

Agenda Item Wording:

..title

Presentation of solid waste electric truck pilot – Presentation of staff recommended solid waste electric truck pilot and comparative analysis.

..body

Agenda Date: 04/06/2026

Prepared by: Jason Serpa, Public Works Manager, 713-4533, jason.serpa@visalia.city; Nick Bartsch, Public Works Director, 713-4052, nick.bartsch@visalia.city

Department Recommendation: Staff recommends that the City Council receive the presentation on the Solid Waste Division's recommendation of a pilot electric solid waste truck.

Summary:

The State of California and the California Air Resources Board have mandated that State and local agencies begin converting their heavy-duty fleets to *zero*-emission beginning January 1, 2024. Currently, there are effectively two options, battery-electric and hydrogen fuel cell vehicles. Unfortunately, *low*-emission Compressed Natural Gas (CNG) does not qualify towards meeting the mandated regulation. Due to the lack of hydrogen fuel-cell vehicles entering the market, battery-electric technology is currently the only commercially available and logistically feasible option in the market today. City staff recognize the immediate need to pilot an electric solid waste truck for a long-term benefit of testing, while also developing a possible strategy and pathway to successfully satisfy the Advanced Clean Fleets (ACF) requirements.

Background Discussion:

Historically, the City of Visalia Solid Waste Division has procured a mix of CNG and diesel fueled vehicles to replace or grow the solid waste fleet. Due to the zero-emission regulations in the State of California, the City began the process of researching alternative fuel vehicles, and subsequently, the viability and affordability of purchasing an electric solid waste truck. Staff took the approach of studying various types of electric truck products available for sale, then coming to a recommendation based on the performance and future ownership costs of the vehicle.

After reviewing products from multiple battery-electric truck manufacturers and being able to demo several trucks on the City's routes, one manufacturer performed better than its competitors. Due to the ease of operation, purpose-built design for reduced maintenance and equipment longevity, and perhaps most importantly, battery efficiency, the McNeilus/Volterra is the preferred option, having the ability to perform the same duties as the City's current internal combustion-powered equipment.

With any new technology or product, there is a need to do due diligence by contacting other cities and private operators that are running the specific electric truck product staff is considering. Additionally, the specific truck under consideration was tested for 2 full days onsite so that Solid Waste staff along with Fleet Maintenance personnel could weigh in on the truck's capabilities and/or drawbacks.

References:

Four different current operators of the McNeilus/Volterra truck were interviewed over the phone, ranging in experience from 1-2 years of running the specific equipment. It is noted that almost all the referenced operators listed below did purchase a few trucks initially for testing and now have many more trucks in the fleet and/or ordered. These operators were:

Republic Services (Huntington Beach, CA)
Pride Disposal (Sherwood, OR)
Waste Management (Sun Valley, CA)
Republic Services (Long Beach, CA)

Even though the number of trucks varied from each fleet, ranging from 2 to 10 trucks, the operators listed above all had as much real-life experience as could be expected with the new electric trucks. They all had similar routes with an average of 1,100 – 1,250 cans, comparable to our daily loads.

The first operator staff contacted was Republic Services in Huntington Beach, CA. They have operated five (5) total trucks – (2) trucks for about a year, and (3) trucks for 10 months. They are also scheduled to receive seven (7) more within the next 12 months. Their approach was similar in that they wanted to pilot two (2) trucks before committing to more, and they have become increasingly confident in the performance of the Volterra electric truck provided by McNeilus. Staff received positive information regarding minimum downtime and the ability of the truck to replace an internal combustion counterpart.

The second contact was Pride Disposal from Sherwood, OR. This solid waste company serves a few communities in Oregon and has two (2) Volterra trucks that they have operated for 2 years. This operator, being the most experienced in terms of time with the equipment, was able to answer more detailed questions regarding technician repairs and training, in addition to information on charging stations and the portable chargers that they deployed. This contact had very specific knowledge on the McNeilus Volterra due to his extensive time rolling out the truck and testing from the beginning of procurement. They were able to articulate many nuances of the truck, including that tires (while not different than any other internal combustion-powered (ICE) vehicle) may be the most expensive regular maintenance item, as many other preventative maintenance items (like oil changes) are no longer needed. They also mentioned that other items like brakes and fluids would have a greater maintenance interval, lowering the overall cost of preventative maintenance and breakdowns as compared to ICE trucks. It was also encouraging to note that even on their worst day (including a 2-hour breakdown), their longest route (by mileage and number of pick-ups), hilly terrain, and on a 90-degree day, the truck still came in with a 23% charge on the battery. On a normal day, the battery charge would typically end at 40% - 80%, depending on the route based on 1,100 can pickups.

Staff's third contact, Waste Management from Sun Valley, CA, currently has nine (9) McNeilus Volterras, with eight (8) of them being side-loader operations. Their experience started in September of 2025. They stated that they have had no issues with the cab and chassis. Regarding the body, they have had typical mechanical issues pertaining to hydraulic lines and sensors, but nothing major. The longest downtime they have

experienced for repair was 2 weeks, and out of their 9 trucks, 7 have had no issues at all. The advice they wanted to impart to future users was to ensure that any new truck purchased has the latest programming to avoid the sensor issues they had on a couple of trucks. They also gave us the latest software version upgrade so we can ensure that it is completed on a truck if we decide to purchase one.

Staff then contacted a fourth operator of the McNeilus product, Republic Services in Long Beach, CA. Even though their base was in Long Beach, they serve many communities, including school districts. They currently run twelve (12) McNeilus Volterra trucks and expect delivery of ten (10) more within the year. Their experience with McNeilus goes back 16 months, as they received one of the first Volterras to be sold. They stated that in the first couple of months they had extreme issues regarding software that needed upgrading, and some minor hydraulic issues. After those bugs were worked out, they have been happy with the product and have experienced nearly no downtime. They did have a battery issue with the very first truck they received, which needed to have a warranty replacement of the battery pack. Overall, they are happy with the product and state that the support response they receive from their dealer is top notch, with a technician being dispatched on the same day of issue in most instances.

Even through initially testing new electric truck technology and getting good references, staff understand that with any new technology, extended testing, specific to the City of Visalia and its solid waste operation, is most valuable before a more extensive investment of converting the entire fleet and installing charging infrastructure is made. This is why staff is proposing a pilot as the best option. The pilot would purchase one truck, put that truck into service, and observe the compatibility and comparability of operational costs. Subsequent purchases would then be evaluated and considered upon the successful performance of the pilot truck.

Service:

This type of new vehicle technology, especially specialized equipment like an electric solid waste truck, requires specialized training on the fleet service side. The local McNeilus and Volterra dealer is located in Tulare. They will be responsible for conducting service training with the City's Fleet Maintenance technicians, including the low and high voltage training, necessary for safety around electric vehicles. This type of training is included in the purchase of the Volterra truck, including information on all necessary tooling that will need to be purchased for the service of these trucks.

Along with the specialized training for high voltage repairs, staff will need to procure specialized personnel protective equipment and supplies. Even though the costs of these items are the same as PPE that the fleet mechanics would otherwise buy for other types of battery electric equipment, it is important to acknowledge.

The City also has the option to have the local dealer perform all required routine maintenance at the cost of \$1,000 per quarter, or \$4,000 annually, per vehicle. These costs will be further evaluated through the pilot to determine cost effectiveness, convenience, and efficiency.

Charging Infrastructure:

In regard to the presented pilot, staff plans to utilize Transit's available charging station, as it has already been tested in its ability to charge the McNeilus Volterra. For longer term consideration, if the City continues with a plan of electrifying fleet operations, staff will incorporate additional infrastructure into the Corporation Yard master plan and research avenues for additional grant opportunities that exist, like Southern California Edison's programs for infrastructure upgrades. For reference, a single level 2 charger station can run from \$25,000 - \$75,000, depending on existing site, and a level 3 fast charger can run up to \$250,000 for a single fast charger station.

Staff also researched a backup charging unit. This unit could be utilized to charge the truck overnight in the same manner as the Transit charging station, or used as a backup if charging infrastructure went down. This charger was quoted at \$28,333.20, tax included, and is included in the cost breakdown in the financial section below.

Fiscal Impact including annual maintenance and operating costs: Even though the initial capital investment of a battery-electric-powered truck is greater than its CNG-powered equivalent that the City is accustomed to purchasing, staff have prepared a side-by-side comparison of the expected lifetime costs of the electric-powered options compared to the City's typical internal combustion-powered natural gas vehicle. As seen below, the initial capital to purchase the electric truck is higher, but the electric truck does make strides in payback by year ten (in accordance with the City's current vehicle replacement schedule), achieving an anticipated near equal total cost of ownership, with maintenance and fuel being the greatest in contrast. Staff would like to note that due to State requirements, diesel trucks are no longer considered a viable option to purchase and will be unavailable in the future, so it is not considered in the comparisons below.

| 10-year Electric VS CNG Comparison | | | |
|--|-----------------------|-----------------------|-----------------------|
| | CNG | Electric Demo | Electric New |
| Purchase Price | \$527,371.08 | \$848,035.38 | \$931,171.35 |
| Initial Charger | \$0.00 | \$28,333.20 | \$28,333.20 |
| Grant Dollars HVIP | \$0.00 | (\$150,000.00) | (\$150,000.00) |
| Total Purchase Price (including tax) | \$527,371.08 | \$726,368.58 | \$809,504.55 |
| Estimated Repairs (related to Parts & Labor) | \$285,919.67 | \$209,035.87 | \$209,035.87 |
| Estimated Preventative Maintenance | \$38,082.29 | \$19,041.14 | \$19,041.14 |
| Estimated Fuel | \$152,433.44 | \$114,478.50 | \$114,478.50 |
| Total Cost of Ownership (Annual) | \$1,003,806.48 | \$1,068,924.09 | \$1,152,060.06 |

Staff has been presented with two purchasing options that are shown above. The manufacturer has an electric demo truck available with 1,721 miles that could be sold to the City at a discount. It was used as a demonstration vehicle for the industry to try out and is readily available for purchase. It is identical to the new electric truck that is proposed above at the higher price point.

Possible additional grant availability:

There is a very high probability that the City would also be able to apply its previously awarded Truck Replacement Program grant from the California Air Resources Board of an

additional \$128,832.00. The use of this grant will be dependent on the type of funding that the larger HVIP grant (above) is funded from. The Truck Replacement Program grant amount is not reflected in any of the cost estimates above and will aid in further lowering the overall initial cost, if it materializes.

Prior Council Action: Council has approved Diesel and CNG truck purchases in the past for budgeted replacements and growth vehicles.

Alternatives: N/A

Recommended Motion (and Alternative Motions if expected):

..recommendation

No motion necessary.






Environmental Assessment Status: N/A

CEQA Review: N/A

Deadline for Action: 04/06/2026

Attachments: Solid Waste Electric Truck Pilot Presentation

Strategic Goal: Indicates which City Strategic Goal(s) this item supports. Check all that apply.

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| <input type="checkbox"/>  Economic Vitality | <input type="checkbox"/>  Organizational Excellence | <input type="checkbox"/>  Fiscal Strength | <input checked="" type="checkbox"/>  Infrastructure & Growth | <input type="checkbox"/>  Quality of Life |
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