

**ENVIRONMENTAL SUSTAINABILITY COUNCIL.
ENERGY TRANSITION SUBCOMMITTEE.**

Friday January 31, 2020 9-11 a.m. Dogwood Room.

MINUTES

CALL TO ORDER: Members: Tim Stevens (Chair), Jon Ward, Michael Trauberman, Thomas Cash, Erika Myers, Andrew Sakallaris

Staff Liaison: Kate Walker, Environmental Programs Coordinator

City Staff: Nancy Vincent, Housing & Human Services; Tara Puzin, Department of Public Works (DPW) Engineering Manager; Zak Bradley, DPW Transportation Engineer; Carly Aubrey, Principal Planner, Community Planning and Economic Development Services

Others: Andy Rankin, Planning Commission; Melissa Teates, Planning Commission; Shaun Dakin, Citizens Advisory Commission on Transportation; MaryBeth Connelly, Vice Mayor, City Council

BEEP Autonomous Shuttle Technology.

The meeting featured an informational presentation by Robb Jenkins of BEEP, describing the current capabilities and limitations of autonomous electric shuttle technology. Open discussion with attendees followed.

- BEEP acts as agent to assist with infrastructure engineering and design, set up service, apply for grants, manage the service (including publicity, outreach, insurance and risk management), etc.; they operate only in Orlando FL at present.
- Shuttle vehicles carry 8 - 10 persons, seated (standing is not allowed under current federal regs).
- BEEP vehicles are ADA accessible, but not yet fully ADA compliant.
- BEEP vehicles may be purchased or leased. The latter option is usually preferred because the technology is changing so fast. Monthly cost currently runs 23k/month, including full BEEP support, and an "attendant" which is currently required by US law.
- The BEEP speaker did not know if Virginia legislation is currently required to allow the service to operate.
- BEEP has the shuttles built for them by unaffiliated manufacturers (Easy Mile - France, Navya - France and Michigan, Local Motors - Tennessee).
- BEEP is a venture-capital funded, privately-owned company.
- Federal grants are available for infrastructure (e.g. charge stations), but not vehicles. Florida provided state funding mainly for infrastructure, but also some funding for vehicles.

- Current US law does not allow US-made AVs to operate on public roads (they may operate on private roads); apparently there is a loophole allowing foreign-made vehicles to operate on public roads (hence the use of Navya vehicles).

- Completely autonomous vehicles matching all the ways we use vehicles today won't be available for at least a decade.
- BEEP vehicles follow pre-programmed routes; "hailing" capability will be developed later.
- Any out-of-ordinary situation encountered such as a crash or even an open door from a parked car will cause the BEEP vehicle to stop operation until the obstacle is cleared.
- BEEP vehicles can operate through four-way stops, but not conventional stoplights (which need to be outfitted with special technology to enable the BEEP vehicles to operate).
- LIDAR technology is used by BEEP vehicles.
- BEEP vehicles use 2 lithium battery packs, similar to those used in EVs, and are expected to last 7-10 years. The vehicles run 5-7 hours on a charge.
- BEEP vehicles are currently only designed to use a Level 2 charger, which takes 3-4 hours to achieve a complete charge.
- Top speed is 13 mph, although 20 mph can be achieved with 13 foot wide lanes; they do not operate well in snow or heavy rain.

Takeaways from the meeting.

- The cost and technical limitations described above make the BEEP service unattractive from a practical perspective (at this time).
- Significant grant funding covering infrastructure and operating costs, including management fees, are needed.
- Continued monitoring of this technology (and other service providers) including early service trials is the best recommendation at this time.

Next Meeting – Thursday February 6, 2020 Dogwood Room.