CONNECT TRANSIT BOARD MEETING AGENDA
February 26, 2025

Notice is hereby given that the Cache Valley Transit District (dba Connect Transit) will hold its regular meeting beginning at: 5:30 pm on Wednesday, February 26, 2025. The meeting will be at the Logan Library, 285 N. Main St., Logan, Utah, Community Room A. The public may also participate via the link below.

Estimated time of consideration

5:30 PM **BOARD MEETING AGENDA**

1. Call to Order
2. Pledge of Allegiance
3. Consent agenda
   - a - approval of agenda
   - b - approval of minutes - January 22, 2025
   - c - next meeting - March 26, 2025
4. Public comments

5:35 PM 5. **Board Business**

A. Consideration of Zero Emission Vehicle Transition - Lieren Hansen, Board Chair

6:00 PM 6. **Management Report**

A. Social Media Engagement - Todd Beutler, CEO

B. Legislative visit to DC - Todd Beutler, CEO

C. Update on facility transition - Jody Kimball, Operations Manager

6:20 PM 7. **Board Chair Report**

A. Recognition of employee anniversaries - Lieren Hansen, Board Chair

8. Public comments

6:30 PM 9. **Adjourn**

The public may join the meeting by calling: 1-669-900-9128 and using the following meeting ID and passcode. Meeting ID: 822 6533 7474 Passcode: 637386

The public may join the meeting by pasting the meeting Link below into their browser:
https://us02web.zoom.us/j/82265337474?pwd=EZddVGHvOGL9DQaqyDgj0qFK3J6xOA.1

Regular Board Meeting Minutes
Cache Valley Transit District
dba Connect Transit
Wednesday, January 22, 2025
5:30 pm
Logan Library
285 N. Main St., Logan, Utah
Community Room A

Present: Lieren Hansen, David Geary, Patrick Jenkins, Ron Bushman, Flor Estrada, Glen Schmidt, Shaun Bushman, and Jeff Turley

Excused: Mike Arnold

Others: Todd Beutler, Curtis Roberts, and Charise VanDyke

Regular Meeting Agenda

1. *Call to order*: Board Chair Lieren Hansen

2. Pledge of Allegiance led by Lieren Hansen

3. Consent Agenda: Lieren Hansen asked for a motion to approve the modified consent agenda (item 6C added to the agenda). Jeff Turley moved; Dave Geary seconded. Vote unanimous.
   A. Approval of Agenda
   B. Acceptance of Minutes – December 11, 2024
   C. Next Board Meeting – February 26, 2025

4. Public comments: No comments or questions.

Board Business

5. **Board Business:**
   A. Presentation of Fraud Risk Assessment - Curtis Roberts, Administration Director: The Fraud Risk Assessment is a required annual assessment for every government entity in Utah (this is the assessment was completed in December 2024). According to this measurement, we have a Low risk level. Connect does more than what's identified on this score sheet to deter fraud. Discussion about the Fraud Risk Assessment. This is separate from the financial audit that is conducted every year; the financial auditors do a separate, more comprehensive audit.

B. Presentation of Zero-Emission Transition Study - Erik Mumm, Kimley-Horn: Interest in zero emission vehicles has been on the rise in the industry. This study looked at the market to see what technology was out there, did deep dive case studies on peer systems (4 total), and evaluated the pros and cons of zero emission use. The two prevalent technologies currently out there right now are battery electric buses and fuel cell electric buses (hydrogen buses). Important considerations of both technologies are what infrastructure is involved and what employee skills are needed to transition vehicle types. The infrastructure needed for electric buses is electric chargers and dispensers. For hydrogen buses, whether you source the hydrogen or make the hydrogen onsite needs to be considered with the infrastructure dependent on which choice is made. Currently the places that produce hydrogen aren't scaling very quickly. Transit systems can make their own onsite, but it requires more of an upfront investment. There are economies of scale associated with the new technologies, so whether battery electric buses or hydrogen buses would cost more depends on fleet size. Hydrogen buses are cost prohibitive for a transit system the size of Connect Transit. Range is an important consideration, particularly considering Connect's longer county routes. In terms of range, battery electric buses have the lowest; hydrogen buses have a better range, but not as good as diesel. Range continues to increase, and batteries are getting better, but there's a limit to how many batteries you can put on a bus. Discussion about electric buses. Buses cannot be retrofitted to run on electric, so they'd be new bus purchases. Temperature has a large impact on how far electric buses can go on a charge. Employees are required to do high voltage training, particular to battery electric buses, to work on them (a specialized training); peer systems have gone so far as to fly a group of mechanics to a location to get hands on experience. With the significant decrease in range for electric buses, there would have to be a significant change to operations to give the same level of service. Batteries degrade over time, which also affects range. The cost per bus for a diesel bus is about a half million dollars and for a zero-emission bus it's one million dollars plus per bus (this doesn't include the additional infrastructure needed to run them). When selecting the peer systems to study, climate was an important consideration (high heat in summer and cold temperatures in winter), as well as fleet size and range. Some of the agencies examined were new to zero emission vehicles, while others have been doing it for longer. Mountain Line (in Missoula, Montana) has a similar climate and fleet size. They were motivated to switch because of federal funding and to improve air quality (their area has air quality issues). They've had to increase their fleet size in order to meet service because of the range of battery electric buses; in winter they're seeing the range half in comparison to the range they get in better weather. The battery electric system's auxiliary and propulsion both use the same source for power (electric), so in the winter they must use a diesel generator to heat the buses because of the demand that both put on the electric system. When considering vehicle type, it is

best to model off the worst weather day when planning. Discussion about maintenance costs. Many agencies haven't had the zero emissions buses long enough to know what the long-term maintenance costs are or experienced what the disposal of batteries would cost. Mass Transit District (in Champaign-Urbana, Illinois) is larger than Connect, but uses the hydrogen buses. They produce the hydrogen fuel onsite with a solar-powered electrolyzer. High Valley Transit (in Wasatch Back, Utah) has some experience with battery electric buses. They've found that the buses can handle hills; the primary issue they face is buses going a range of only 80 miles some days. Mountain Line (in Flagstaff, Arizona) only has 2 buses. They've also observed that the range is quite low on the battery electric buses. They're also seeing a difference day to day. Overall, the general takeaways are that a transition to battery electric buses would require changes to operations (schedule, switching vehicles, etc.); a zero-emission bus transition is expensive (vehicles cost roughly double that of diesel); and hydrogen buses have longer ranges but the infrastructure is cost prohibitive at Connect's fleet size. While there have been a lot of cautions about zero emission vehicles in this presentation there are places to be optimistic about them; the best thing to do is to keep an eye on developments and maintain a cautious approach as Connect has been doing.

C. Discuss Board Committee Assignments - Lieren Hansen, Board Chair: Board members have been emailed their new committee assignments. Committees usually meet once a quarter or more if needed.

6. **Management Report:**

A. Legislative update - Todd Beutler, CEO\General Manager: The state legislative session started on Tuesday; there is nothing that Connect Transit is trying to accomplish this session. The board chair's and general manager's visit to Washington DC is planned for March.

B. Update on facility transition – Jody Kimball, Operations Manager: The transition plan will take the next 9 weeks. There will be 6 weeks to train employees. There is still some active construction going on; there's also some things on back order because of the disruptions caused by the fires and such. Right now, the plan is to be completely in the new building by March 31.

C. Presentation of Conflict of Interest - Todd Beutler, CEO\General Manager: The state legislature passed a law requiring board members to fill out a conflict of interest disclosure by January 31 every year. Board members have all been emailed a form to fill out; the form mirrors the law and links to the specific code. Patrick Jenkins chose to resign (effective immediately) over this change because he's careful about what information he puts online.

7. **Board Chair Report:**
   A. Recognition of employee anniversaries - Lieren Hansen, Board Chair: Patrick Jenkins did a lot for both the Board and the community as board chair; we really appreciate all his hard work while he was on the Board. Employee anniversaries include 18 years for Curtis Roberts (Administration Director), 8 years for Roger Beus (driver), and 5 years for Joshua Achatz.

8. Public comments: No questions or comments.

9. **Adjourn:** Board Chair Lieren Hansen adjourned the meeting.

Zero-Emission Bus Study

Overview

This report outlines the key findings from interviews conducted with peer transit agencies, the potential costs associated with a zero-emission fleet transition, and the critical topics that need to be evaluated to set a policy goal for a potential low- or no- emission fleet transition.

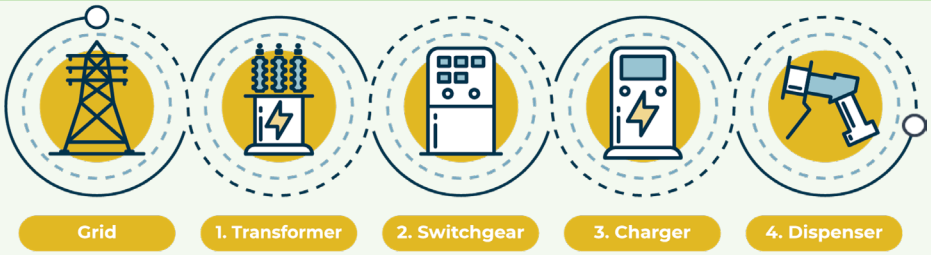
Definitions:

BEB: Battery Electric Bus

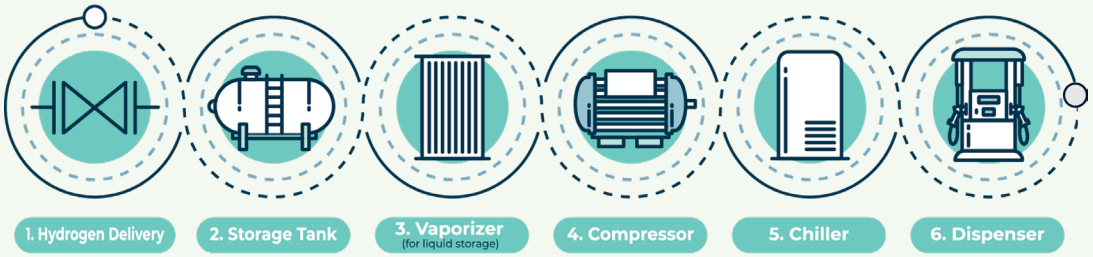
FCEB: Fuel Cell Electric Bus

ZEB: Zero-Emission Bus

Battery Electric Bus (BEB)



Fuel Cell Electric Bus (FCEB)



Source: National Academies of Sciences, Engineering, and Medicine. 2021. Guidebook for Deploying Zero-Emission Transit Buses.

	BEB	FCEB	Diesel Hybrid	Diesel
Vehicle Range (per OEM)	150 – 250 miles	350 miles	500 miles	450 Miles
Fueling/Charging Time*	~5 – 8 hours	~20 minutes	~20 minutes	~20 minutes
Vehicle Purchase Price	$850,000 - $1,000,000 +	$1,000,000 +	$700,000 - $830,000	$550,000
Infrastructure Cost	$69,000 per depot charger/bus**	$4.7 million for 50 buses***	Uses existing infrastructure	Uses existing infrastructure
Operations and Maintenance Cost	lower	higher	moderate	moderate

**Assuming depot slow-charging of BEB, highly variable based on charger power and battery size*
***Does not include other costs associated with addition of chargers, including potential transformer, substation, and conduit upgrades*
****Based on OCTA's 18,000-gallon liquid storage Hydrogen station, built in 2019*

Key Considerations for ZEB Policy Goals

- Environmental Impact
- Economic Impact
- Operational Impact
- Fleet replacement and purchasing plan
- Infrastructure Needs
- Stakeholder Engagement
- Workforce Training
- Regulatory Framework

Peer Agency Interviews

The peer transit agencies identified have similar fleet sizes, climates, and operational challenges. Interviews with each agency focused on sharing experiences, obstacles, and solutions developed through the course of implementing low- and no-emission technologies. These conversations helped to develop an understanding of considerations Connect should make while studying the potential to transition to low- or no-emission vehicles.

	connect public transit	Mountain Line	MTD thrive	High Valley Transit	Mountain Line
Number of Transit Buses	29	30	118	32	30
Current Percent of ZEB	0%	43%	11%	25%	6%
Technology	N/A	BEB	FCEB	BEB	BEB

Key Takeaways & Challenges

Takeways

- BEBs have limited ranges that would likely require operational changes.
- A ZEB Transition is expensive - vehicles are roughly double the price of diesel buses.
- FCEBs have longer ranges, but the infrastructure cost is likely prohibitive at Connect's fleet size.

Challenges

- There are high initial capital costs to update or upgrade facilities to accommodate ZEBs, varying from agency to agency.
- Agencies have had difficulties finding skilled labor to maintain the chargers.
- BEBs have constrained ranges, often requiring fleet expansions, or route and service adjustments.
- There are additional safety considerations with an FCEB deployment, especially regarding fuel production, delivery, and storage.