

Sustainable CU
The Environmental Improvement Initiative

E-Ride: Zero Emissions Electric Utility Vehicle
March 3, 2017 Proposal

Description of Project

CU Recycling plays an integral role to create and support zero waste events on campus for a variety of events that include home football games, student move in/move out, concerts, welcome events, Bolder Boulder, and many others. To set up bins and collect recycling/compost from these events, CU Recycling has been using an old gas powered Mitsubishi utility vehicle that was passed down by Facilities Management 15+ years ago. Along with burning gas (and not very cleanly), the “Mitsu” is on its last legs and could die on us at any moment, leaving us stranded (literally) without a vehicle. CU Recycling would like to replace this vehicle with a zero-emissions electric vehicle from E-Ride Industries. The E-Ride vehicle is also street legal and would allow support for zero waste events beyond main campus in areas that include East Campus, Research Park, and Williams Village. Although the main use of this zero emissions vehicle will be for zero waste event support, it can also be used by other Environmental Center (EC) Programs for any necessary functions (ex: bike impounds with the bike program, Buff Bike transport, EC conference support, etc). EC program managers and trained student staff will be allowed to use the vehicle after taking a required campus driving course.

Matching Funds or In-Kind Support

\$15,000 in matching funds will be provided by the Environmental Center to bring down the requested funding needs. Along with supporting zero waste events that are coordinated through the EC, the E-Ride will also be used for other EC programs as needed (bike program, special material recycling, outreach event support, etc).

Project Timeline, Scope and Feasibility

- A. Timeline to secure an E-Ride electric vehicle is rather aggressive, as we would like it to be in-hand by May 5th, 2017 for Student Move Out on campus.
 - a. Quote obtained: done
 - b. PO Issued: week of 3/13/17
 - c. Order placed: week of 3/20/17
 - d. Vehicle Production: 3/27/17 – 5/5/17 (6 weeks)
 - e. Parking/Charging space secured: by 4/10/17
- B. Scope is not very extensive, as this project can be coordinated through a few people
 - a. Request Sustainable CU funds = \$20,000
 - b. 1 person needed to coordinate the production and purchase of the E-Ride
 - c. Department coordination is needed through:

- i. Transportation Services – purchase of vehicle and inclusion into vehicle fleet
 - ii. Procurement Service Center – Purchase Order for purchase of vehicle
 - iii. Parking Services – obtain a parking/charging location for the vehicle
 - iv. Distribution Center – receiving the vehicle
- C. Project time line will be met since a lot of the up-front leg work has already been done:
 - a. We have used a demo E-Ride for 2 home football games this past fall to make sure it would meet our needs. It met and surpassed our needs to support zero waste events on campus.
 - b. A quote has been obtained from E-Ride Industries
 - c. Transportation Services has already been made aware of this potential vehicle and are ready to assist with the vehicle requisition paperwork and integrate the vehicle into the campus fleet.
 - d. Procurement Service Center has already looked into this vehicle and determined it can be sole sourced, which means they can issue a Purchase Order quickly
 - e. Parking Services is currently looking into spaces to park/charge an electric vehicle for CU Recycling. Since parking is limited on main campus, there is a strong chance the E-Ride will live on East Campus
 - f. Distribution Center can receive the vehicle anytime we can get it delivered, as they have already received the demo E-Ride we used this past Fall

Environmental Impact

From the Blueprint for a Green Campus: Creating a Climate-Friendly Campus

- Convert 25% of university-owned fleets to high efficiency and alternatively-fueled vehicles and begin offsetting remaining emissions

The E-Ride, zero emissions electric utility vehicle will help the campus meet its goals related to alternatively fueled vehicles. Along with helping to meet campus goals, the E-Ride will improve air quality on campus by removing local emissions currently associated with small event recycling vehicles.

CU Campus Waste Plan:

http://www.colorado.edu/masterplan/plan/documents/SectionIII_000.pdf

III. Sustainability, C. Zero Waste

Goal:

- CU-Boulder should increase its own landfill diversion rate to at least 90 percent by 2021 as a continuous improvement benchmark in pursuit of a zero-waste goal.

The E-Ride will facilitate further landfill diversion by support of campus zero waste events, including home football games, concerts, stadium events (Bolder Boulder), and student Move In/Out. It will also enable an increased reach for the EC staff (student and permanent) to

accommodate more zero waste events on campus, large and small, since it will be a reliable and accessible vehicle.

Student Involvement

- A. Although student involvement in the acquisition of this electric vehicle is not high, student involvement with zero waste events on campus and the use of this vehicle is extremely high. Student recycling staff will be regularly using this vehicle to set up, service, and break down large zero waste events across many campus venues. Along with building operational skill sets related to event coordination and production, working with this electric vehicle will develop leadership and decision making skills for our student staff. These are all real world skills, including driving vehicles during larger events, that are directly translatable to a future profession in the recycling industry.
- B. By removing a gas powered, emissions producing vehicle off of campus, we are enhancing the overall experience of students at events and anywhere the vehicle is used. Students will no longer have to breath in smoke or emissions from a nearby recycling utility vehicle. The E-Ride is also a working demonstration of an electric powered vehicle, showing that it is possible to have a fleet of operational vehicles that are emissions free and some day, powered by renewable resources. The E-Ride serves as a “rolling billboard” demonstration of sustainability in action.

Social Equity

The E-Ride is built in the USA, thus stimulating domestic commerce and supporting a smaller production business and further expand the potential of electric vehicles. Likewise, the vehicle reduces the emissions of global greenhouse gases from CU—which disproportionately affect peoples of developing nations.

Innovation

The E-Ride provides a new approach to the existing model for a small electric vehicle by providing several state of the art technologies that improve function, durability, and efficiency:

- Lithium Ion battery pack: lighter, more powerful, last longer, and store more energy
- Battery Pack chamber: temperature controlled to ensure performance in all conditions and maintain battery life when it is parked for durations of time
- Dual Charge Port: quick charge port for 3 hour charge and normal charge port for 8 hour charge
- Extended bed and cage: to provide larger carrying capacity
- Towing capacity of 1000+ lbs: improves material handling capacity of vehicle
- Street legal on roads posted 35mph and under: allows for access to areas beyond main campus

By using a zero emissions vehicle for zero waste events, the positive impact of recycling/composting at events is improved through a reduction in fuel and energy used.

Detailed Project Budget and Savings

Detailed cost estimate is attached.

The vehicle will also save fuel costs as the recharging during off peak electricity is a fraction of the per mile costs of liquid fuels.

Project Longevity

The vehicle has a nominal lifetime of approximately 15 years. However, this is based on daily usage of 30-50 miles per day. Since anticipate use is closer to 20-30 miles per week, it is anticipated that the E-Ride will last much longer, with a rough estimate of 20 years. The vehicle warranty is 1 year, bumper to bumper. Battery pack life is estimated at up to 20 years, depending on how the vehicle is maintained and used.

Applicant Information

Name: Daniel Baril

Email: baril@colorado.edu

Phone: 303-492-4330

University affiliation: Staff

Title: Zero Waste Program Manager

University Department: Environmental Center





Quote

Quote # 11032016-1

Quote to:	University of Colorado-Boulder	Quote Date:	11/3/16
Address:	1800 Grant Street	Sales Representative:	John Herou
	Suite # 500	Business Phone:	763-389-9139
City/State/Zip	Denver, CO 80203	Fax Number:	763-389-2417

Information: EXV2AC - Patriot with Custom extended 7' flatbed

Contact Name: Daniel Baril Ph: 303-492-4330 Est. Ship Date:
daniel.baril@colorado.edu

Part Number	Qty		Unit Price	Total Price
EXV2AC	1	2 Passenger custom extended 7' flatbed, 35 H.P. 72 volt AC drive system, hard doors with roll up windows, DC heater/defroster, dual dome lights and dual windshield wipers		\$ 23,975.00
ETRSH	1	Trash hauler cage (84")		\$ 2,815.00
ELITHIUM	1	Lithium battery upgrade with battery warmer		\$ 4,000.00
EBALM	1	Backup alarm		\$ 66.00
EFCIN	1	Fast charge inlet		\$ 627.00
ERIM-A	1	Aluminum rims		\$ 459.00
EACPM-AC	1	AC power meter		\$ 563.00
EINKIT-2	1	Insulation kit		\$ 493.00
ERAD	1	AM/FM radio		\$ 385.00
EREC-2	1	2" receiver hitch		\$ 261.00
ERLT	1	Reverse light		\$ 69.00
ESLI	1	Sliding rear window		\$ 72.00
ESUN	1	Sun visor set (2)		\$ 243.00
EWWK	1	Windshield washer kit		\$ 141.00
EACDCHTR	1	AC/DC heater		\$ 803.00

Sub Total \$ 34,972.00

Payment/Special Information: Destination Charge TBD
FOB Factory Princeton, MN Total

e-ride Industries does not collect sales tax.

Seller Signature - e-Ride Industries Date