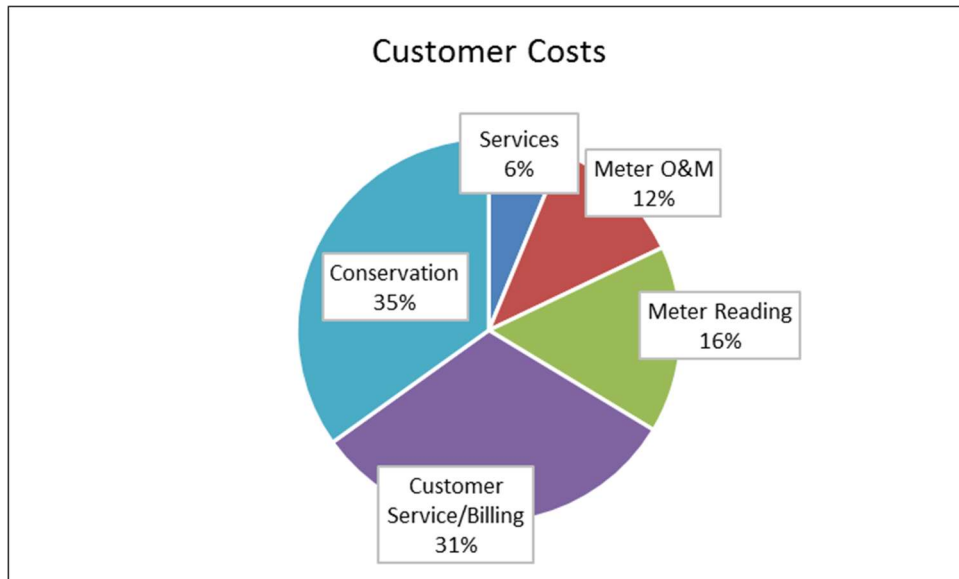
Each of these components is allocated to customer groups based on certain factors established in the study. These factors are based on the efficiency of each customer class and the time of day or the season

the electricity is used. Other factors are also considered, such as the length of line extensions to reach certain customer classes.

Customer-Related Cost Breakdown

Ashland total expenses for customer-related costs are \$2.12M for 2018. The cost is broken down into the components identified in Figure 2.

Figure 2 – Breakdown of Customer Costs



Power Supply Cost Breakdown

Power supply costs for 2018 were made up of purchased power expenses.

5. Significant Assumptions

This section outlines the procedures used to develop the cost of service and unbundling study for Ashland and the related significant assumptions.

Forecasted Operating Expenses

Forecasted expenses were based on 2014, 2015 and 2016, 2017 budget adjusted for power supply costs and inflation. The table below is a summary of the expenses used in the analysis; the projected operating expenses include an adjustment for any city contributions.

Table 13 – Projected Operating Expenses for 2018– 2022

Description	Projected 2018	Projected 2019	Projected 2020	Projected 2021	Projected 2022
Operating Expenses:					
Purchases					
Electric - Supply	\$ 6,886,756	\$ 6,901,972	\$ 7,055,024	\$ 7,349,618	\$ 7,361,940
Electric - Transmission	957,477	957,477	976,626	1,015,691	1,015,691
Total Power Supply Expense	\$ 7,844,232	\$ 7,859,449	\$ 8,031,651	\$ 8,365,309	\$ 8,377,631
Distribution					
Electric - Distribution	\$ 3,500,018	\$ 3,587,519	\$ 3,677,207	\$ 3,769,137	\$ 3,863,365
Total Distribution Expense	\$ 3,500,018	\$ 3,587,519	\$ 3,677,207	\$ 3,769,137	\$ 3,863,365
Other Operating Expenses (Revenues)					
Admin - Conservation	\$ 739,153	\$ 757,631	\$ 776,572	\$ 795,987	\$ 815,886
Electric - Supply (non BPA)	97,990	100,440	102,951	105,525	108,163
Franchise Fee	1,472,671	1,476,518	1,480,277	1,483,415	1,486,556
Allocations					
Central Service - Power Supply (non BPA)	385,060	394,687	404,554	414,668	425,034
Central Service - Distribution	857,095	878,522	900,485	922,997	946,072
Use of Facilities Charge - Distribution	133,250	136,581	139,996	143,496	147,083
Technology Debt - Distribution	541,300	541,300	541,300	541,300	541,300
Depreciation Expense	313,406	325,406	349,406	373,406	397,406
Total Other Operating Expenses	\$ 4,539,924	\$ 4,611,085	\$ 4,695,541	\$ 4,780,793	\$ 4,867,500
Total Operating Expenses	\$ 15,884,175	\$ 16,058,053	\$ 16,404,398	\$ 16,915,239	\$ 17,108,497
Operating Income	\$ (861,179)	\$ (991,725)	\$ (1,295,515)	\$ (1,769,941)	\$ (1,926,635)

Power supply costs from 2018 – 2022 are based on Ashland’s current charges adjusted for system growth factors and inflation.

Load Data

Load data is one of the most critical components of a cost of service study. Information from the billing statistics were used to determine the usage patterns of each customer class after reconciling revenues with financial statements to ensure a good basis for development of the study.

Annual Projection Assumptions

The kWh sales forecast is based on FY2016 actual adjusted for 0.0625% growth. Table 14 details growth, inflation of expenses, changes in purchase power costs and interest earned on investments.

Table 14 – Projection Annual Escalation Factors 2018– 2022

Fiscal Year	Inflation	Growth	Purchase Power Change	Purchase Power Transmission	Investment Income
2018	2.5%	0.2%	6.0%	4.0%	0.5%
2019	2.5%	0.2%	0.0%	0.0%	0.5%
2020	2.5%	0.2%	2.0%	2.0%	0.5%
2021	2.5%	0.2%	4.0%	4.0%	0.5%
2022	2.5%	0.2%	0.0%	0.0%	0.5%

System Loss Factors

Losses occurring from the transmission and distribution of electricity can vary from year to year depending upon weather and system loading.

Revenue Forecast

The revenue forecast was based on FY2016 usages adjusted for growth rate assumptions.

6. Recommendations and Additional Information

We recommend that the utility move toward cost of service for each customer class.

The study indicates rate adjustments are needed to meet minimum cash and operating income targets. To ensure the utility meets financial targets and remains financially stable, the rate track identified in should be considered:

Table 15 – Recommended Rate Adjustments 2018– 2022

Fiscal Year	Projected Rate Adjustments	Projected Expenses	Projected Revenues	Adjusted Operating Income	Target Operating Income	Projected Cash Balances	Recommended Minimum Cash
2018	6.90%	\$ 15,983,993	\$ 16,021,174	\$ 37,181	\$ 514,397	\$ 1,061,170	\$ 3,050,128
2019	2.75%	16,200,713	16,496,007	295,294	534,255	1,064,512	3,097,882
2020	2.75%	16,591,249	16,983,654	392,404	554,100	1,189,252	3,160,751
2021	2.75%	17,147,575	17,478,199	330,623	573,946	1,277,106	3,244,012
2022	2.75%	17,387,713	17,986,935	599,222	593,807	1,658,269	3,266,806

The cost of service study identified some customer classes are subsidizing other customer classes. We recommend Ashland moves toward cost of service using a bandwidth of plus or minus 2%. Using the 6.9% rate adjustment, this would result in no customer class given a rate increase greater than 8.9% and the lowest increase would be 4.9%. Table 16 identifies the cost of service charges compared with the projected current revenues for each class. Classes that indicate a lower % change than the total percentage change are providing subsidy to other customer classes, conversely customer classes with a higher % change than the total percentage are receiving subsidy.

Table 16 – Cost of Service Summary Results

Customer Class	Cost of Service	Projected Revenues	% Change
Residential Single-Phase	\$ 8,343,058	\$ 7,410,275	12.6%
Seasonal Residential Single	75,378	60,785	24.0%
Telecommunications	73,981	68,342	8.3%
Outdoor Lighting	19,156	19,703	-2.8%
Commercial Service Single Phase	1,907,280	1,720,561	10.9%
Commercial Service Three Phase	3,333,918	3,168,263	5.2%
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Municipal Service Single Phase	151,481	122,475	23.7%
Municipal Service Three Phase	440,310	479,332	-8.1%
Governmental Large Service	890,057	877,970	1.4%
Total	\$ 15,841,934	\$ 14,466,358	9.5%

Ashland may consider movements in the customer charges to move toward cost of service based customer charges to help ensure fixed distribution charges are collected in the customer charge. Table 17 compares the total cost of service monthly customer charges with the current charges. By charging cost of service rates for the monthly charge Ashland reduces its risk associated with power usage fluctuations due to weather etc.

Table 17 – Customer Charge Comparison

Customer Class	Current Average Customer Charge	COS Monthly Charge
Residential Single-Phase	\$ 9.62	\$ 14.09
Seasonal Residential Single	9.62	16.50
Telecommunications	17.23	19.45
Commercial Service Single Phase	20.29	43.46
Commercial Service Three Phase	49.95	103.90
Governmental Service Single Phase	17.23	51.68
Governmental Service Three Phase	101.01	155.98
Municipal Service Single Phase	18.79	58.97
Municipal Service Three Phase	54.72	127.75
Governmental Large Service	2,639.36	1,635.79

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Accountant's Compilation Report

Governing Body
City of Ashland Electric Department

The accompanying forecasted statements of revenues and expenses of the City of Ashland Electric Department (utility) were compiled for the year ending December 31, 2018 in accordance with guidelines established by the American Institute of Certified Public Accountants.

The purpose of this report is to assist management in forecasting revenue requirements and determining the cost to service each customer class. This report should not be used for any other purpose.

A compilation is limited to presenting, in the form of a forecast; information represented by management and does not include evaluation of support for any assumptions used in projecting revenue requirements. We have not audited the forecast and, accordingly, do not express an opinion or any other form of assurance on the statements or assumptions accompanying this report.

Differences between forecasted and actual results will occur since some assumptions may not materialize and events and circumstances may occur that were not anticipated. Some of these variations may be material. Utility Financial Solutions has no responsibility to update this report after the date of this report.

This report is intended for information and use by the governing body and management for the purposes stated above. This report is not intended to be used by anyone except the specified parties.

UTILITY FINANCIAL SOLUTIONS

Mark Beauchamp, CPA, CMA, MBA
Holland, MI
October 2016