

Questions and thoughts about Emergency Warning Systems

[These questions came from Larry's draft minutes of our June 2021 meeting, as well as from EPC members. *Updates as of February 2022 are in bold italics.*]

-Kevin noted that we have had one presentation from Mill Valley, and their only regret was that they did not opt for the solar powered backup. Kevin noted that if we lose power for several days, many of our systems (cellphones, laptops, cordless land lines) will not work. The present systems can put out voice announcements as well as audible alarms over 72 hours of active service (and can be replenished by solar in between uses). -- **This is all true, as far as I know. MV is very happy with their system.**

-Danielle noted that one of the presentations noted that the systems can be integrated with the earthquake early warning systems. – **Yes, as far as I understand it, but need to check each one.**

-Katie noted that with an earthquake the power will be out. – **And by this she meant that our home electronic devices (cellphones, laptops, internet) will stop working after a few days. That means people won't receive CWS and other alerts. This is why an independent external system provides an important backup.**

-Peter noted that he attended the Berkeley Wildfire Program and noted that with Zonehaven every jurisdiction is using the same vendor. His thought is that the same thing should be true of sirens. Peter suggested that we should talk to Berkeley on how they chose a siren system.

-Katie has been in touch with Berkeley, and they chose Genasys because another southern California town chose Genasys. The final location and number of sirens has not been finalized.

-- **Whereas it looks like Oakland and Berkeley are going with Genasys, which now owns Zonehaven, there is still some question how effective the Zonehaven system will be for Kensington, because we are small and tightly packed, and in many situations we may have to evacuate en masse because fire is advancing too quickly. Hopefully Zonehaven is nimble enough to recognize this, but the evacuation orders will be delivered by our Police and Fire Chiefs, so this may be a local discussion. [Berkeley and Oakland are going with Genasys.]**

There are of course regulations about public agencies and major purchases. We have been in touch with three vendors (and a fourth contacted us) who appear to produce suitable devices, and looked at others that don't have what we want. Ordinarily Bill would circulate an RFP including the promising vendors. However Berkeley may have been able to short-cut this by getting access to the RFP of Laguna Beach, who went through the same process. This needs more discussion. [I have contacted Laguna Beach to see if we can get their RFP waiver.]

-Dave Spath noted that it is not clear how the devices will be used in concert with evacuation warning systems. Also, this system would not be terribly useful in an earthquake.

To the first question, the Chiefs would handle both local evacuation orders and the implementation of the EWS. To the second, the EWS can emit a great many pieces of information after an earthquake happens and the electricity goes out (as Katie said above). It can inform people about emergency supplies, blocked roads, downed power lines, and much more. When electricity is out and homes are damaged, this is a lifeline.

-Peter Guerrero stated that when we started this discussion, he was in favor of an EWS in Kensington. However, he has become concerned with an EWS that may or may not be issuing information that contradicts the Zonehaven alerts. Peter noted that an EWS makes more sense in Berkeley than it does in Kensington, where we are concerned only with wildfires and earthquakes.

-- Two different thoughts here. First, the EWS would not contradict the Zonehaven alerts because they would be controlled by the same people. Second, Berkeley, as usual, is a different world. They will be debating how many languages to broadcast in, for example. And they may well have civil emergencies that we won't. But that doesn't seem to be a reason for Kensington not to employ an EWS; it's another reason why it could be even more useful to Berkeley. *[In our next meeting with the Chiefs they confirmed their willingness to implement the system, as did the OES people.]*

-Danielle noted that an EWS would be useful in an earthquake because there could be fires and landslides. Also, evacuation may be necessary for an earthquake. – **Yes.**

-Paul Moss noted that we need to check with neighboring communities about their plans and that we need to plan a public education program. – **Yes, although these are two different (and important) things. We can't control the first, and what others do may not be best for us. And second, a public education program is critical, but first we have to know if a system is right for Kensington. If so, then our EPC Coordinator is on the job. *[A public survey is part of the education program.]***

-Chris Hilliard noted that we were in communication with Zonehaven about evacuation. We need to be educating people to know several routes out of town and to plan for an evacuation. Chris noted that Zonehaven has fire modeling in place and the fire model would affect the evacuation routes. Chris also noticed that for high-risk people, an evacuation warning should be considered an evacuation order. – **All good points. Subsequent discussion suggested that the public doesn't need to know anything about the particulars of Zonehaven, or even what zone they're in. They just have to evacuate when they're told to. This is important but different than the question of whether we should recommend the procurement of an EWS.**

-Dave Spath stated that he thinks we need to educate the public on what it means to evacuate. – **Absolutely; see above. This is why we hired an EP Coordinator.**

-Paul Moss noted that in the Lafayette evacuation plan that each resident is responsible for knowing a way out of town for their zone. – **This is what the Chiefs say, and we agree. Our job (it could be argued) is to get people aware that they have to do this, and about what else they have to do to prepare. This is why we hired an EP Coordinator.**

- Peter Guerrero said: My primary concern is coordinating any EWS zone information with the Zonehaven polygons. It's important that they be in sync, particularly with regard to evacuation. My initial overall feeling that redundancy is a good thing, that you can't have enough early warning systems, can be counterproductive if these systems provide information that confuses the public and doesn't provide clarity and uniformity. If we go the EWS route any contract must include the requirement that their system is coordinated or linked with Zonehaven's. – **This was addressed above: the same people (Chiefs) would be in charge of both systems, so automatically coordinated.**

- Four concerns from Dave Spath:

1. What is the purpose of the EWS as it relates to the CWS for evacuation communication with residents? During a wildfire threatening Kensington residents, the CWS is intended as the primary form of communication advising residents in specific zones to evacuate. The sirens are not zone specific, so will they be used as a supplement to the CWS and used as a signal to advise **all** Kensington residents to evacuate. If we choose an EWS with voice recordings, using that aspect of the system for zone evacuation seems impractical.

-- **Again, the Chiefs would handle both systems. Based on the studies of traffic load on our streets, it is difficult to see how an evacuation could be phased, or that people would not simply ignore plans and rush out whenever they could (these views have been voiced in our meetings). It's not only voice recordings, it's vocal announcements in real time, which you can't get through any other medium. Especially if the power has been out for some days.**

2. If we decide to implement an EWS, what type of system would best serve Kensington. If the intent of the EWS is to solely advise residents to evacuate, then a simple siren system would appear appropriate. All residents could be advised to evacuate when they hear the sirens. However, if the intent is to use the EWS for communicating non-evacuation information and instructions such as after an earthquake, then a voice recording acoustical system may be appropriate. – **The latter seems more useful but both could work if needed. Without power there are no verbal instructions or items of information, unless you have a battery-powered radio tuned to KCSB, KSFO, or KQED.**

In researching the Mill Valley system, it appears that the city does not use their new LRAD (Long Range Acoustic Devices) system for evacuation alerts. The city indicates on their Warning and Alerts webpage that "in the event of a disaster or large-scale emergency, one or all of the sirens may be activated to alert residents to tune into local media (City website, social media, radio and television stations) for further information and instructions." Evacuation

orders will come from the "Alert Marin" county system, which is analogous to the Contra Costa County CWS. <https://www.cityofmillvalley.org/fire/emergency/warnings.htm>

-- They seem to have the ability and flexibility to do both. It is difficult to expect that most Kensington residents would tune into "local" media, whatever they are (e.g., Berkeley emergency radio), even assuming that people have self-powered radios; and radio and TV stations won't provide much precise information about Kensington. The EWS system could. The CWS system might, if people's devices were still working, and if someone decided to offer granular information through CWS, which has never been done so far. But the EWS could essentially be a local radio station. It would be up to the Chiefs how to use the system. [I spoke to the Mill Valley (now Southern Marin Fire District) folks about this and they clarified that in a fire evacuation they would likely not use the verbal part of the system, just the non-verbal sounds, at least initially.]

3. Regarding the placement of the EWS, in addition to being able to hear them, they need to be located near a power source and, if battery backup is desired, what type of space considerations come into play for the placement of solar panels. – **Most models that we would consider have their own battery supply, which can be periodically replaced, and also a solar panel; these are capable of storing up to 72 hrs of communication (used as needed), and can be replenished continually. Space for the panels is provided on the supporting poles.**

4. If Berkeley plans to implement an EWS system, then we need to understand what they plan to use (LRAD or just sirens) and how they will use them. A fair portion of Kensington will certainly hear the Berkeley system, which has the potential for confusion and misinformation for Kensington residents. – **Yes, just as the Richmond refinery sirens confuse people; but this doesn't seem a reason not to proceed. It could be assumed that Kensington sirens would be heard better than those from Berkeley in nearly all houses; but why would one assume that the information from both sources would be substantially different? Could be mutually supportive. [Especially if they're all from the same vendor. But still two different counties.]**

Lisa contributed these thoughts and questions:

I watched the EPC meeting recording. The only question I had was the effectiveness and longevity of a solar powered system and the space requirement for any panels. – **see above.**

The discussion that you all had at that meeting brought up many good points including how the sirens fit into the comprehensive warning systems that already exist with Zone Haven, CWS, Nixle, etc. – **see above**

I also appreciated your point to find out the reasoning behind Berkeley's decision to move forward with their implementation. Have they prepared a council report on this yet? I couldn't find one with a quick check of records on-line. That report should lay out the rationale, costs, implementation, etc. Perhaps Susan W knows. – **we can check with her [I think you have it now?]**

Having a clear idea of why and when they would be used seems like a good basis for moving forward. – **Although we have our ideas, the implementation would be up to the Chiefs, so knowing what they would do is critical to knowing if it's worth investing.** *[We got some insight from this from the meeting with the Chiefs and the OES folks.]*

Another concern voiced was that the devices (sirens, voices) could not be heard indoors. – **Yes, we're looking more into this. If so then they would only be useful from about 8 am to 6 pm, because everyone is in their houses after that. Very few people in Kensington venture out in the middle of the night, when fires are likely to start during DWEs. We need to get specifics. Obviously the strength of sound emissions decreases with distance, but also people have great individual differences in their awareness of their environments. It is assumed that we would have enough devices in place to get a substantial part of town awakened. And remember, we don't have to wake up everyone: we have to wake people who will wake other people. This is why we need neighborhood organization!** *[The acquisition of these systems by Mill Valley, Berkeley, and Oakland, all of which have very similar topographies to ours, suggests that this problem has been addressed.]*

[Cost of these devices: if it's \$500K and we amortize for 30 years at 4%, the yearly cost is \$28,800 plus a few thousand in maintenance. At 3% it's under \$16,800 a year. And a dollar in 2051 is likely to be worth about 45 cents in today's money.]