

Light Commission December 19, 2022 meeting minutes

To: Light Commission: Commissioners
Light Department: J. Kowalik, General Manager, M. Barrett, Business Manager

From: Jean-Jacques Yarmoff, Secretary

Date: January 11, 2023

Re: Commission Meeting December 19, 2022

A quorum being present, Light Commission Chair Mike Hull opened the meeting at 4:10 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:

Commissioners: Hull, Frechette, Smith, Wolf and Yarmoff participated in person.
Light Department: General Manager Joe Kowalik.

Approval of minutes:

Vote #2022-37 Motion to approve the minutes of the Light Commission of October 25, 2022 moved by Commissioner Wolf, seconded by Commissioner Frechette. Unanimous.

Vote #2022-38 Motion to approve the minutes of the Light Commission of November 29, 2022 moved by Commissioner Wolf, seconded by Commissioner Frechette. Unanimous.

Vote #2022-39 Motion to approve the minutes of the Light Commission of December 15, 2022 moved by Commissioner Wolf, seconded by Commissioner Frechette. Unanimous.

Village 13 substation rebuild

Ordering transformers, review of bids: MMLD received three qualified bids by the deadline of Thursday December 15, 1:30 pm. Based on product quality, reputation of vendor, price and delivery time, the 5-member technical team unanimously recommended selection of the bid by Virginia Transformer. MMLD has experience with Virginia Transformer, which has equipped our Beacon substation. Virginia is the only company that meets our timelines. Its bid, the lowest received at \$2,632,446 exceeds our previous expectations of \$1.7M. While the bids are much more expensive than we would have expected as much as a year ago, they reflect the current market conditions.

The slide presenting the budget review does not include the cost of the performance bond for the Myers \$4.3M contract decided before, it will be further updated to make sure all the costs are well captured. A performance bond may not be necessary to conclude the negotiation with Virginia, but the General Manager may benefit from having the latitude of entering into such an arrangement. Commissioner Yarmoff mentioned that the site construction should plan appropriate "hardening" of the substation by including plans for a concrete wall (rather than chain-link fence) and video monitoring, as per the FERC order to the NA Electric Reliability Corporation, to deter incidents like the ones that took place in North Carolina and in the North West recently. The \$1M estimate for Site Construction cost may need to be updated to reflect this need. In the future, we should also think of protecting the Beacon substation.

Vote #2022-40 Based on the result of the competitive bid process, and the recommendation of the Village 13 technical team, the Light Commission authorizes the General Manager of MMLD to finalize contract negotiations with Virginia Transformer, for the purchase of two 23kV-13kV transformers, in the amount of \$2,632,446. Moved by Commissioner Yarmoff, seconded by Commissioner Frechette. **Unanimous.**

Vote #2022-41 Motion to authorize the General Manager to purchase a performance bond if necessary to finalize the contract with Virginia Transformer. Moved by Commissioner Frechette, seconded by Commissioner Yarmoff. **Unanimous.**

Financial implication of the bid. The general manager presented the projected depreciation account (which needs to be updated to take into account the new numbers). A discussion of the depreciation account replenishment (request sent by MMLD to DPU to raise the percentage to 5% on July 25, 2022) led to a conversation about the PILOT payment, and whether the Light Commission can decide to not pay it, punctually or for several years. In order to make a decision we need to understand:

- legality: is chapter 164 silent on the issue?
- custom: do other MLPs pay PILOT to town? Ipswich, Hingham, Belmont do.
- historical and precedent: why did MMLD decide to make this payment?

If we decide not to pay, the rationale for not paying and the duration over which we do not pay need to match. In addition, the town must be given fair warning. At this stage, we have not officially contacted the town about the possibility of not paying. This will be further discussed at a later meeting.

Timing of the substation build out. The timeline is presented in the slide on page XX. The Switch Gear delivery is now targeted for spring 2024. We anticipate transformers to be delivered in April 2024. Construction is scheduled to take place between April 2023 and July 2024. Current financial buffer of \$125K does not leave a lot of room for any delay, which would presumably increase costs. Completion of the substation upgrade is targeted for August 2024.

Preparation for construction. Next steps are:

- to file a Notice of Intent with the Mass DEP and the Marblehead Conservation Commission because we are going to change the perimeter of the substation, by less than 5000 sqft of wetlands tbd, close to the substation as shown in the attached slides;
- to engage a Civil Engineering design firm with utility experience to survey and develop a plan to use the right of way from West Shore Drive to the substation, and move the heavy equipment (110 000 lbs);
- create a new entrance to the substation so that cranes and delivery equipment can access the site.

General manager's updates

MMLD filed the new rates resulting from the restructure with DPU, and DPU acknowledged receipt.

Circuit numbers are being added to the resident's bills, as discussed previously.

MMLD was one of the utilities sending a crew to help New Hampshire recover from the latest storm.

The General Manager explained the situation with regards to the Distribution Manager who left MMLD on December 15. The open position was posted on December 8, and could be filled by outside applicants or internal moves. Position will be posted until end of December.

Reliability: 23 kV lines. The double 23kV supply line is a vulnerability for Marblehead: the two lines are co-located, and an incident on one can easily be an incident on both. Commissioner Yarmoff circulated a memo on options to alleviate possible reliability issue linked to the power supply, attached.

Some years ago, there were two different sets of lines into Marblehead, from Salem and from Swampscott. National Grid proposed to upgrade this last line and asked Marblehead to participate financially. At the time (1995?), MMLD chose not to do so. As a result this line was cut off: it still exists, but is currently not used. This makes MMLD dependent on a single source of electricity, the double 23kV line from Salem coming into Marblehead at the Leads Mills and using the right of way to the Village 13 substation.

A connection to the Swampscott grid may be a good solution for Marblehead. Alternative options maybe more complex. Connecting at two different places in the National Grid network would be better than connecting to the same Salem source. The connection from Swampscott to Village 13 is on the right of way and would be straightforward. Additionally, if in the future there were a higher load demand that the new Village 13 can accommodate, the Clifton substation could be updated to a 23 kV substation.

Another option to harden the distribution would be to bury a line, either on the right of way, or along Lafayette to connect with Village 13. There are other alternatives that have not been assessed but are either likely complicated technically or expensive.

Bob Jolly could help with the discussions with National Grid for Swampscott. We can ask a contractor for the cost of burying conduits to our specifications for the other option. We will have to be clear on what we want: 24/7 load, or emergency supply.

Measuring Reliability. Marblehead participates in the APPA program and inputs data in the national database. For these data to make sense, we need to establish a baseline: we have only been participating for about three years. We have to be careful that publishing reliability statistics does not impact safe operations by MMLD crew. One of the use of the data in the future will be to ask “which circuits has more outages, and why”. Another is to have data to evaluate the cost of not taking some reliability enhancing measures. The data is being gathered and we can focus on it at another meeting.

Sustainability Working Group. The Meeting of the group is tomorrow and we have not met in a while. We are making progress to put in place a customer survey. MMWEC has been working with Great Blue and we can piggy-back on that work. We are waiting for Great Blue to propose a set of questions for our further input. The survey might start in January.

On the agenda for the group’s discussions: web site and communication strategies, and a review of the incentives that we offer to residents, for heat pumps and other items.

Strategy Working Group. The group met last Friday and reviewed data about registered cars in Marblehead, obtained from the DMV under FOI. This will help us build a model for future EV load.

Executive Session. Chair Mike Hull proposed a motion to go to Executive Session to conduct strategy sessions in preparation for negotiations with non-union personnel or to conduct collective bargaining sessions or contract negotiations with non-union personnel, General Manager Joe Kowalik. Not to return to Open Session. Seconded by Commissioner Yarmoff. Lisa Wolf: Yes, Simon Frechette: Yes, Adam Smith: Yes, Jean-Jacques Yarmoff: Yes, Mike Hull: Yes. Executive Session starts at 6:34 pm.

----****----

Documents and slides shown during Light Commission Meeting 12/19



Agenda

1. Approve Minutes of October 25th and November 29th meetings
2. Review bids for Village 13 transformers and vote to appropriate funding
3. Village 13 - New Access Road next steps
4. GM updates
5. Sustainable Committee updates
6. Strategy Committee updates
7. Public Comments
8. Executive Session – conduct contract negotiations with GM Joseph Kowalik. Not to return to open session



Village 13 Transformer Bids

- Opened in open meeting Thursday, Dec 15, 2022 @ 1:30 pm
- Three (3) qualified bids were received and opened.
- The 3 bids were emailed to the Village 13 technical team. The bids were reviewed at the Technical Team meeting today, Monday, Dec 19.
- Based on product quality, lowest price, and fastest delivery time, the Technical Team unanimously agreed Virginia Transformer submitted the most competitive bid.



Village 13 Technical Team

- Mike Barrett, Principal, PLM Electric Power Engineering
- Bob Jolly- retired MMLD GM
- Colin Coleman, MMLD Tech Services Manager
- Jack Ravagno, MMLD Senior Substation Specialist
- Joe Kowalik, MMLD GM



Village 13 Transformer (2) bid summary

Vendor	Price - Two	
	Transformers	Delivery Time
Hitachi	\$3,908,600	122-128 weeks
Niagra Power Transformer	\$2,663,782	108 weeks
Virginia Transformer	\$2,632,446	60-65 weeks



Board Approval & Vote

- Based on the results of the competitive bid process, and the recommendation of the Village 13 technical team, the MMLD Board authorizes the General Manager to finalize contract negotiations with Virginia Transformer, for the purchase of two 23kv- 13kv transformers, in the amount of \$2,632,446.



Village 13 Upgrade - Budget review

Cost Category	July 2022	Dec 2022	Vendor	Status	Bid	Expenditures
	Cost \$	Cost \$				
Manufacture New Switchgear	\$4,347,292	\$4,347,292	Myer CP	mostly firm bid	2022	2022/2023
Manufacturer New Transformers (2)	\$1,700,000	\$2,632,446	TBD	Estimate	2022	2023/2024
Site Construction Contract	\$1,000,000	\$1,000,000	TBD	Estimate	2023	2023/2024
Testing and Commissioning	\$90,000	\$90,000	UPG	Estimate	2023	2023/2024
Engineering/Site Investigation	\$275,000	\$275,000	PLM	Estimate		2022 - 2024
Contingency	\$125,000	\$125,000		Estimate		
Make Ready Best ROW access option	\$50,000	\$50,000	?	Estimate	2022	2022
Make Ready Tioga Way storage area	\$250,000	\$250,000	?	Estimate	2022	2023
subtotal	\$7,837,292	\$8,769,738				
Utility Scale battery	\$0		?	Execute a \$0 payment shared savings option, not purchase	2024-25	2024-2025
Upgrade Clifton substation				Specifications tbd	2025	2025-2026
Spec & Install substation-level SCADA			?	Justification tbd	2025	2025
subtotal	\$0					
Total:	\$7,837,292					



MMLD Capital Improvement Account (Depreciation Account)

	2017	2018	2019	2020	2021	2022	2023	2024
Beginning Balance	\$6,949,454	\$7,318,649	\$6,176,017	\$6,671,639	\$8,085,153	\$9,614,061	\$7,157,731	\$3,778,231
Contributions \$	\$1,519,510	\$1,526,383	\$1,180,530	\$2,043,055	\$2,061,473	\$1,249,670	\$2,102,500	\$2,130,000
YE Transfer	\$1,187,000	\$552,000	\$0	\$0	\$0	\$0	\$0	\$0
Contribution %	5%	5%	3%	5%	5%	3%	5%	5%
Expenditure \$	-\$6,572,741	-\$3,186,520	-\$462,175	-\$455,891	-\$242,768	-\$3,406,000	-\$5,182,000	-\$3,350,000
Payroll Transfers	-\$281,711	-\$249,635	-\$318,150	-\$208,409	-\$315,723	-\$300,000	-\$300,000	-\$300,000
Interest	\$17,137	\$36,723	\$53,719	\$34,758	\$9,981	\$0	\$0	\$0
Building Bond	\$4,500,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ocean Ave Reimb	\$0	\$178,417	\$30,829	\$0	\$0	\$0	\$0	\$0
Fema Reimb	\$0	\$0	\$10,869	\$0	\$0	\$0	\$0	\$0
Bell Transformer	\$0	\$0	\$0	\$0	\$15,945	\$0	\$0	\$0
Year-End Balance	\$7,318,649	\$6,176,017	\$6,671,639	\$8,085,153	\$9,614,061	\$7,157,731	\$3,778,231	\$2,258,231
				Projected 2022 Balance \$		\$7,157,731		



Upgrade Schedule ...being updated now

- Switchgear Procurement – 7/2022
- Switchgear Delivery – 11/2023 ... now spring 2024
- Transformer Procurement – 9/2022 ... now Jan 2023
- Transformer Delivery – 4/2024 ... may not slip
- Site Construction – 4/2023 through 7/2024
- Substation Upgrade complete – 8/2024

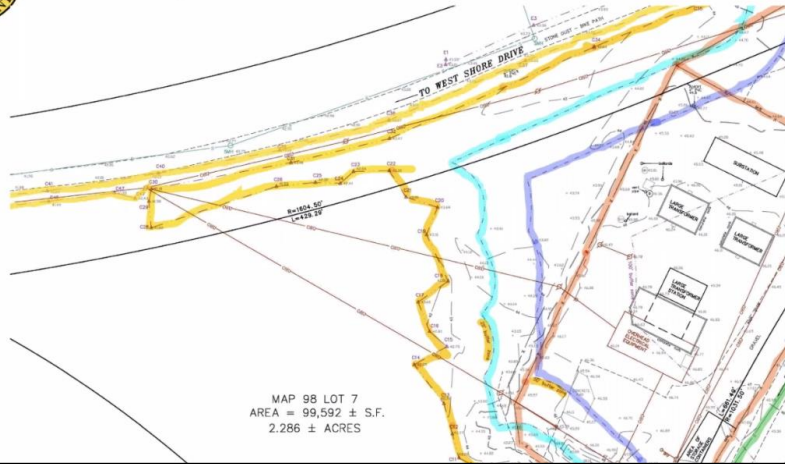


Village 13 substation next steps

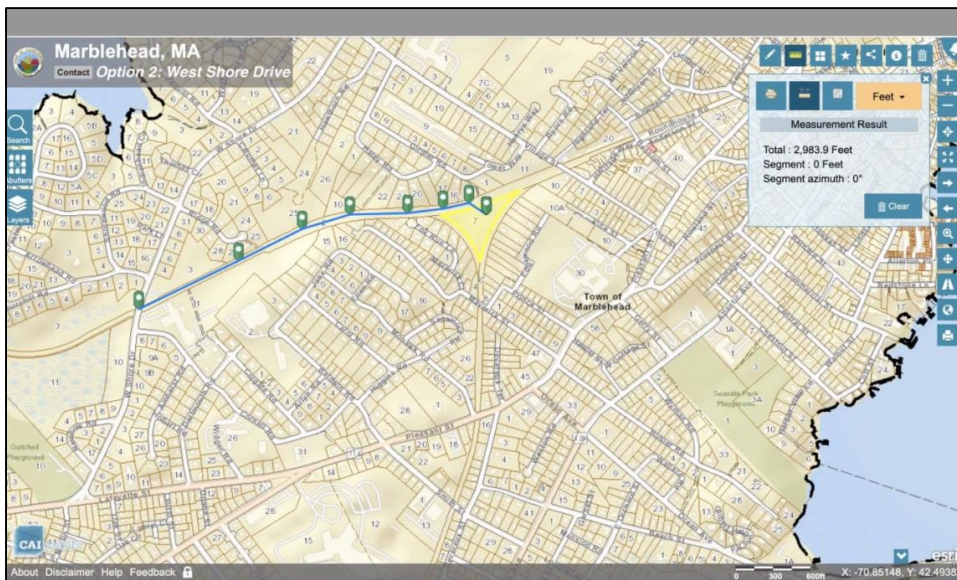
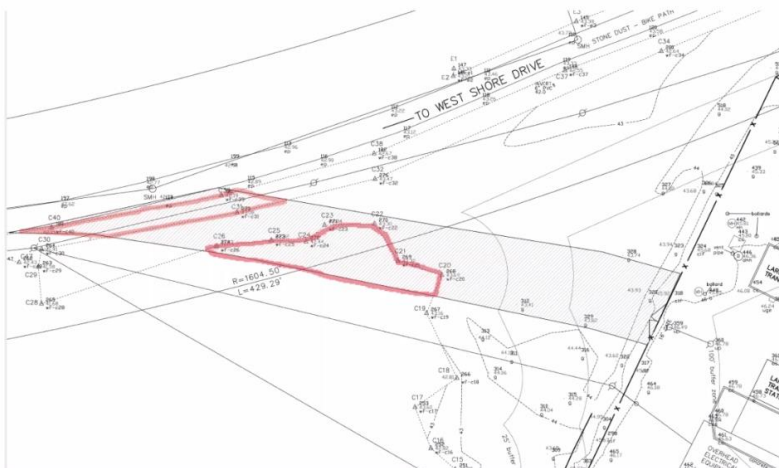
- File Notice of Intent with MA DEP and Mhd Conservation Commission
- Engage a civil engineering design firm with utility experience to survey and develop a plan for the full ROW from West Shore Drive to Village 13 (0.6 mile).



Village 13 New Access Road



File Notice of Intent w/ MA DEP and Mhd Conservation Commission





GM Updates

- Five new electricity rates filed with DPU
- Circuit numbers on MMLD monthly bills by
- MMLD was one of nine MLPs sending a crew to NH to support NH Electric Coop- lakes region
- MMLD Distribution Manager posting – on MMLD and NEPPA website
 - Exempt position
 - Salary \$130,000-150,000 depending on experience
 - Posted Dec 8 open until Dec 30, 2022.

MEMO

To: Light Commission: Commissioners
Light Department: J. Kowalik, General Manager
From: Jean-Jacques Yarmoff
Date: December 19, 2022
Re: Mitigation of power supply / reliability issues in Marblehead

The goal of this Memo to initiate a conversation regarding the reliability of power supply in Marblehead, for discussion at the Commission meeting, 12/19.

Disruption to the power supply could come from sources external or within Marblehead. As the causes can differ, we can anticipate that the mitigation strategies could also differ.

Cause of possible reliability concerns outside of MMLD's control

1. ISO-NE supply capacity limitations → Mitigation: Load-shedding plan
2. National Grid outage at substation

Marblehead specific possible reliability concerns:

3. Village 13 Transformer issue
4. 23 kV lines issue

Possible mitigation strategies

1. ISO-NE supply capacity limitations

→ Mitigation: Organizing load-shedding plan, exercises with the town. On-going.

2. National Grid outage

We depend on one single node on the National Grid system to supply all of Marblehead energy. By their own admission, the grid is old and needs to be upgraded. While I do not know the status of the grid that supplies Marblehead, a failure at the substation upstream could cause a long emergency situation in town.

→ Mitigation in some ways similar to 4. 23 kV line issue, discussed below.

3. Transformer issue

Hopefully, we would have only one of the two transformers at a time experiencing an issue. However, an issue with one transformer is likely a long term situation until Village street rebuild is complete. Most days, one transformer only might be able to carry the load. However, the load exceeds capacity of one transformer on peak days; at such a time, Wilkins might be dispatched by ISO-NE out of the control of Marblehead.

→ Mitigation strategies to explore:

i) **Wilkins generation.** Under what circumstances can we drop out of ISO-NE dispatch to ensure Marblehead only dispatch during a Marblehead emergency? What are the penalties associated with not providing peaker service when contracted to do so?

ii) **Load shedding.** As per 1) above. May be necessary during summer peak load? Less so during winter? Needs to be thought of as a temporary solution, while a transformer repair may be a several days/weeks issue.

iii) **Bypass affected transformer?** Is it possible to receive 13 kV from National Grid on the existing

23kV lines? Can the substation supplying us with 23 kV step down to 13 kV? If so, do the National Grid circuits at that substation have enough capacity to supply us with some 13 kV load? How much? Technically, can we bypass the affected transformer to directly feed other Marblehead substations with 13 kV? Work and timeline?

iv) Expedite Utility BESS? How can the Utility Scale battery work be expedited in case of emergency? Say the emergency occurs during the winter of 23-24. The site work might be finished. Might it be possible to accelerate the battery?

v) Rent a BESS? There are programs with BESS on trains, trucks and barges. Rent a utility scale BESS?

vi) Mid-tension relief? Mbhd abuts Swampscott and Salem. How many of our 22 circuits could potentially be fed from Salem/Swampscott during an emergency? This would imply mid-voltage connections rather than 23 kV connections. Are abutting towns using the same mid-voltage? How can we estimate cost and timeline? Of course, abutting towns will have their own load constraints. They might also ask about reciprocity. Could our abutting circuits carry increased load?

4) 23 kV line issue.

As the 23 kV lines are co-located and above ground from the Salem substation to the Village 13 substation, there is a risk that the lines be lost at the same time, this has happened before and will likely happen again if we do not do anything to prevent the situation from recurring.

→ Mitigation strategies to explore:

i) New third line above ground 23kV along Lafayette, Pleasant St, footpath to Village St substation;

ii) New third line underground along Lafayette, Pleasant, footpath to Village St. (might be easier than vi below, because of wetland along the footpath means essentially building an underwater line? Also, it would be good for the extra line not to be in the same physical footprint in case of physical problem?);

iii) New 23 kV line from Swampscott?

iv) New 23 kV line from other place? Salem Thomson Meadow substation?

v) Underwater 23kV line from Salem Footprint substation? (Next to the Sewer line where existing Right of Way?)

vi) Bury existing lines. Bury one or two lines along existing path. Wetland: does this mean basically an underwater line? This solution does not address possible issues on the Salem path, or with the originating substation.

5) Long term, is the Village Street the best substation for critical infrastructure? We have size constraints, wet land next to the site. What happens if we have catastrophic precipitation and 10 inches of rain/hour for a few hours: is the substation really safe? As we develop the Utility Scale battery site, should we think about other critical infrastructure we could / should have on a newly developed site? Could the Tioga way site be a strategic site for the future?

6) How do we measure reliability?

South Hadley maintains five year average score of SAIDI, CAIDI, SAIFI, and compares itself to other utilities.

Could we make these measures public?