MMLD Public Information meeting December 15, 2022

Meeting notes

To:	Light Department: J. Kowalik, General Manager
	Light Commission: Commissioners
From:	Jean-Jacques Yarmoff, Secretary
Date:	December 17, 2022
Re:	MMLD Public Meeting December 15, 2022

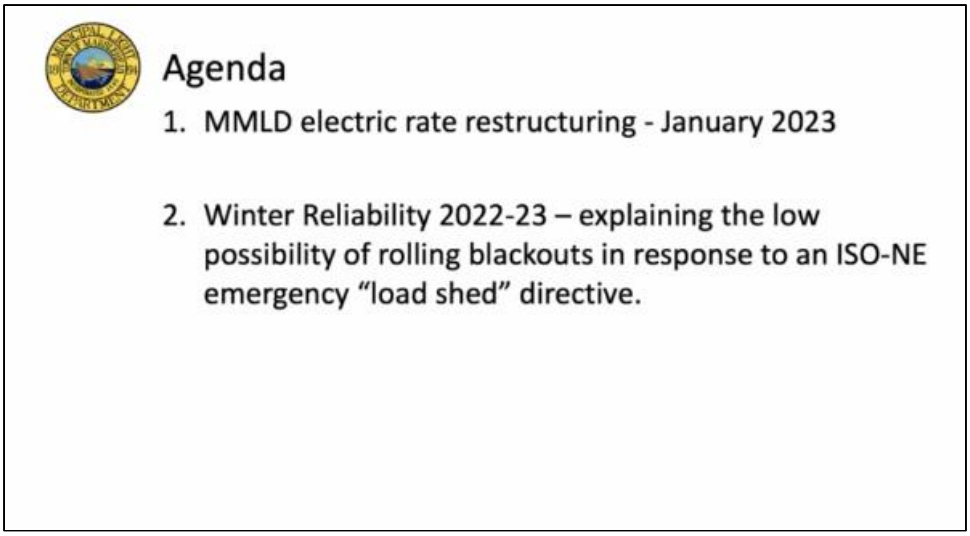
MMLD Public Information meeting was opened by Light Commission Chair Mike Hull at 6:40 pm, the meeting being held both in person and with remote access available to the public. A recording of the meeting is made available to the public at the following link.

Participated in meeting:

Light Department:	General Manager Joe Kowalik
Commissioners:	Hull, Frechette, Smith, Wolf and Yarmoff
MMWEC:	Matt Ide, Justin Connell, Dean Clark
UFS:	Dawn Lund, Chris Lund

The slides projected during the meeting are shown below, together with the comments of the General Manager, Joe Kowalik.

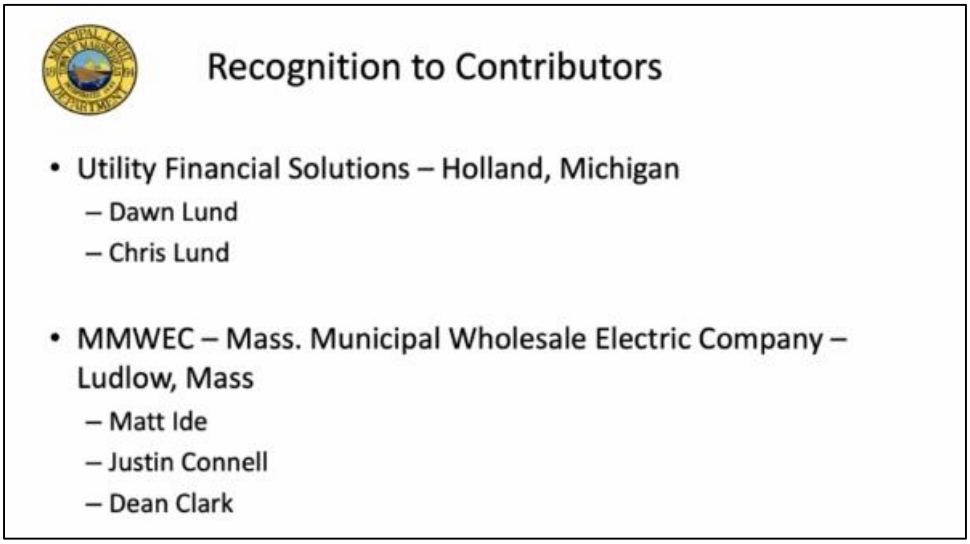
Slide 1



In this public meeting, MMLD would like to explain to Marblehead residents two topics about the electric service in town:

- A rate restructure,
- The low probability of rolling blackouts in an extreme weather situation.

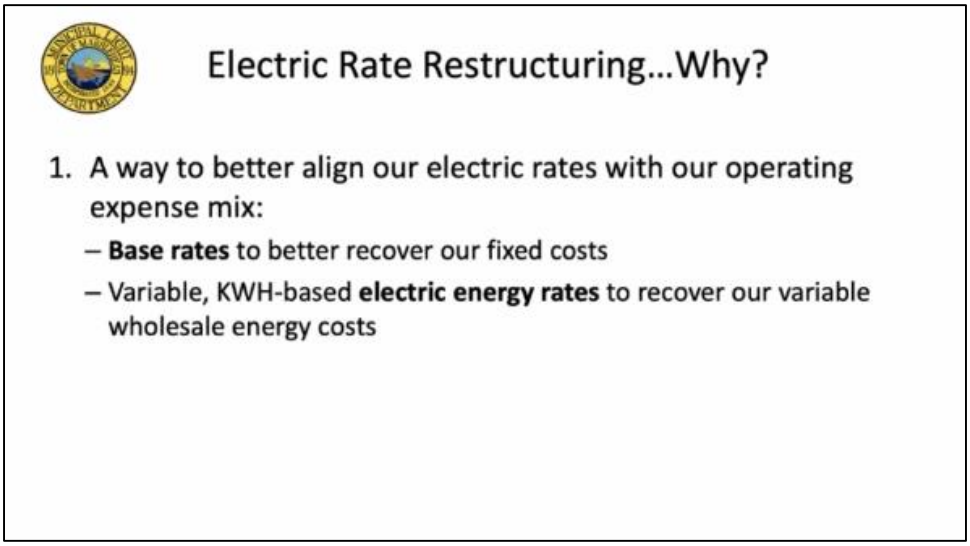
Slide 2



MMLD would like to recognize the principals from Utility Financial Solutions, a consultancy which has helped MMLD with the rate restructure process. They are available during the meeting for any question.

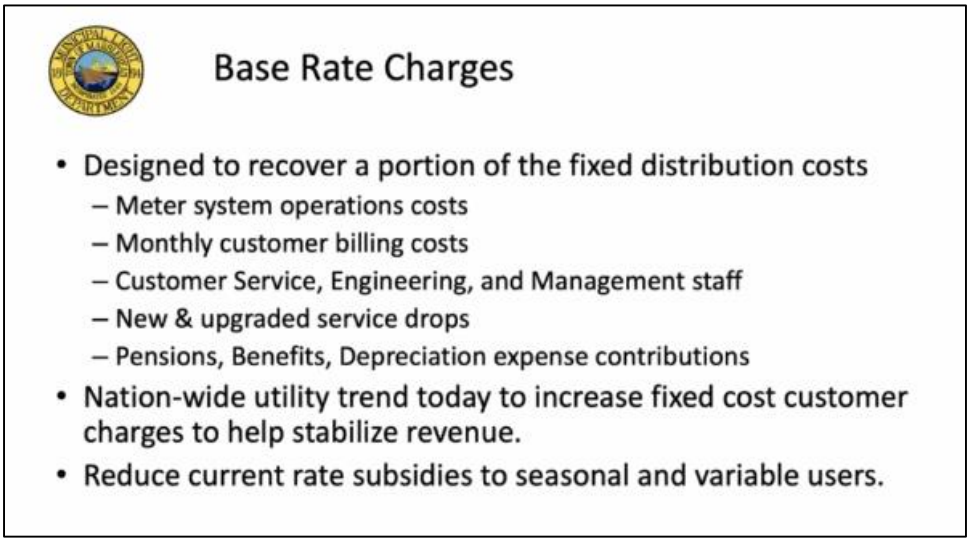
Further, MMLD would like to thank the team from MMWEC, who have travelled to Marblehead to participate in this session, and can give more insight in the energy markets.

Slide 3



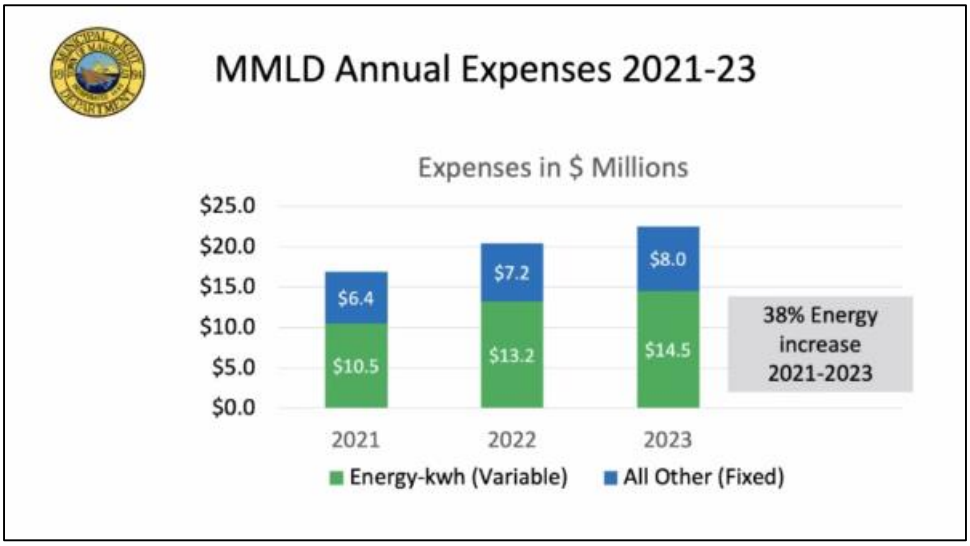
MMLD and the Light Commission have recognized the imbalance between our base rates and our electricity energy rates. The base rates are supposed to cover MMLD fixed costs; the variable energy rates reflect the variable wholesale electricity costs that MMLD purchases on the open markets.

Slide 4



The base rate covers the fixed portion of our network and the fixed costs for its operation. After many years of operations, the unchanged base rate does not cover anymore the fixed costs of MMLD. As a result, customers energy rates cross-subsidize the operations of MMLD, which is not appropriate long-term, and not fair as seasonal users or customers who are only in Marblehead a few months do not pay their fair share of the upkeep of the system. While this is a problem that most utilities have nation-wide, they are often reluctant to fix the problems. Yet our fixed costs keep increasing: for example, we have implemented a vegetation control program to ensure reliability of the lines. We need to ensure the rates reflect our fixed costs appropriately.

Slide 5

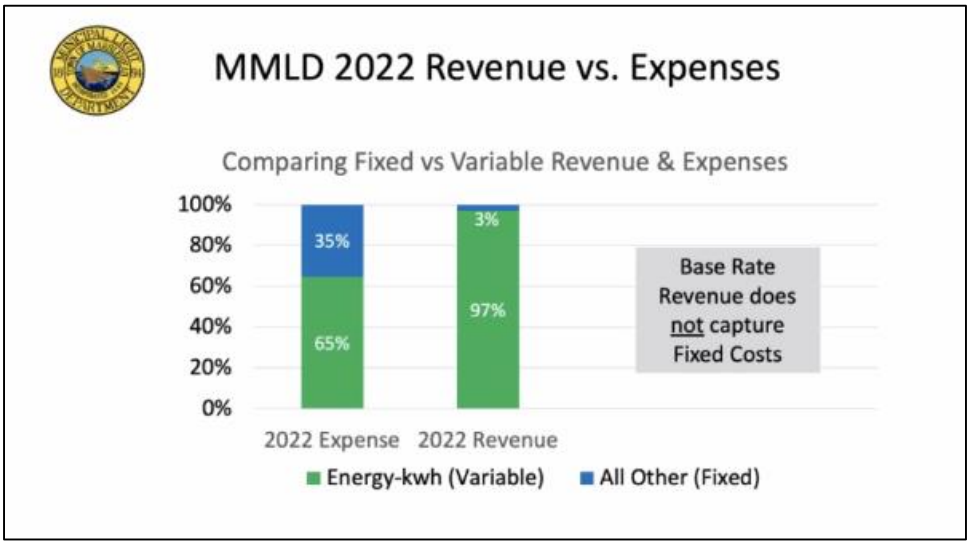


Slide 5 shows the recent and anticipated increases in expenses for MMLD. The increased cost of energy caused by the fossil fuels price increase is keeping both MMLD and our colleagues at MMWEC very busy. We anticipate these increase in the variable energy costs to continue in 2023. We have been raising rates this year, not because of the restructuring, but simply because the price of energy that we purchase is increasing tremendously, nearly 40%, mostly this year 2022.

Slide 6

Over the same period of time, the ratio of our fixed costs and variable costs stays roughly the same, with energy costs about 2/3 of the total MMLD expenses.

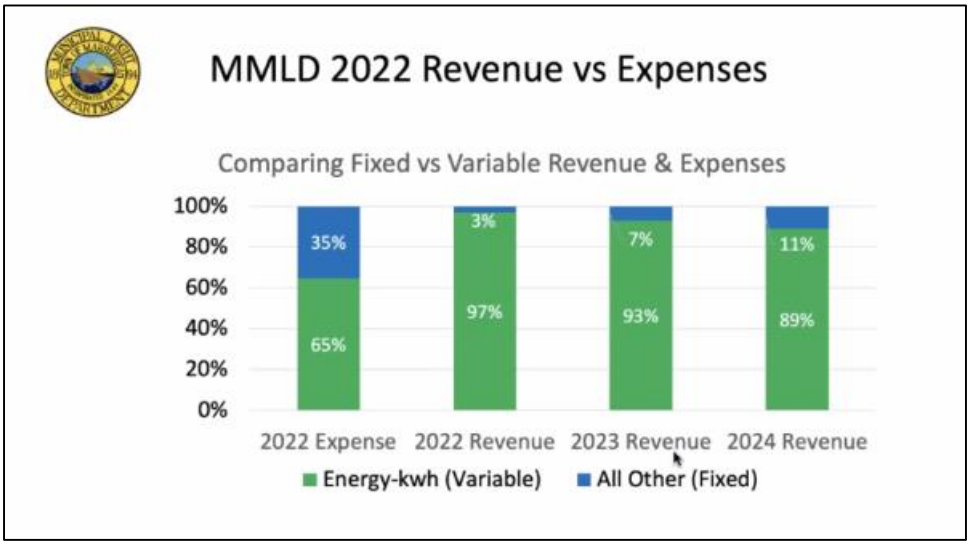
Slide 7



But, focusing on year 2022 in this slide, our base rate only represents 3% of our revenues: we are asking our energy revenues to do too much.

The restructuring that will take place in 2023 is meant to rectify this imbalance. It will not increase the total revenue, it will shift the blue to a higher percentage of the total revenue. As the Base Rate goes up, the Energy Rate will go down correspondingly, for a revenue neutral result.

Slide 8



The plan designed with UFS will be implemented over two years, in 2023 and in 2024. At this stage, the board has officially approved the new rates for year 2023 to implement the first phase of the changes.

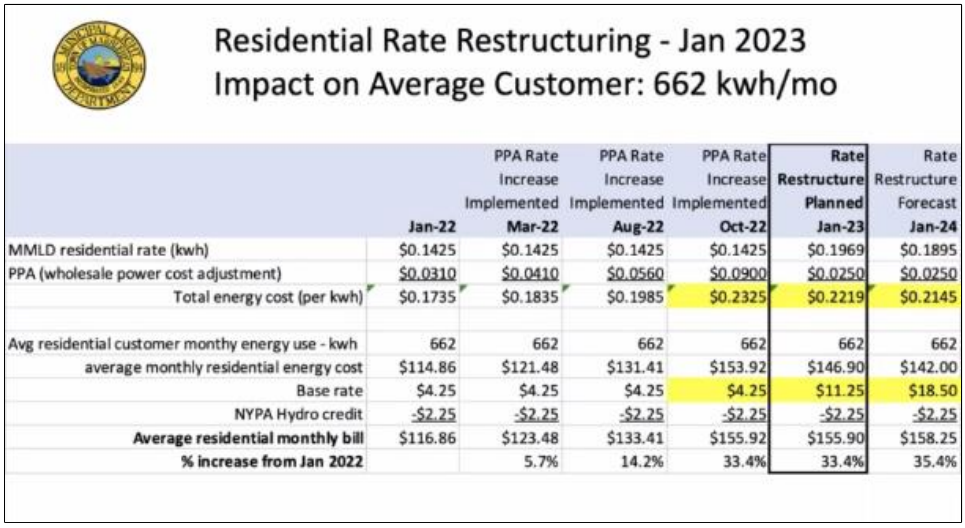
Slide 9

Base Rate Planned Changes

Customer Class	Total Customers	Current Base Rate	2023 Base Rate	2024 Base Rate
Residential	8,915	$4.25	$11.25	$18.50
Small Commercial	1,268	$5.00	$18.50	$32.25
Large Commercial	56	$10.00	$61.75	$113.50
Off Peak Water Heating (G)*	87	$4.25	$8.25	$12.00
Storage Heating (S)*	10	$4.25	$11.00	$17.75
*(G) & (S) - Grandfathered rates				

This slide shows the current base rates for several class of services, to Residential Customers, but also to Small and Large Commercial customers. We are mainly serving residential customers, and we are all, in this room, paying for the fixed costs of MMLD. The other two rates are grandfathered in, so no new customers can sign-up for these rates.
Importantly, the restructure rate study that we have embarked over the last year shows that our system was basically fair across the various class of customers, and one class has not been subsidizing the service to another class of customers.
Over the course of the next two years, we will raise the Base Rate from $4.25 currently, to $11.25 in 2023 and to $18.25 in 2024, for residential customers. Similar increases will apply to the other classes of service.

Slide 10 shows more details, the boxed section of the table highlighting year 2023.



Residential Rate Restructuring - Jan 2023
Impact on Average Customer: 662 kwh/mo

	Jan-22	PPA Rate Increase Implemented Mar-22	PPA Rate Increase Implemented Aug-22	PPA Rate Increase Implemented Oct-22	**Rate Restructure Planned Jan-23**	Rate Restructure Forecast Jan-24
MMLD residential rate (kwh)	$0.1425	$0.1425	$0.1425	$0.1425	$0.1969	$0.1895
PPA (wholesale power cost adjustment)	$0.0310	$0.0410	$0.0560	$0.0900	$0.0250	$0.0250
Total energy cost (per kwh)	$0.1735	$0.1835	$0.1985	$0.2325	$0.2219	$0.2145
Avg residential customer monthy energy use - kwh	662	662	662	662	662	662
average monthly residential energy cost	$114.86	$121.48	$131.41	$153.92	$146.90	$142.00
Base rate	$4.25	$4.25	$4.25	$4.25	$11.25	$18.50
NYPA Hydro credit	-$2.25	-$2.25	-$2.25	-$2.25	-$2.25	-$2.25
Average residential monthly bill	$116.86	$123.48	$133.41	$155.92	$155.90	$158.25
% increase from Jan 2022		5.7%	14.2%	33.4%	33.4%	35.4%

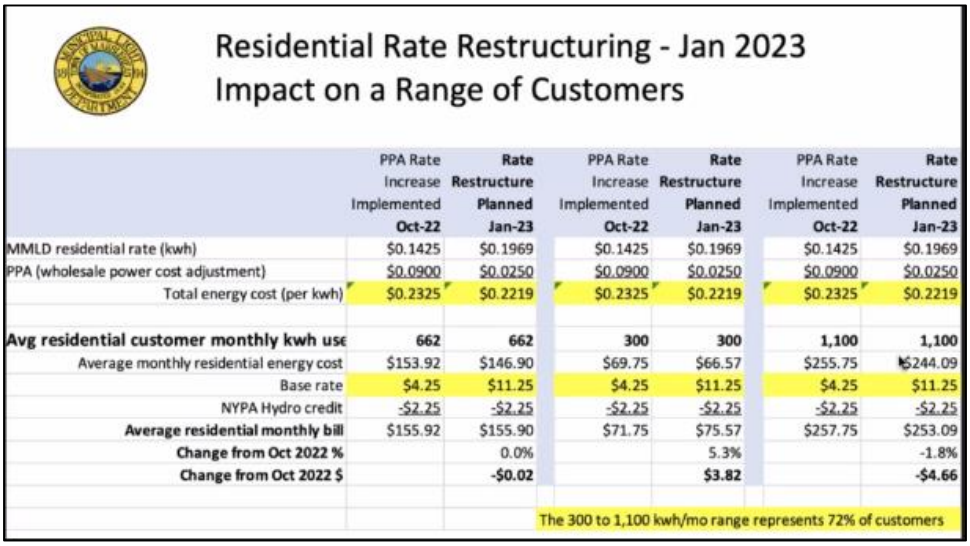
The first three lines of this table explain the changes in Energy Rates in year 2022, and for the next years. In this table, we only show the Residential Customer energy rates.

The residential energy rate has been fixed at $0.1425 for a long time (shown on the first line), but the Total Energy cost residents pay (shown on the third line) varies with the PPA charge (shown on the second line), the Purchased Power Adjustment charge. We have had to raise this PPA charge three times this year to keep up with the increases in fossil-fuel generated electricity we buy. Given the forecasts we receive from MMWEC, we think we are in a good shape going into 2023 and that we will not have to raise the PPA further, as long as there are no further major disruptions to the energy markets. But we have to recognize that the higher prices of electricity generated by fossil fuels we have observed is here to stay and it is highly unlikely that the prices will go down so much that we can expect the PPA to come back to 0.
As we are implementing the rate restructure, we are also “resetting” the PPA to a value that we feel is reasonable. Hopefully, we will be able to lower the PPA charge at some point next year if market conditions improve.

Assuming that the price of energy does not change from now into 2024, then the impact of the Rate Restructure will be to lower the Total energy cost (per kWh) as highlighted in yellow on the third line. From $0.2325 currently, it will go down to $0.2219 in 2023, and down again to $0.2145 in 2024. The increases in Base Rates explained in Slide 9 are completely offset by the decrease in Total Energy rates.

This is shown in the lower part of the table, taking the example of the average Marblehead resident who consumes 662 kWh per month.
This customer pays today a total of: $155.92 for the base rate and the energy purchased. After the rate restructure, this customer will pay: $155.90 with the changed base rate and lower energy charge, essentially the same amount.

Slide 11



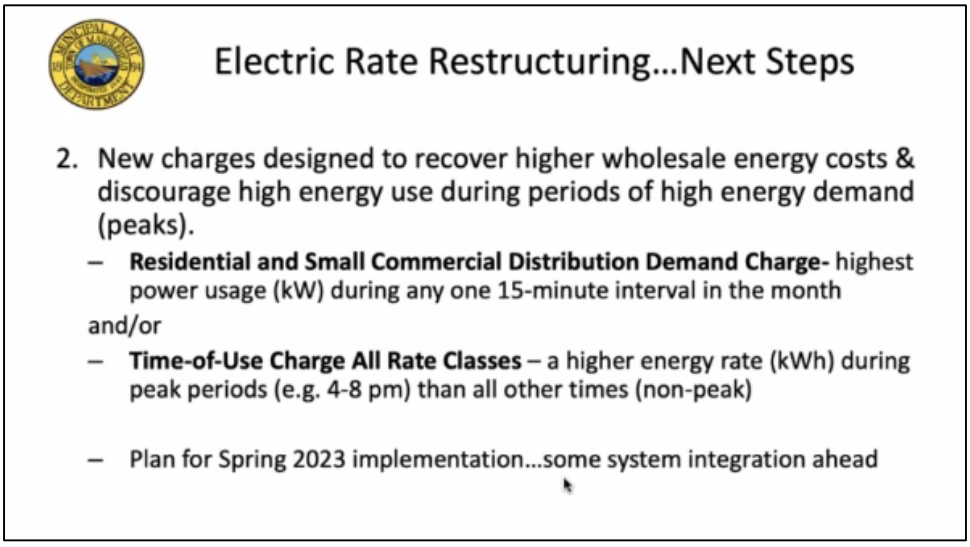
Residential Rate Restructuring - Jan 2023
Impact on a Range of Customers

	PPA Rate Increase Implemented Oct-22	Rate Restructure Planned Jan-23	PPA Rate Increase Implemented Oct-22	Rate Restructure Planned Jan-23	PPA Rate Increase Implemented Oct-22	Rate Restructure Planned Jan-23
MMLD residential rate (kwh)	$0.1425	$0.1969	$0.1425	$0.1969	$0.1425	$0.1969
PPA (wholesale power cost adjustment)	$0.0900	$0.0250	$0.0900	$0.0250	$0.0900	$0.0250
Total energy cost (per kwh)	$0.2325	$0.2219	$0.2325	$0.2219	$0.2325	$0.2219
Avg residential customer monthly kwh use	**662**	**662**	**300**	**300**	**1,100**	**1,100**
Average monthly residential energy cost	$153.92	$146.90	$69.75	$66.57	$255.75	$244.09
Base rate	$4.25	$11.25	$4.25	$11.25	$4.25	$11.25
NYPA Hydro credit	-$2.25	-$2.25	-$2.25	-$2.25	-$2.25	-$2.25
Average residential monthly bill	$155.92	$155.90	$71.75	$75.57	$257.75	$253.09
Change from Oct 2022 %		0.0%		5.3%		-1.8%
Change from Oct 2022 $		**-$0.02**		**$3.82**		**-$4.66**

The 300 to 1,100 kwh/mo range represents 72% of customers

This table shows the impact of the rate restructure for customers who consume significantly more or significantly less than the average customer. For the majority of Marblehead residents, the impact is going to be less $5 a month one way or the other.

Slide 12



Electric Rate Restructuring…Next Steps

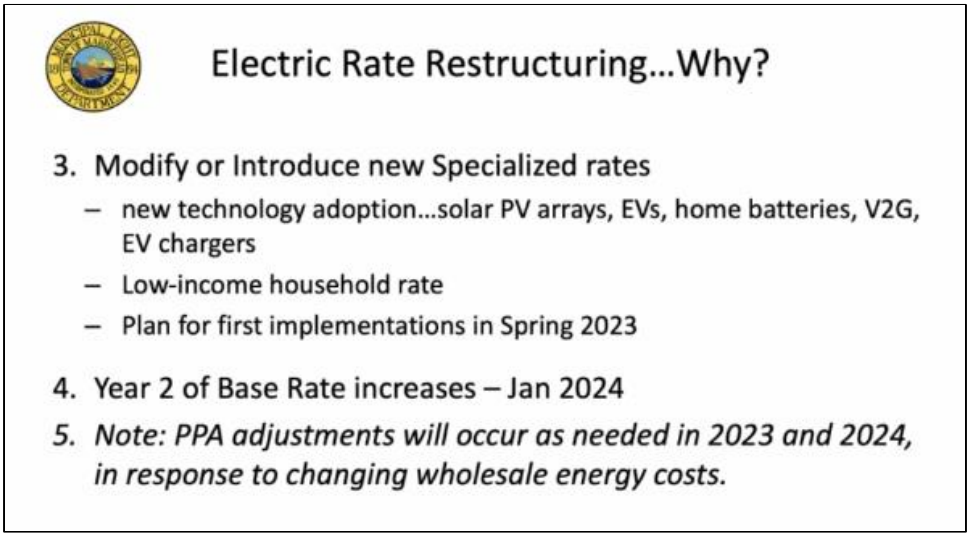
2. New charges designed to recover higher wholesale energy costs & discourage high energy use during periods of high energy demand (peaks).
   - **Residential and Small Commercial Distribution Demand Charge-** highest power usage (kW) during any one 15-minute interval in the month

   and/or
   - **Time-of-Use Charge All Rate Classes** – a higher energy rate (kWh) during peak periods (e.g. 4-8 pm) than all other times (non-peak)

   - Plan for Spring 2023 implementation…some system integration ahead

As we are implementing these changes, we have further active discussions with the board to implement other changes. These may include demand charges and/or Time-of-Use charges. We need to make and test modifications to MMLD's systems before we can contemplate implementation. These are active discussions, and the public is wecomed to participate by coming to the meetings of the Light Commission which are public meetings typically held on the last Tuesday of every month.

Slide 13



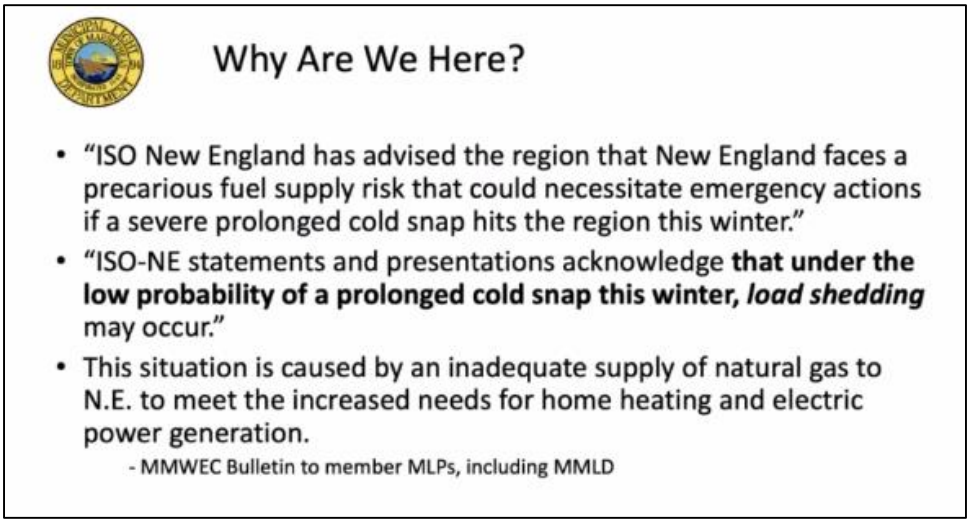
We also need to look at the new technologies that are coming to the market and possibly have specialized rates for these, which include solar arrays, home batteries, Electric Vehicles including those that have the possibility to send electricity back to the grid (EV2G). Level 3 chargers, if implemented in town, put specific new constraints on the infrastructure and may necessitate their own rate.

Importantly, we are about to implement a new Low-Income household rate.

Please, keep in mind that the Rate Restructure changes that are going to be implemented in 2023 are the first phase of this plan, and that a further change to the rates will take place in January 2024.

Please also understand that the projections shown on slides 10 and 11 show constant energy rates to illustrate the effect of the rate restructure. Given the high volatility in the energy markets, it likely we will see some changes in the prices of the energy that MMLD purchases in the next two years. These changes would be reflected in evolving PPA charges.

Slide 2

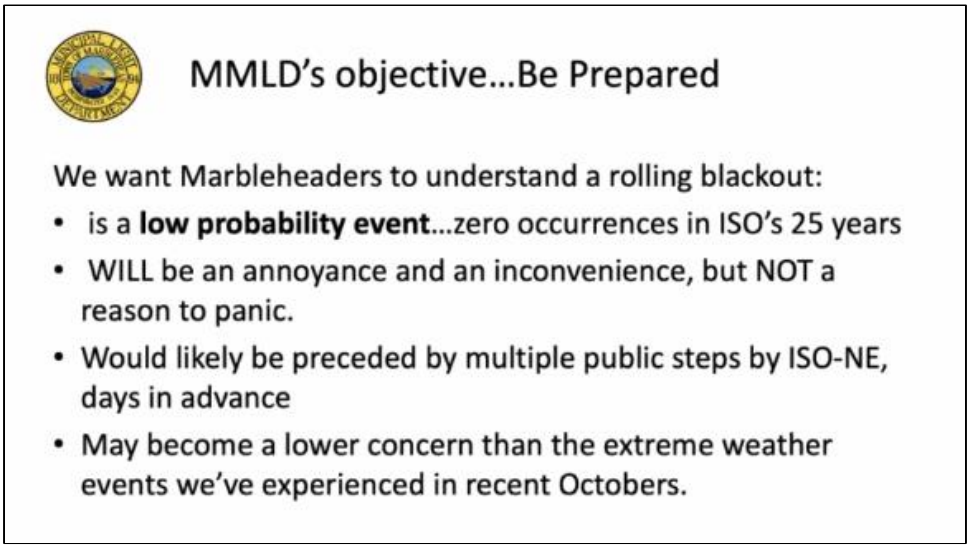


ISO-NE has advised New England that we could face a precarious fuel supply risk this winter. If we had a very severe prolonged cold spell, it is possible that fuel supply might curtail the grid ability to supply the electricity needed. If that is the case, after all conservations measures and appeals possibilities have been exhausted, it is possible that ISO NE order "load-shedding".

A load-shed means that we would receive a directive to drop our electricity consumption. In Marblehead, we would begin planned black-outs, and we would rotate them around the town.

This meeting will explain how MMLD would implement such orders.

Slide 3



We need to be proactive in planning, we need to be prepared, but we also need to understand that it is

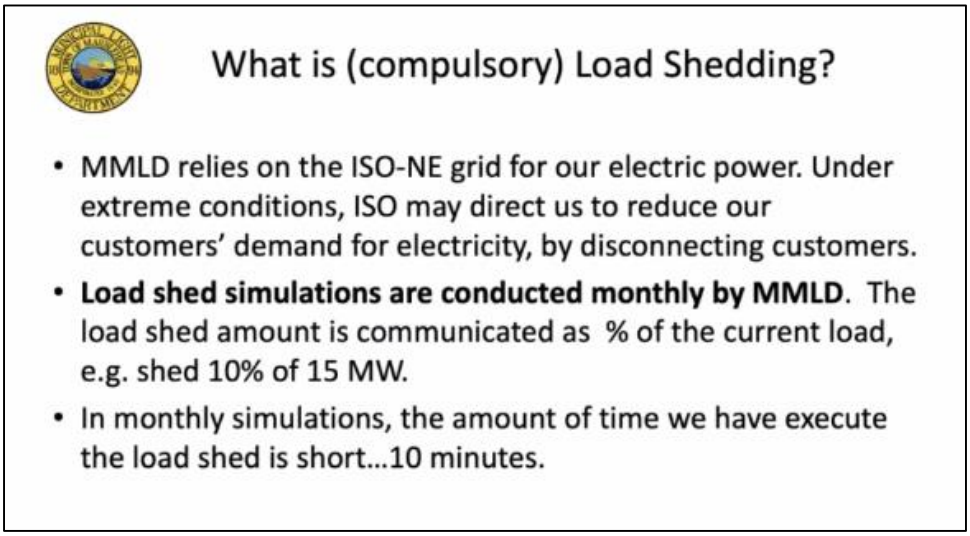
A low probability event

ISO-NE has operated the grid in New England for the last 25 years, and there has never been a "load-shed" event. It is not that we forgot about it, it has never happened.

If it were to happen, it will be an inconvenience, but we can all plan for this inconvenience. We should also get some advance warning that this would happen. This is not likely caused by two days of very cold weather, but a prolonged extreme weather event. We will hear about it. But the news reports will be part of the confusion, as multiple news sources may well have different reports about the weather, about what is happening in other places, in National Grid territory, but Marblehead residents need to understand what is happening in Marblehead, and what is likely to happen.
Due to our specific geography, we have suffered more in the late October storms of the last four years that we would if a load-shed were necessary. We have dealt with chaos unleashed by extreme wind storms. What would happen this winter would be announced and planned ahead of time.

It is a matter of taking some precautions up-front.
No doubt it would be an inconvenience, but we have dealt with worse.

Slide 4

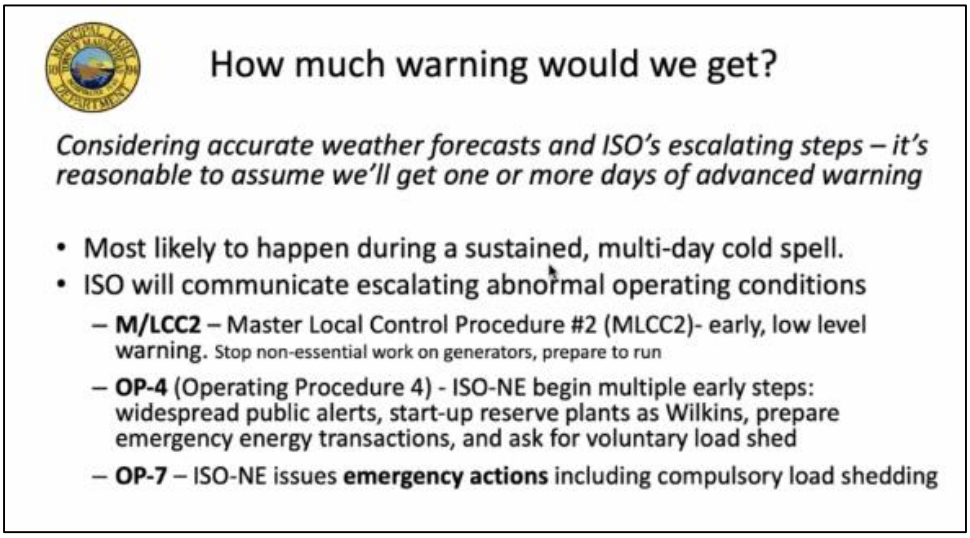


MMLD does not generate electricity in Marblehead, we rely on the ISO-NE grid.

Every month, MMLD runs exercises with ISO-NE. We run load shed simulations regularly.

We would be ordered a percentage reduction, maybe 10% or 20%. If we get to that stage, it is that ISO-NE is trying to keep the grid from failing: they would be telling us, "shut things down". And that is what we would do. But we would have, at this late stage, very little time to react.

Slide 5

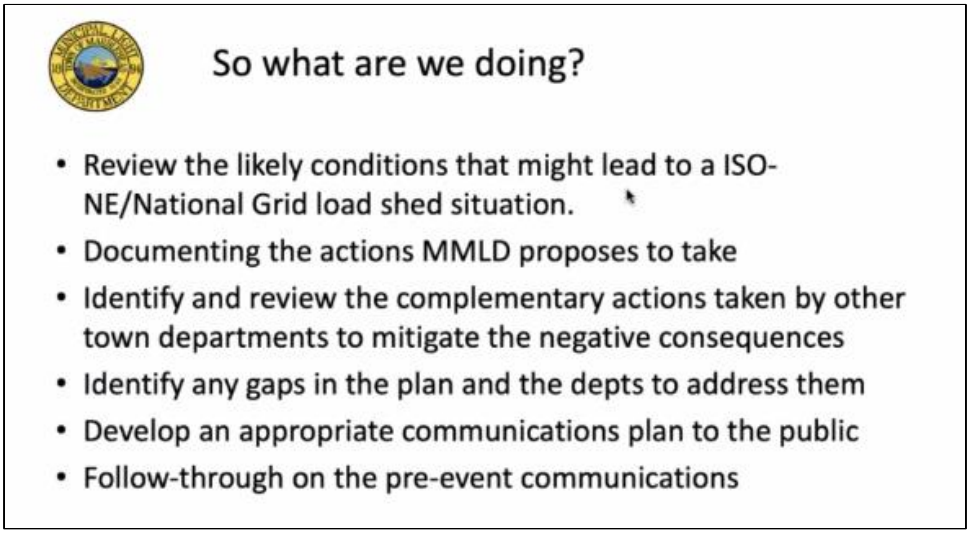


The current forecast is for a rather mild winter. Of course, a polar vortex might develop, and the weather forecast would let us know several days in advance. We would hear about this ahead of time in the news.
Then we would hear different levels of warnings from ISO-NE...

At first, they would tell all the plants that are currently idle to get ready to generate electricity: "if you are doing any maintenance, stop and get ready to run". That's their M/LCC2 procedure.

The second warning would come from ISO-NE reaching its OP-4 procedure stage. Public communications will be made at that stage asking for the public to conserve energy as much as possible. ISO-NE will also probably dispatch the Wilkins Plant, the diesel peaker generating unit we have in town. The Wilkins plant, generates 5 MW of power, which is not a huge number for a generating unit. ISO-NE controls when it runs, MMLD operates it. If we are asked to run the Wilkins plant, all the generating units on the grid that can are running flat out. If the weather forecast is still very frigid cold for several days, then we will know that we have to be ready for the next level order (OP-7) and prepare to execute rolling black-outs. We will see this coming. But if the order does come, it will be at short notice, an emergency for the grid. But not for Marblehead. We will execute the plan to shed load.

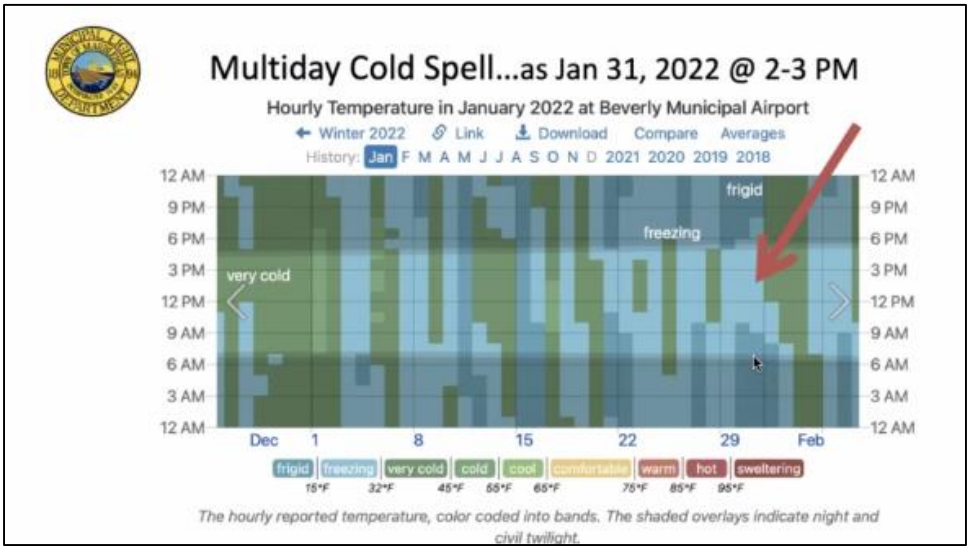
Slide 6



Having reviewed the likely conditions that might trigger the "load-shed" order, we are documenting our actions. We are exchanging with all the departments in town: everybody is working together as a team. Any good plan also identifies realistically what our limitations are.

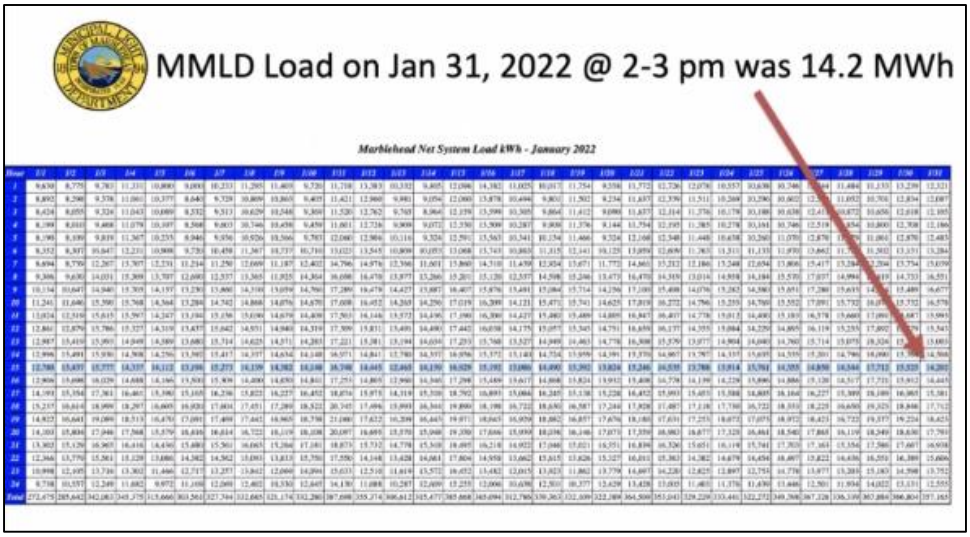
Most importantly, we are developing a communication plan, of which today is an element.

Slide 7

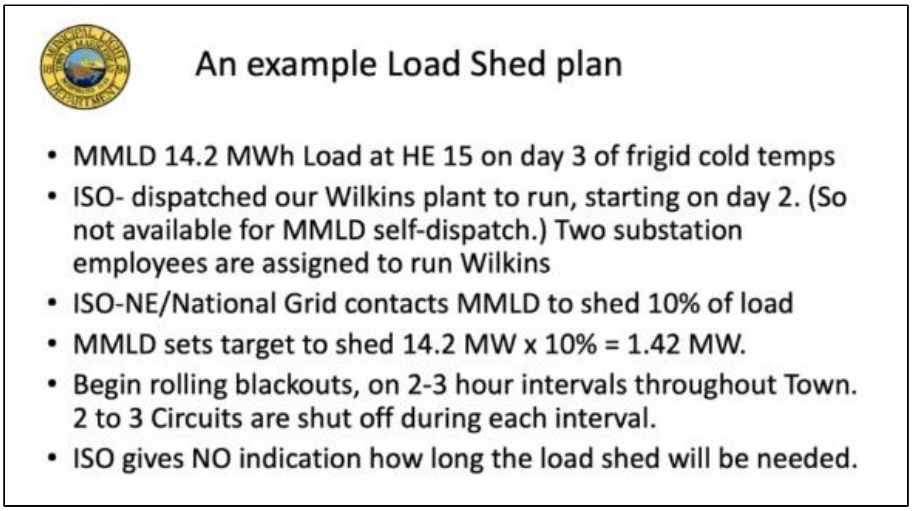


On this slide, we identified a cold spell of last year. While it maybe not as extreme as the frigid weather that would trigger a load-shed event, we do know what is the load in town on such a day. In this example, 14.2 MWh, as seen in the next slide.

Slide 8



Slide 9



If we have to shed 1.42 MW, as in this example, we have to organize ourselves and have personnel ready to implement these blackouts. We anticipate that ISO-NE will already have dispatched our 5 MW generator and that it is not available for self-dispatch. If the order for load-shed came and Wilkins had not been dispatched, we would start the plant and would not have to cut electricity to residents. But this is an unlikely situation given the likely sequence of escalating warnings we anticipate to receive.

Assuming the Wilkins plant has been dispatched by ISO to run means that we need to have MMLD personnel at that plant. MMLD is not a huge operation, so we are currently training our line staff to be qualified and able to fill different roles during these very unusual operating conditions.

We would cut power from some of the circuits in the town. We have 22 circuits in town that distribute electricity neighborhood by neighborhood. We know how much load each of these circuits contribute, and we would cut the number of circuits that we would need to shed the 10% or the 20% amount ordered. The electricity would be cut for two or three hours. This is short enough that the house will not freeze, the pipes will not burst, and it would be an inconvenience. We would then rotate to another part of town after that period of time. If the order from ISO-NE lasts for a long time, if it is a multi-day event, we may have to repeat the process several times until the grid emergency is resolved. We likely will not know how long the load-shed event might last.

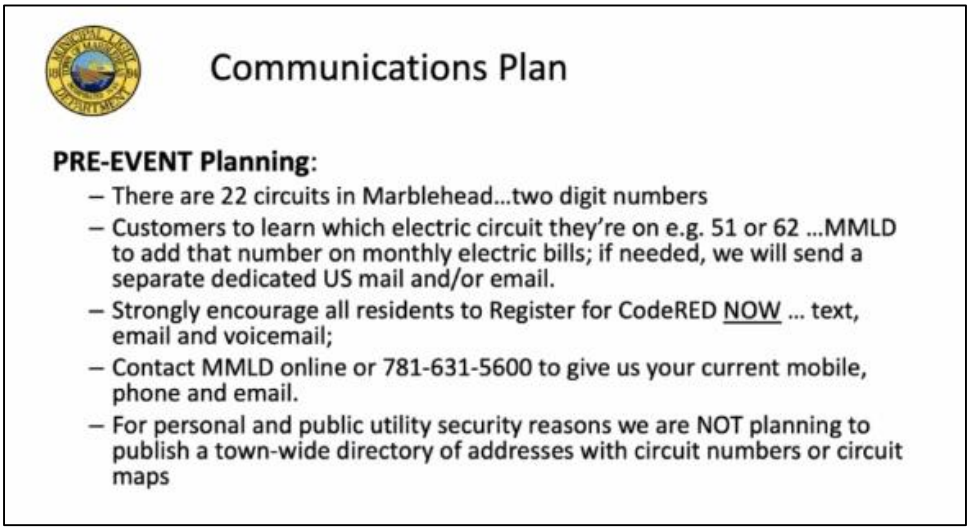
Each of the circuit is identified by a two-digit number. We are currently working with our billing company and our online bill payment service company to make sure that by the end of the month we include the circuit number on every customer bill.

While we have a schedule for the order of cuts we would plan, we will not communicate this information for operational and security reasons. In a 10% load shedding scenario, we are currently planning to avoid cutting power to schools while they are in operation to minimize disruptions. Essential facilities in town should have back-up power.

IF YOU ARE DEPENDENT ON A LIFE SAVING MEDICAL DEVICE AND DO NOT HAVE INDEPENDENT BACK-UP POWER, PLEASE CONTACT MMLD at (781) 631-5600 to provide us details on your specific situation.

The Brown school is the primary designated shelter in case of emergency. Fire Chief Gilliland is working to equip the Community Center with back-up power to make it also a possible emergency shelter.

Slide 10



Immediately ahead of a controlled rolling black-out, MMLD is planning to communicate with the residents using the CODE RED (our Reverse 911) system and to its database of contacts. Please make sure that up to date information is available, either in CODE RED or at MMLD.

If you have not done so already, register with CODE RED your phone number to receive Texts and Phone messages. Register also your e-mail to receive mail messages. You will find CODE RED registration link at the bottom of the MMLD web site, or on Marblehead town website at https://www.marblehead.org/subscribe You can also update your MMLD customer contact information by contacting MMLD at 781-631-5600.

The message all the people registered in the CODE RED system will receive will identify the circuits in town that will be cut off in the next few minutes. You will be able to find your circuit number on your bill by looking at the late December bill or the bills in 2023. The location of the information is mentioned in the slide 11 below.

Slide 11