**BEAVER ISLAND ENERGY RELIABILITY AND ISLAND SUSTAINABILITY**

**EMERGENCY MANAGEMENT CONSIDERATION**

**NOVEMBER 2022**

**Island Energy Source:** Beaver Island receives its electricity from a 27-mile underwater cable with three-phase wire which was placed in August 1999 between Cross Village and the south side of the harbor. The power comes ashore onto a three-line 17,000 V aerial system along Carlisle Rd and then King’s Hwy to the transmission center, located next to the generator, at King’s Hwy and East Side Dr. The energy then moves to the buried and aerial lines that serve the Island’s 11,171 customers (this is the number of electrical meters GLE serves).

The 3-megawatt generator plant, built in 2000, operates independent of the underwater cable and serves as a back-up system for GLE. This plant assists during peak energy need times, including sending power to the mainland and providing power on-Island during blackouts or during repair work on the underwater cable. The generator plant consists of three generators, two new generators installed in 2000 and one older one that served as a backup generator to the Island’s original generator when it was located on the harbor. The plant is powered by diesel fuel based in three 20,000-gallon tanks on site.

The placement of the 1999-era underwater cable and construction of the 2000-era generator plant were funded by the Islanders via a $10.25 surcharge on their monthly GLE invoices with a plan for a 30-year payout period. After 30 years, this surcharge would be reconsidered. A new and large base rate increase was assigned to all GLE customers in March 2013. This new base rate when combined with the Islanders’ surcharge would overcompensate GLE for the cable and generator costs. As a result of a 2013 Islanders campaign with the GLE Board of Directors the surcharge was eliminated in September 2013.

**Recent Weather:** With sustained gale force wind with gusts up to 40 to 60 mph beginning Friday afternoon (November 5) and continuing through Monday morning (November 7), trees were blown down throughout the forest-covered 6-mile by 13-mile Island including across powerlines. Power poles snapped. There were difficulties in turning on the generator and making it fully operational (even to those with buried cable). The main aerial cable feed between the Island-end of the marine cable and the transmission site was brought done due to falling trees given the high winds.

It is worth noting that GLE has a robust and routine powerline tree cutting program unlike other major suppliers of energy in Michigan. They also have invested in the past few years in upgrading power poles on the Island.

**Power Outage Self-Sustainability:** The GLE Generator Plant once fixed and upgraded should suffice as the source of power for all areas on the Island. This upgrade is thought to include the ability for emergency turn-on from GLE headquarters in Boyne City.

**For areas directly serviced by underground lines, such as within town, power should be received automatically.** **Areas serviced by aerial power lines will only receive power if these lines and/or poles have not been compromised by winds or downed trees.** These would be the areas that will have blackouts and the areas that need continue to need GLE’s routinely scheduled tree removal program. GLE may want to consider a program to bury their electrical cables over some time period.

**It is important to understand the working deadline to fix and upgrade the generator** as this will help the community to know if/when personal or business generators should be purchased and for which part of the Island.

The sponsors of an US Department of Energy’s E-TIPP grant **are currently developing a scope of work for reliable energy on the Island**. It will take time to identify the solutions, research the options, and deploy the needed work and do so in partnership with GLE. Therefore, **Island leaders should consider, with input from the Islanders, how best to identify and implement short-term and long-term strategies for the Island to become a more sustainable independent community. Strategy consideration could include:**

**Short-Term Opportunities:**

1. The creation of a Homeowner/Renter Emergency Guide discussing using 911, knowing your address, the location of available shelters, as well as available water, fuel, and food sources. Using a bucket of water to flush a toilet needs to be described. For those homes with landlines, to have an older non-electrical based phone as an emergency backup would be helpful during blackouts.
2. Using the Peaine Township Hall as the first point of shelter as it has a functioning generator with restrooms and a kitchen. Allowing overnight stays needs to be thoughtfully considered. Volunteers would need to staff this facility when it is open to guests. This use needs to be confirmed by the township board.
3. The BI Rural Health Center which is located along the buried cable system and which runs on a generator during power outages could consider its capability of being a medical refuge site for those that need help with their health, such as running medical equipment including for those needing oxygen. Volunteers at this center were making coffee and cooking ‘easy’ food for those at the adjacent senior living facility during the power outage. Volunteers would need to support the staff during this use. This use needs to be confirmed by the HC manager and board.
4. A variety of people have generators, some though struggle to start them and/or run them safely. A community support group, such as area neighbors could check on these vulnerable users to help them during power outage periods.

**Long-Term Opportunities:**

1. Using the Community Center as a shelter as this center is serviced along the buried cable system. Volunteers would need to help staff to interact with guests who need the respite services including for longer coverage through the day and on Sundays as the center is currently closed due to the winter period. The center staff would have opened on Sunday (November 6) given their power restoration at 11:00 am but it was just too cold throughout the day. They offered respite and soup on Monday. The center offers light food, restrooms, and areas of seating and entertainment. Allowing overnight stays need to be thoughtfully considered. The CC manager and board need to consider this use.
2. The BI Community School, which also is located along the buried system, could consider their capability to see if their gym could become a warming center with access to restrooms (and showers), the cafeteria for easy food, etc. Outreach for obtaining blankets, air mattresses for kids/adults and cots for the elderly, say from Red Cross, plus with an adequate storage site will need to be considered. Volunteers will need to support this use. The school superintendent and board need to consider this use.

Brainstorming other options and finding the funding needs consideration. For example, purchasing small battery generators or rechargeable battery systems for homes in need should be considered.

Finally, the County’s and Island’s portion of the **emergency operations plan** is just now **beginning to undergo updating**. Responding to energy and telecommunications outages as well as fuel shortages and major forest fire situations will be a component of this updating work. The **Island will accomplish their portion of this work through the** implementation of the planned, but yet-to-be-approved**, Beaver Island Safety and Health Advisory Committee**, a committee which advises both townships about safety and health.