To: Chris Roy, Steve Klionsky
From: Dave Beavers
Date: 1/7/20
Re: Strawman Proposal for TOU Rate Evaluation Process for Discussion

I. Purpose

Suggest a process that will provide BL, LBAC, and other interested Town entities with a framework, and the information needed, to assess the potential benefits and downsides of various TOU Rate options. This process takes advantage of data collected from Smart meters installed at residential customers – a unique advantage for BL compared to other utilities without Smart meters.

II. Goals

The table below suggests explicit goals that a TOU Rate should help achieve. Various TOU Rate structures and their impacts on BL customers should be assessed against these goals.

STRAWMAN: PROPOSED GOALS FOR TOU IMPLEMENTATION	
Goal	Rationale
Align customer savings (from reduced energy use) with savings for BL due to the reduction	Reducing energy use during peak periods can reduce BL energy, capacity and transmission costs. TOU rate pricing can incentivize customer energy reduction during these periods.
Support Strategic Electrification	TOU Rates could support Strategic Electrification by reducing the cost of heating or EV charging in off-peak/ winter periods through a lower electric rate (relative to the current rate) during these periods. A TOU rate may also provide a natural incentive for installation of energy storage devices to be discharged during TOU peak pricing periods.
Protect Low-Income Customers	The annual bill for low-income customers should not increase substantially. If TOU Rates result in substantially higher summer bills (but are offset by lower winter bills) some means to flatten out monthly bills could be offered.
Support Energy Efficiency / Solar	Changes in annual savings($) from EE/Solar under a TOU Rate should be reviewed in order to protect investments in these technologies.
Ensure BL Revenue Sufficiency and Stability	The TOU Rate should raise enough revenue to support BL in a stable manner.
Provide for Easy Implementation	TOU Rates should be as simple as possible and allow customers clear ways to save on their electricity bills.

III. Customer Scenarios

Representative hourly-use profiles to be developed based on BL Smart meter data.

A. Strawman Residential Scenarios

Customer Scenario	Description
Light User	Represents customers with annual loads at the 10th percentile or lower
Median User	Represents customers with annual loads at or near the 50th percentile
Heavy User	Represents customers with annual loads at the 90th percentile or higher
Strategic Electrifier	Represents customers with EV, HP, etc..
Solar Home	Customers with solar installed; will need to compare hourly solar output to proposed rates
Low-Income	Representative sample of BL enrolled low-Income customers

B. Strawman Special Commercial Scenario
New "all-electric" high school: hourly-use profile based on energy simulation model results.

IV. Rate Scenarios

TOU Rate scenarios to analyzed. Separate scenarios for the Energy, Capacity and Transmission (ECT) an BL Distribution and other costs are given. A "complete" scenario will choose one ECT scenario and match it to one Distribution scenario.

A. Energy, Capacity & Transmission
   a. Current Rate Structure
   b. 12-hour peak window (reviewed at December LBAC meeting)
      i. Peak: 10 am – 10 pm, all year, weekdays only
         {Capacity and Transmission cost included}
      ii. Off-Peak: 10 pm – 10 am, all year
         {No Capacity or Transmission charges}
   c. 4- hour summer peak window
      i. Peak: 3 – 7 pm, June – Sept, all days
         {Capacity and summer Transmission costs included in the peak period rate}
      ii. Off-Peak: All other hours
         {No Capacity cost, Transmission costs for non-summer months included}
   d. Based on Clean Peak Standard
      i. Winter Peak: 4 – 8 pm, Dec – Feb, weekdays only
         {No Capacity cost, Transmission costs for months covered}
      ii. Summer Peak: 3 – 7 pm, June - Sept , weekdays only

{Capacity and summer Transmission costs included in the peak period rate}

iii. Spring & Fall Peak: 4 – 8 pm: Oct – Nov, Mar – May, weekdays only
{No Capacity cost, Transmission costs for months covered}

iv. Off-Peak: All other hours
{No Capacity or Transmission charges included}

B. Distribution and Other BL Costs
   a. Current Structure [kWh, fixed]: fixed customer charge + volumetric rate ($/kWh)
   b. With Demand [kWh, kW, fixed]: fixed customer charge + demand charge ($/kW) volumetric rate ($/kWh) – reviewed at December LBAC meeting
   c. Fixed Only: one monthly charge based on service size (e.g. 100 amp, 200 amp, etc..): no volumetric or demand charges

V. Rate and Rate Impact Comparisons

A. Rate Comparison Template

		Rate Components			
Energy Capacity & Transmission Scenario	BL Distribution & Other Costs Scenario	Fixed Monthly Charge($)	Demand Charge ($/kW)	Vol Rate ($/kWh)- PEAK	Vol Rate ($/kWh) – OFF-PEAK
Current Rates					
12-hour peak	kWh, fixed				
	kWh, kW, fixed				
	fixed only				
Summer 4-hour peak	kWh, fixed				
	kWh, kW, fixed				
	fixed only				
CPS Peaks	kWh, fixed				
	kWh, kW, fixed				
	fixed only				

B. Rate Impact Comparison Template

		Light User			Median User			Heavy User			Strategic Electrifier			Solar Home			Low-Income		
Energy Capacity & Transmission Scenario	BL Distribution & Other Costs Scenario	Avg Monthly Bill	Max Monthly Bill	Min Monthly Bill	Avg Monthly Bill	Max Monthly Bill	Min Monthly Bill	Avg Monthly Bill	Max Monthly Bill	Min Monthly Bill	Avg Monthly Bill	Max Monthly Bill	Min Monthly Bill	Avg Monthly Bill	Max Monthly Bill	Min Monthly Bill	Avg Monthly Bill	Max Monthly Bill	Min Monthly Bill
Current Rates																			
12-hour peak	kWh, fixed																		
	kWh, kW, fixed																		
	fixed only																		
Summer 4-hour peak	kWh, fixed																		
	kWh, kW, fixed																		
	fixed only																		
CPS Peaks	kWh, fixed																		
	kWh, kW, fixed																		
	fixed only																		

VI. Compare to Goals

A. Does the rate align customer savings (from reduced energy use) with BL reduced costs?
B. Does the rate support Strategic Electrification?
C. Does the rate protect low-income customers?
D. Does the rate support energy-efficiency / solar?
E. Does the rate provide sufficient revenue and revenue stability for BL?
F. Will the rate be relatively easy to implement?

VII. Implementation

A. How have other utilities implemented TOU rates?
   - Best practices
   - Lessons learned
   - Use of technology? (Virtual Peaker)

B. Should a consultant with TOU implementation expertise be hired?