Zero Emission Buses FAQs_10.19.2022

Why is TheRide considering zero emission buses?

The move to zero emission buses is based on goals from our Board of Directors, the values of the community, and an increasing regulatory push towards cleaner transportation. There have been rapid advancements in the technologies, favorable fiscal incentives, new funding programs, and with the alternative vehicle market getting more mature.

What kind of buses does TheRide currently operate?

TheRide currently has a fleet of both Diesel and Hybrid buses, from Gillig and Nova.

What are the zero-emission bus options being considered?

The zero-emission bus options that are being considered are:

- Hydrogen fuel cell electric buses (FCEB)
- Battery electric buses (BEB)

TheRide is not considering natural gas or overhead trolly buses at this time.

What is hydrogen propulsion? Why is it being considered? Where is it being used?

FCEBs use fuel cells to generate electricity by combining hydrogen and oxygen. The fuel cell charges a small battery which drives the electric motors. They are fueled by filling a storage tank for several minutes, and typically require only one fueling station. FCEB is being considered because it is one of two zero-emission bus technologies.

What is Battery Electric Buses? Why is it being considered? Where is it being used?

BEB use batteries to store electricity and drive the electric motors, and typically require numerous charging stations and several hours to fully recharge. BEBs are being considered because it is one of two zero-emission bus technologies.

What are the benefits of each zero-emission bus option?

- Fuel Cell Electric Buses:
    - Long operating range – can deliver over 90% of AAATA service in cold weather

  - Minimal changes to services cycle compared to current diesel buses, meaning that fueling, washing, and parking procedures can proceed largely unchanged
  - Lower maintenance costs compared to diesel and other fossil fuel buses
  - More cost effective at scale
- Battery Electric Buses:
  - Lower vehicle costs compared to hydrogen fuel cell
  - Lower maintenance costs compared to diesel and other fossil fuel buses
  - Battery range expected to improve
  - Lower fuel costs compared to hydrogen and fossil fuel buses

Are electric buses like electric cars?

Heavy duty vehicles like buses can be in continuous use for 16 hours each day while running a heater, and require far more energy than a light duty car.

How many buses will need to be replaced with zero emission technology?

TheRide has a schedule based on FTA's guidelines of how many years buses may operate and be in service. The plan would be to replace all buses with zero-emission buses over a period of time, possibly 12-20 years.

Can TheRide afford to pursue new propulsion as well as the major new capital projects outlined in the Long-Range Plan, such as new passenger terminals and bus rapid transit?

While TheRide has some local funding to contribute, we will need extensive financial support from the federal and state government to pursue all major projects. It may be necessary to set clear priorities and sequence projects so to maximize funding opportunities. All projects will need to be phased in over several years.

Does TheRide have a carbon neutrality plan or goal? If not, why not? Or, when will they have a plan?

The direction from our Board is that we are to reduce or eliminate our emissions. We are starting with this evaluation of the largest source of our emissions, our bus fleet. Future efforts will focus on support vehicles and our buildings.

How will zero emission buses be funded?

The zero emission buses would need to be funded by a mixture of local, state, and federal funding. Grants from the federal government are the likely source of the majority of the funds, but are not guaranteed and only cover a portion of the costs, and a local share is required.

What will be involved in training employees to maintain zero emission buses?

Training programs have been designed by bus manufacturers to teach bus operators and maintenance technicians about the unique attributes of zero-emission buses. TheRide will work with staff, union representatives, and manufacturers to define the proper training programs, that may include on-site training by manufactures, off-site training at other transit agencies and at bus manufacturer sites, as well as through programs like 'train the trainer'.

When will a decision be made about which propulsion technology TheRide will make?

The federal government accepts grant applications every year. The goal is to have the Board of Director's approval by April 2022, to allow for time to develop and write grant submissions. If more time is required, for example to reduce risks or improve cost estimates, we may fall back to 2023.

Who will decide which propulsion technology will be used?

TheRide's CEO will provide a recommendation to TheRide's Board of Directors for consideration. This recommendation will be based on the propulsion study, combined with feedback from staff, stakeholders and the community. The Board of Directors will review the recommendation and determine next steps.

What other steps is TheRide taking to reduce carbon emissions from their buildings and transit centers?

The Blake Transit Center is LEED Gold certified, meaning it uses less water and energy and reduces greenhouse gas emissions. We have been phasing in LED lighting for several years. Future studies will assess emissions reduction options for smaller buses, support vehicles and facilities.

What is involved in transitioning to zero emission bus technology?

Due to range anxiety, facility retrofits, the economics of mass transit, and staff training considerations, the transition to zero-emissions propulsion will likely impact every aspect of TheRide's operations to some degree. A successful transition requires careful assessment and planning, adequate budgeting, and

clear understandings of the risks involved. Board and community support, as well as staff buy in, will be essential.

What is the timeframe to transition to zero emission bus technology?

It will depend on which zero emission option is chosen and available funding. However, the goal will be to replace a certain number of buses per year, determined by which approach is chosen and available funding. Since the lifespan of a transit bus is at least 12 years, a full fleet transition could take 12-20 years.

How can the public provide input on which zero emission technology TheRide chooses to use?

The public education period will be from October 19 – November 28. The public may view the report at: (LINK). There will be two informational sessions for the public:

- Virtual: November 15, 12:00 p.m. (Noon)
- In-Person: November 15, 6:00 p.m.
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