

City of Golden Electric Vehicle Decision-Making Matrix

Vehicle Requested	Street Sweeper
Requesting Department	Streets
Submittal Date	6/1/2023
Fleet Review Date	6/15/2023

Description of Vehicle Use and Essential Functions

A street sweeper removes debris and other material from the roadways and bike lanes that can create safety hazards such as greater braking distance and increased risk of skidding and loss of control. Golden owns two street sweepers, which are in operation Year round and improve safety for both vehicles and cyclists.

Specifications	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Year	2023	2023	2023
Manufacturer	Global	Global	Global
Model	M4EV	M4 Hybrid*	M4HSD
Engine	electric 160kW	electric/diesel 6.7L	gas 6.7L
Vehicle Class	7	7	7
Standard or Extended Range Battery	Standard	Standard	n/a

Performance	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Horsepower Rating (hp)	160KW	200	280
Tow Capacity (lbs)	n/a	n/a	n/a
Payload Capacity (lbs)	n/a	n/a	n/a
Acceleration (0-60, seconds) <b>Police only</b>	n/a	n/a	n/a

Fuel Economy	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
EPA Fuel Economy (MPGe or MPG, combined)	21KW per hour		2.65 Gallons per hour
Total Range (mi.)	10 hrs		n/a
Annual Fuel Cost (fuel or electricity)	\$2,925	\$4,000	\$6,000

Energy & Environment	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Annual Petroleum Consumption (barrels)	0	1,000	2,000
Greenhouse Gas Tailpipe Emissions	100% reduced emissions	50% reduced emissions	89 metric tons/yr
Price per ton of carbon for 7 year average life (\$50/ton)	\$0	\$15,575	\$31,150

Price & Replacement	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Purchase Price (\$)	\$707,000	\$578,543.21	\$368,916
Source	state bid pricing	manufacturer	state bid pricing
State Grant Incentive Available (est. \$)	\$424,200	\$0	\$0
trade-in estimate	\$65,000	\$65,000	\$65,000
Net Price	\$217,800	\$513,543	\$303,916
Leasing option (yes/no)	no	no	no
Leasing Price (\$)	n/a	n/a	n/a
Leasing Term (yrs)	n/a	n/a	n/a
City of Golden Replacement Schedule (yrs)	5	5	5
Estimated lead time for delivery	9 months	9 months	6 months
Warranties	5 year battery	2 year engine 2 year elevator sprocket	2 year engine 1000 hr dirt shoe wear 2000 hr elevator sprocket

**Additional Considerations**

Is there an available existing charger where the vehicle will be stored?

No

If not, has a charger been included for installation?

Not included in order, but planned for install by October 2023.

**Fleet comment:**

- The M4EV and M4HSD are nearly identical machines, I believe that either will perform in the field as we expect.
- The M4 hybrid is only available as a rear dump and will not meet the needs of our operators.
- I do have some concern about charging EVs indoors. EVs seem to be most likely to catch fire while charging. I believe this could pose a fire risk and cause damage to the building and surrounding equipment. However, if we're able to install a charger to current building codes there is not a reason to believe we could not charge it indoors.
- The feasibility of purchasing the M4EV over the M4HSD comes down to monies granted by the state to offset the costs of electric the machine. In addition to the additional costs of installing a charger inside heated storage bays where the sweepers are kept.

**Assumptions:**

- equipment economy is based on hours not MPG there are not EPA MPG rating for equipment. - KW per hours is based on 210KW battery fully charged and a claimed range of "up to" 10hrs Gallons per hour based on 2022 statistics from the M4HSD already owned by the city.
- PHEV Economy is difficult to calculate as it depends on how long the equipment is operated between charging in 2022.

- the current M4HSD owned by the city of golden used 1625 gallons of fuel

Assumption: \$3.00/gal gas.

Assumption: sweeper runs 1900 hours per year.

Assumption: hybrid uses half of full gas vehicle but also costs some to plug in electricity.

Calculator: [https://afdc.energy.gov/fuels/electricity\\_charging\\_home.html](https://afdc.energy.gov/fuels/electricity_charging_home.html)

<https://globalsweeper.com/products/mechanical/m4-electric-100-plug-in>

<https://globalsweeper.com/products/mechanical/global-m4-hybrid>

<https://globalsweeper.com/products/mechanical/global-m4-hsd>

[https://afdc.energy.gov/fuels/electricity\\_charging\\_home.html](https://afdc.energy.gov/fuels/electricity_charging_home.html)

City of Golden Electric Vehicle Decision-Making Matrix

Vehicle Requested	Cemetery plow truck
Requesting Department	Cemetery
Submittal Date	6/23/2023
Fleet Review Date	6/23/2023

Description of Vehicle Use and Essential Functions

This truck is what the cemetery staff use for plowing snow, pulling funeral set up trailer, and hauling pallets of sod.

Specifications	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Year	N/A	N/A	2024
Manufacturer	N/A	N/A	Chevrolet
Model	N/A	N/A	Silverado 3500 HD
Engine	N/A	N/A	6.6L GDI
Vehicle Class	N/A	N/A	3
Standard or Extended Range Battery	N/A	N/A	n/a

Performance	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Horsepower Rating (hp)	N/A	N/A	401
Tow Capacity (lbs)	N/A	N/A	18,500
Payload Capacity (lbs)	N/A	N/A	4,045
Acceleration (0-60, seconds) <i>Police only</i>	N/A	N/A	N/A

Fuel Economy	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
EPA Fuel Economy (MPGe or MPG, combined)	N/A	N/A	N/A
Total Range (mi.)	N/A	N/A	?
Annual Fuel Cost (fuel or electricity)	N/A	N/A	\$1,835

Energy & Environment	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Annual Petroleum Consumption (barrels)			
Greenhouse Gas Tailpipe Emissions			
Price per ton of carbon for 7 year average life (\$50/ton)			

Price & Replacement	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Purchase Price (\$)	N/A	N/A	\$49,069
Source	N/A	N/A	state bid pricing
State Grant Incentive Available (est. \$)	N/A	N/A	\$0
trade-in estimate	N/A	N/A	\$15,000
Net Price	N/A	N/A	\$34,069
Leasing option (yes/no)	N/A	N/A	no
Leasing Price (\$)	N/A	N/A	n/a
Leasing Term (yrs)	N/A	N/A	n/a
City of Golden Replacement Schedule (yrs)	N/A	N/A	10
Estimated lead time for delivery	N/A	N/A	3-6 MO
Warranties	N/A	N/A	3 year 36K

Additional Considerations	
Is there an available existing charger where the vehicle will be stored?	No

If not, has a charger been included for installation?

No	
----	--

**Fleet comment:**

- this vehicle is due for replacement in 2024.
- The EV pickups which are in production the F150 lightning and the Silverado EV are class 2 vehicles and do not meet payload requirements.
- There are not any EV pick up trucks available in the class 3 range with an 8 foot bed.
- EV range is dramatically decreased in snow removal operation Plows are not available for EV pickups.
- It is for these reasons I move to purchase the Silverado 3500 HD which will meet the needs of the department.

City of Golden Electric Vehicle Decision-Making Matrix

Vehicle Requested	Fire crew cab long box pickup.
Requesting Department	Fire
Submittal Date	6/23/2023
Fleet Review Date	6/23/2023

Description of Vehicle Use and Essential Functions

These trucks are used by the fire fighters at station 21 to respond to emergencies. they will be outfitted with emergency lights will be equipped with a heavy duty slide out bed, the may be expected to carry SCBA rack, and will carry the skyhook winch and other heavy backcountry and extrication equipment. and should be able to transport 4 Fire Fighters's kitted out with their gear etc. they may also be out-fitted with a snowplow.

Specifications	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Year	N/A	N/A	2024
Manufacturer	N/A	N/A	Chevy 3500 HD
Model	N/A	N/A	Silverado 3500 HD
Engine	N/A	N/A	6.6L GDI
Vehicle Class	N/A	N/A	3
Standard or Extended Range Battery	N/A	N/A	n/a

Performance	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Horsepower Rating (hp)	N/A	N/A	401
Tow Capacity (lbs)	N/A	N/A	18,500
Payload Capacity (lbs)	N/A	N/A	4,045
Acceleration (0-60, seconds) <b>Police only</b>	N/A	N/A	N/A

Fuel Economy	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
EPA Fuel Economy (MPGe or MPG, combined)	N/A	N/A	N/A
Total Range (mi.)	N/A	N/A	?
Annual Fuel Cost (fuel or electricity)	N/A	N/A	\$973

Energy & Environment	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Annual Petroleum Consumption (barrels)			
Greenhouse Gas Tailpipe Emissions			
Price per ton of carbon for 7 year average life (\$50/ton)			

Price & Replacement	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Purchase Price (\$)	N/A	N/A	\$49,069
Source	N/A	N/A	state bid pricing
State Grant Incentive Available (est. \$)	N/A	N/A	\$0
trade-in estimate	N/A	N/A	\$15,000
Net Price	N/A	N/A	\$34,069
Leasing option (yes/no)	N/A	N/A	no
Leasing Price (\$)	N/A	N/A	n/a
Leasing Term (yrs)	N/A	N/A	n/a
City of Golden Replacement Schedule (yrs)	N/A	N/A	10
Estimated lead time for delivery	N/A	N/A	3-6 MO
Warranties	N/A	N/A	3 year 36K

**Additional Considerations**

Is there an available existing charger where the vehicle will be stored?

No

If not, has a charger been included for installation?

No	
----	--

**Fleet comment:**

- There are a total of 2 crew cab long box Pick up trucks, due for replacement in 2023.
- The EV pickups which are in production the F150 lightning and the Silverado EV are class 2 vehicles and do not meet payload requirements. and are only offered with a 5.5 bed.
- There are not any EV pick up trucks available in the class 3 range with a 4 door crew cab and an 8 foot bed.
- no snow plows are available for EV pickups, and plowing snow will have dramatic effect to range.
- It is for these reasons I move to purchase the Silverado 3500 HD which will meet the needs of the department.

City of Golden Electric Vehicle Decision-Making Matrix

Vehicle Requested	Fire vehicle
Requesting Department	Fire Department
Submittal Date	6/26/2023
Fleet Review Date	6/26/2023

Description of Vehicle Use and Essential Functions

These 3 vehicles are used by the Battallion Chiefs, Fire Inspectors and Deputy fire chiefs, these vehicles are outfitted with emergency lights, radios and computers. they wre out fitted with a topper and bedsilde to secure protect and access fire fighting gear. these are Take-home vehicles which are not stored at the fire station in off-hours

Specifications	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Year	2024	N/A	2024
Manufacturer	Chevrolet	N/A	Chevrolet
Model	Silverado EV	N/A	Silverado 1500
Engine	Electric	N/A	2.7 Turbo GDI
Vehicle Class	2	N/A	2
Standard or Extended Range Battery	N/A	N/A	n/a

Performance	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Horsepower Rating (hp)	660	N/A	310
Tow Capacity (lbs)	8000	N/A	9,000
Payload Capacity (lbs)	1200	N/A	1,900
Acceleration (0-60, seconds) <b>Police only</b>	N/A	N/A	N/A

Fuel Economy	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
EPA Fuel Economy (MPGe or MPG, combined)	67/59MPGe	N/A	17/18MPG
Total Range (mi.)	350	N/A	432
Annual Fuel Cost (fuel or electricity)	N/A	N/A	\$2,715

Energy & Environment	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Annual Petroleum Consumption (barrels)			
Greenhouse Gas Tailpipe Emissions			
Price per ton of carbon for 7 year average life (\$50/ton)			

Price & Replacement	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Purchase Price (\$)	\$72,855	N/A	\$44,117
Source	state bid pricing	N/A	state bid pricing
State Grant Incentive Available (est. \$)	0	N/A	\$0
trade-in estimate	15000	N/A	\$15,000
Net Price	\$57,855	N/A	\$29,117
Leasing option (yes/no)	N/A	N/A	no
Leasing Price (\$)	N/A	N/A	n/a
Leasing Term (yrs)	N/A	N/A	n/a
City of Golden Replacement Schedule (yrs)	10	N/A	10
Estimated lead time for delivery	?	N/A	?
Warranties	3year 36 bumper to bumper 8 year 100k drivetrain	N/A	3year 36 bumper to bumper 8 year 100k drivetrain

**Additional Considerations**

Is there an available existing charger where the vehicle will be stored?

No
----

If not, has a charger been included for installation?

No	
----	--

**Fleet comment:**

- 2 of these vehicles were due for replacement in 2023 and one in 2024

- These vehicles are take-home vehicles. I believe in most cases the vehicle can be charged at a city facility during a normal work shift. However, there could be a situation where a take home vehicle may not have an adequate time to charge during a shift. The requirement to allow a vehicle to be taken home is that it could be used to respond to a city emergency. If the vehicle is not adequately charged to respond to that emergent incident, then it will fail to meet the needs of the city. To make an EV a viable choice in this instance it may be necessary to charge at a person's home as well as a city facility.

- first model year may be difficult to source toppers and bed sildes to fit new vehicle.

- It is for these reasons I move to purchase the Silverado 1500 which will meet the needs of the department.



City of Golden Electric Vehicle Decision-Making Matrix

Vehicle Requested	Fleet Service truck
Requesting Department	Fleet Service truck
Submittal Date	6/23/2023
Fleet Review Date	6/23/2023

Description of Vehicle Use and Essential Functions

This truck is what Fleet uses to respond to breakdown calls and perform repairs in the field. It is outfitted with a service body and carries tools for mobile repairs. It also includes, air compressor, welder and torch for use in mobile repair.

Specifications	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Year	N/A	N/A	2024
Manufacturer	N/A	N/A	Chevy 3500 HD
Model	N/A	N/A	Silverado 3500 HD
Engine	N/A	N/A	6.6L GDI
Vehicle Class	N/A	N/A	3
Standard or Extended Range Battery	N/A	N/A	n/a

Performance	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Horsepower Rating (hp)	N/A	N/A	401
Tow Capacity (lbs)	N/A	N/A	18,500
Payload Capacity (lbs)	N/A	N/A	4,045
Acceleration (0-60, seconds) <b>Police only</b>	N/A	N/A	N/A

Fuel Economy	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
EPA Fuel Economy (MPGe or MPG, combined)	N/A	N/A	N/A
Total Range (mi.)	N/A	N/A	?
Annual Fuel Cost (fuel or electricity)	N/A	N/A	\$584

Energy & Environment	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Annual Petroleum Consumption (barrels)			
Greenhouse Gas Tailpipe Emissions			
Price per ton of carbon for 7 year average life (\$50/ton)			

Price & Replacement	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Purchase Price (\$)	N/A	N/A	\$49,069
Source	N/A	N/A	state bid pricing
State Grant Incentive Available (est. \$)	N/A	N/A	\$0
trade-in estimate	N/A	N/A	\$15,000
Net Price	N/A	N/A	\$34,069
Leasing option (yes/no)	N/A	N/A	no
Leasing Price (\$)	N/A	N/A	n/a
Leasing Term (yrs)	N/A	N/A	n/a
City of Golden Replacement Schedule (yrs)	N/A	N/A	10
Estimated lead time for delivery	N/A	N/A	3-6 MO
Warranties	N/A	N/A	3 year 36K

**Additional Considerations**

Is there an available existing charger where the vehicle will be stored?

No

If not, has a charger been included for installation?

No	
----	--

**Fleet comment:**

- this vehicle is due for replacement in 2024.
- The EV pickups which are in production the F150 lightning and the Silverado EV are class 2 vehicles and do not meet payload requirements. and are only offered with a 5.5 bed.
- There are not any EV pick up trucks available in the class 3 range with an 8 foot bed.
- It is for these reasons I move to purchase the Silverado 3500 HD which will meet the needs of the department.

City of Golden Electric Vehicle Decision-Making Matrix

Vehicle Requested	Patrol Vehicles
Requesting Department	Police
Submittal Date	6/23/2023
Fleet Review Date	6/23/2023

Description of Vehicle Use and Essential Functions

Patrol vehicles can be marked or unmarked police vehicles. They are outfitted with lights and sirens, computer and radio, prisoner compartments as well as other gear essential to safely and effectively police the city. Patrol vehicles are subject to very heavy usage, and at times are in operation around the clock as one shift officer goes off and the on-coming officer drives the same vehicle back-to-back with little or no available down time.

Specifications	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Year	N/A	2024	2024
Manufacturer	N/A	Ford	Ford
Model	N/A	Interceptor hybrid	Interceptor
Engine	N/A	electric/3.3L gasoline	3.0 GDI turbo
Vehicle Class	N/A	1	1
Standard or Extended Range Battery		Standard	n/a

Performance	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Horsepower Rating (hp)	N/A	318	400
Tow Capacity (lbs)	N/A	n/a	n/a
Payload Capacity (lbs)	N/A	1670lbs	1670lbs
Acceleration (0-60, seconds) <b>Police only</b>	N/A	7.84	5.50

Fuel Economy	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
EPA Fuel Economy (MPGe or MPG, combined)	N/A	24 MPG	19 MPG
Total Range (mi.)	N/A	456	361
Annual Fuel Cost (fuel or electricity)	N/A	\$3,393	\$4,286

Energy & Environment	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Annual Petroleum Consumption (barrels)	N/A		
Greenhouse Gas Tailpipe Emissions	N/A		
Price per ton of carbon for 7 year average life (\$50/ton)	N/A		

Price & Replacement	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Purchase Price (\$)	N/A	\$49,394.00	\$50,094
Source	N/A	manufacturer	state bid pricing
State Grant Incentive Available (est. \$)	N/A	\$0	\$0
trade-in estimate	N/A	\$10,000	\$10,000
Net Price	N/A	\$39,394	\$40,094
Leasing option (yes/no)	N/A	no	no
Leasing Price (\$)	N/A	n/a	n/a
Leasing Term (yrs)	N/A	n/a	n/a
City of Golden Replacement Schedule (yrs)	N/A	5	5
Estimated lead time for delivery	N/A	unknown	unknown
Warranties	N/A	3 year 36k	3 year 36K

**Additional Considerations**

Is there an available existing charger where the vehicle will be stored?

No
----

If not, has a charger been included for installation?

No	
----	--

**Fleet comment:**

- There are a total of 7 patrol vehicles that are due to replace between now and 2024. 2 of which have been or order since early 2022. Ford has not been able to keep up with demand for police vehicles nationwide, particularly with the hybrid powertrain option.

- PD has expressed concern with using EVs as patrol vehicles in a memo provided to me by Deputy Chief I quote- "Having a 100% EV problematic as the heavy, continuous nature of emergency operations and operational readiness precludes the ability to charge vehicle batteries consistently. There are periods of emergency operations where all vehicles are in extended use periods on the street making charging time difficult, if not impossible. Additionally, the use of heavy voltage equipment such as onboard computers, emergency light systems, comfort systems, police radio, etc. all have a heavy drain on the battery. There are currently no 100% EV dedicated patrol vehicle platforms available that would address these issues. Several companies have patrol 100% EV platforms in development, but currently there are no 100% EV units that overcome the obstacles mentioned above."

- Currently no electric vehicles specifically designed for police work are available on state bid which is consistent with Deputy Chief's statement.

-Although this document only addresses patrol vehicles at this time, Deputy Chief Hendershot states in the memo that "Other non-patrol PD fleet vehicles are good EV vehicle possibilities when they come up for replacement, i.e. Investigations and Administration vehicles."

- While it is notable that some departments nationwide have modified non-police EVs to use as police vehicles, they are not used as primary patrol vehicles on extended shifts.

- It is for these reasons I move to purchase the hybrid Interceptor which will meet the needs of the department while making progress towards our sustainability goals.

City of Golden Electric Vehicle Decision-Making Matrix

Vehicle Requested	Storm Water vehicle
Requesting Department	Storm Water
Submittal Date	6/26/2023
Fleet Review Date	6/26/2023

Description of Vehicle Use and Essential Functions

Storm water pickup used for hauling material and equipment in storm water system repair and operation

Specifications	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Year	2024	N/A	2024
Manufacturer	Chevrolet	N/A	Chevrolet
Model	Silverado EV	N/A	Silverado 1500
Engine	Electric	N/A	2.7 Turbo GDI
Vehicle Class	2	N/A	2
Standard or Extended Range Battery	N/A	N/A	n/a

Performance	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Horsepower Rating (hp)	660	N/A	310
Tow Capacity (lbs)	8000	N/A	9,000
Payload Capacity (lbs)	1200	N/A	1,900
Acceleration (0-60, seconds) <i>Police only</i>	N/A	N/A	N/A

Fuel Economy	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
EPA Fuel Economy (MPGe or MPG, combined)	67/59MPGe	N/A	17/18MPG
Total Range (mi.)	350	N/A	432
Annual Fuel Cost (fuel or electricity)	N/A	N/A	\$1,827

Energy & Environment	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Annual Petroleum Consumption (barrels)			
Greenhouse Gas Tailpipe Emissions			
Price per ton of carbon for 7 year average life (\$50/ton)			

Price & Replacement	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Purchase Price (\$)	72855	N/A	\$44,117
Source	state bid pricing	N/A	state bid pricing
State Grant Incentive Available (est. \$)	0	N/A	\$0
trade-in estimate	15000	N/A	\$15,000
Net Price	\$57,855	#VALUE!	\$29,117
Leasing option (yes/no)	N/A	N/A	no
Leasing Price (\$)	N/A	N/A	n/a
Leasing Term (yrs)	N/A	N/A	n/a
City of Golden Replacement Schedule (yrs)	10	N/A	10
Estimated lead time for delivery	?	N/A	?
Warranties	3year 36 bumper to bumper 8 year 100k drivetrain	N/A	3year 36 bumper to bumper 8 year 100k drivetrain

**Additional Considerations**

Is there an available existing charger where the vehicle will be stored?

yes	
No	

If not, has a charger been included for installation?

**Fleet comment:**

- This vehicle is not used for large payload or towing operations
- Charging stations are already installed at shops location.
- I believe this will be a perfect candidate for EV replacement.
- It is for these reasons I move to purchase the Silverado EV which will meet the needs of the department.

City of Golden Electric Vehicle Decision-Making Matrix

Vehicle Requested	Tandem axle dump truck
Requesting Department	Utilities department
Submittal Date	9/18/2023
Fleet Review Date	9/18/2023

Description of Vehicle Use and Essential Functions

Class 8 truck chassis used to haul dirt, rock snow and other material. equipped with a specialized rock dumping body. This is a scheduled replacement for 2024.

Specifications	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Year	N/A	N/A	2025
Manufacturer	N/A	N/A	International
Model	N/A	N/A	108SD+ Chassis
Engine	N/A	N/A	Cummins L9, 6 cylinder
Vehicle Class	N/A	N/A	8
Standard or Extended Range Battery	N/A	N/A	n/a

Performance	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Horsepower Rating (hp)		N/A	370HP/1250LB-FT
Tow Capacity (lbs)		N/A	up to 80k if equiped*
Payload Capacity (lbs)		N/A	up to 40k if equiped*
Acceleration (0-60, seconds) <b>Police only</b>		N/A	N/A

Fuel Economy	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
EPA Fuel Economy (MPGe or MPG, combined)	N/A	N/A	N/A*
Total Range (mi.)	N/A	N/A	N/A*
Annual Fuel Cost (fuel or electricity)	N/A	N/A	2728*

Energy & Environment	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Annual Petroleum Consumption (barrels)			
Greenhouse Gas Tailpipe Emissions			
Price per ton of carbon for 7 year average life (\$50/ton)			

Price & Replacement	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Purchase Price (\$)	N/A	N/A	\$207,845
Source	N/A	N/A	State agreement
State Grant Incentive Available (est. \$)	N/A	N/A	\$0
trade-in estimate	N/A	N/A	\$30,000
Net Price	N/A	N/A	\$177,845
Leasing option (yes/no)	N/A	N/A	no
Leasing Price (\$)	N/A	N/A	n/a
Leasing Term (yrs)	N/A	N/A	n/a
City of Golden Replacement Schedule (yrs)	N/A	N/A	10
Estimated lead time for delivery	N/A	N/A	?
Warranties	N/A	N/A	2 year unlimited miles

N/A	N/A
-----	-----

**Additional Considerations**

Is there an available existing charger where the vehicle will be stored?

No
----

If not, has a charger been included for installation?

No	
----	--

**Fleet comment:**

- This vehicle is used for large payload or towing operations
- This vehicle is used to haul snow for downtown and other areas where snow storage after a storm can be challenging.
- Electric chassis suitable for this heavy-duty work are not currently available.
- \*Tow and Payload capacities depend on body configuration.
- \*EPA does not provide fuel economy estimates on vehicles of this size
- \*Range not Calculable
- \*Fuel cost based on current vehicle usage for 2022



City of Golden Electric Vehicle Decision-Making Matrix

Vehicle Requested	Tandem axle plow truck
Requesting Department	Streets department
Submittal Date	9/18/2023
Fleet Review Date	9/18/2023

Description of Vehicle Use and Essential Functions

Class 8 truck chassis used primarily to plow snow during winter. vehicle is equipped with hydraulic plow and spreaders to spread ice melt on road ways . This is a scheduled replacement for 2024.

Specifications	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Year	N/A	N/A	2025
Manufacturer	N/A	N/A	International
Model	N/A	N/A	108SD+ Chassis
Engine	N/A	N/A	Cummins L9, 6 cylinder
Vehicle Class	N/A	N/A	8
Standard or Extended Range Battery	N/A	N/A	n/a

Performance	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Horsepower Rating (hp)		N/A	370HP/1250LB-FT
Tow Capacity (lbs)		N/A	up to 80k if equiped*
Payload Capacity (lbs)		N/A	up to 40k if equiped*
Acceleration (0-60, seconds) <b>Police only</b>		N/A	N/A

Fuel Economy	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
EPA Fuel Economy (MPGe or MPG, combined)	N/A	N/A	N/A*
Total Range (mi.)	N/A	N/A	N/A*
Annual Fuel Cost (fuel or electricity)	N/A	N/A	2728*

Energy & Environment	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Annual Petroleum Consumption (barrels)			
Greenhouse Gas Tailpipe Emissions			
Price per ton of carbon for 7 year average life (\$50/ton)			

Price & Replacement	Electric Vehicle	Hybrid Vehicle	Gasoline Vehicle
Purchase Price (\$)	N/A	N/A	\$207,845
Source	N/A	N/A	State agreement
State Grant Incentive Available (est. \$)	N/A	N/A	\$0
trade-in estimate	N/A	N/A	\$30,000
Net Price	N/A	N/A	\$177,845
Leasing option (yes/no)	N/A	N/A	no
Leasing Price (\$)	N/A	N/A	n/a
Leasing Term (yrs)	N/A	N/A	n/a
City of Golden Replacement Schedule (yrs)	N/A	N/A	10
Estimated lead time for delivery	N/A	N/A	?
Warranties	N/A	N/A	2 year unlimited miles

N/A	N/A
-----	-----

**Additional Considerations**

Is there an available existing charger where the vehicle will be stored?

No

If not, has a charger been included for installation?

No

**Fleet comment:**

- This vehicle is used for large payload or towing operations
- This vehicle is used for snow removal operations and to spread ice melter on the road ways.
- Electric chassis suitable for this heavy-duty work are not currently available.
- \*Tow and Payload capacities dependant on body configuration.
- \*EPA does not provide fuel economy estimates on vehicles of this size
- \*Range not Calculable
- \*Fuel cost based on current vehicle usage for 2022