

PROJECT SUMMARY

Applicant: City of Placerville Police Department

Contact Person: Joe Wren, Commander

Address: 730 Main Street, Placerville, Ca. 95667

Telephone: (530)642-5210

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Email: jwren@cityofplacerville.org

Project Description:

This project will provide zero-emissions motorcycles to assist Placerville Police Department in patrolling the El Dorado Trail, conducting traffic enforcement operations and other special events throughout the city.

These zero-emission will replace two (2) Cushman gas powered traffic vehicles and reduce the use of the police department’s full size Harley Davidson motorcycle, placing it in a reserve/limited use capacity. These electric motorcycles will reduce our tail-pipe emissions and because of their smaller footprint, they will generate less dust, further reducing airborne emissions.

These Zero Motorcycles will also be used in lieu of police vehicles (sedans/SUV’s) during parades, escorting the Wagon Train through the city and any other special event where a police vehicle would be utilized.

The Zero DS ZF13.0 motorcycles with the Law Enforcement package provides several benefits to the community of Placerville and surrounding areas. In addition to the electric motorcycles being zero emissions, they also are silent, which will not only assist with Law Enforcement related activities, but also enhance the quiet atmosphere of the city and its surrounding recreational activities. These zero emission motorcycles will also reduce the noise nuisance for trail users, nearby residents and anyone visiting our community. The Law Enforcement package includes factory equipped emergency equipment, which allows for immediate use once they are received.

Estimated Emission Reductions/Cost-Effectiveness	
Useful Life of Project (years)	10
Total Lifetime Emissions Reduced (lbs. of ROG, NOx, PM-10)	60
Cost-Effectiveness (total project costs)*	\$553.63 per lb.
Cost-Effectiveness (AQMD Funded project costs)*	\$442.91 per lb.

* See Attachment 3 for instructions

Budget Summary	AB 2766 Funds	Matching Funds	In-Kind Match	Total Project Costs
Materials	\$32,000	\$8000 (20%)	\$	\$40,000
Personnel	\$	\$	\$	\$
Other	\$	\$	\$	\$
TOTAL	\$32,000	\$8000	\$	\$40,000

BUDGET ITEMIZATION

Expand Table as necessary to itemize all expenditures

Line Item	Title/Classification	No. Of Hours	Salary Rate	Benefit %	Total	Total Costs
	Contracts (removal, transportation, disposal)					
	Materials & Supplies				\$20,000 per motorcycle x motorcycles	\$40,000
	Equipment Rental					
	Other Costs					

PROJECT GRAND TOTAL: \$ _____ 40,000

CONTENTS CHECKLIST

Applicant: Placerville Police Department

- | | | |
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| <input type="checkbox"/> | 2 Copies of Proposal – page | <u>ENCLOSED</u> |
| <input type="checkbox"/> | Attachments | <u>10-12</u> |

Project Description

This project will provide zero-emission motorcycles to assist the Placerville Police Department patrol the El Dorado Trail, conduct traffic enforcement operations and for use during special events, including the annual El Dorado County Fair, community events and any other occasions where mobility in and around large crowds is necessary.

Zero motorcycles produce no tailpipe emissions, create virtually no noise pollution, and require none of the consumables like fuel, oil, or coolant used by internal combustion engines. Unlike gas motorcycles that require about four times more energy, the Z-Force® motor in the Zero motorcycle is over 90% efficient. Valuable energy is used to move the motorcycle, rather than being lost as wasted heat.

Electric motorcycles also have the capacity to be powered entirely by renewable resources. As the energy grid becomes greener, so does a Zero motorcycle. Over 40 studies have concluded that usage of plug-in electric vehicles would reduce carbon emissions in 49 US states, including those that are most heavily dependent on coal.

In addition to the substantial reduction in tail-pipe emission, these motorcycles have a smaller footprint, thus producing less dust, which will reduce airborne emission. With no gears, clutch, or noise, officers can focus on patrolling. They can perform highly technical maneuvers during intense situations where performance and agility are essential. While in crowds or indoors, the absence of exhaust eliminates ventilation concerns and opens up new, or improves current, patrolling scenarios, including:

- Patrolling and investigating public lands: parks, beaches, dirt trails, running paths
- Event safety and crowd control: concerts, parades, sporting events
- General city patrols: dense pedestrian areas, city streets, local emergency calls
- Stealth patrols: drug enforcement, burglary, security, campus environments, other situations where silence is an advantage

The Zero DS ZF13.0 motorcycles with the Law Enforcement package will provide tangible benefits to the City of Placerville and surrounding community immediately upon receiving them. Besides being zero emission, these electric motorcycles are almost completely silent, which will be beneficial to Law Enforcement operations. The tactical advantages of these motorcycles are numerous, but to list a few they are able to accelerate instantly from a silent idle and they are extremely lightweight for greater maneuverability. They silently idle while among crowds preserving the welcoming atmosphere of our Main Street events. An officer can ride indoors or in close confines without harmful emissions.

The alternative, a gas powered motorcycle presents several risks that the Zero Motorcycles do not. Some of these risks are:

- Increased noise and exhaust disturbances
- Gas and oil spills
- Burn and fire risks

With the addition of these zero-emission motorcycles, we hope to further promote green technology and improve the environmental credentials of local authorities, while serving our community. The Placerville Police Department current has one (1) Zero Motorcycle and the feedback from the community has been nothing but positive. Officers using this one Zero are always met with intrigue from residents and visitor alike, inquiring into the technology used. Showing off this zero emission vehicle allows our officers to connect with the community and act as ambassadors to living a greener lifestyle.

Project Organization

This project will be administered by the Placerville Police Department.

Project Background

The City of Placerville is a vibrant community, with many outdoor activities and community events. The Main Street area is shut down at least eight times during the year for special events, which draw in thousands of visitors. The City also boasts a robust park and trail system that is enjoyed year round by our community members and visitors alike.

In addition to these uses, the City also has undeveloped lands within its jurisdiction. Many of these areas have been impacted by illegal transient activity. The greatest concern is the fire danger associated with these illegal transient camps. The Zero motorcycles will allow officers to access these off road trails to further suppress this illegal activity.

Emission Benefits/Cost Effectiveness

The emissions benefits are calculated on 3,500 miles per year for a total of 7000 miles. Since this would be a new program, we do not have historical data to reference. The estimated miles are based on the number of events per year and the total length of the El Dorado Trail as it traverses through the City of Placerville. In addition, due to its proximity to the City of Placerville and the sphere of influence, our officers periodically patrol the EDC Trail out into the county area as well.

In the automated calculations, a standard on road light duty vehicle was selected as the base emissions comparison.

Please reference page 8 for a calculation summary sheets from CARB automated method access database.

Work Statement

Task #1: Project initiation	Date	Completed
1.1 Execute Agreement with Air Quality Management District	August 2018	<input type="checkbox"/>
1.2 Purchase Vehicle	November 2018	<input type="checkbox"/>

Deliverables: Execute Agreement with AQMD

Acknowledgement

A placard acknowledging AB 2766 funding from EDC AQMD will be displayed in a conspicuous location on each motorcycle. The Placerville Police Department will work in conjunction with EDC AQMD prior to selection of design to be placed on the motorcycles.

Cost Estimation Breakdown

The City of Placerville Police Department requests \$32,000 in AB 2766 funds, with 20% of the total project cost as local match:

2018	AB 2766	Local Match	In-Kind	Cost
Personnel	0	0	0	0
Contract	0	0	0	0
Materials	\$32,000	\$8000	0	\$40,000
Construction	0	0	0	0
Total	\$32,000	\$8000	0	\$40,000

Matching Funds

The matching funds will come from general funds.

Schedule of Deliverables/Monitoring Program

Upon contract award, Placerville Police Department will initiate procurement of the zero-emission motorcycles requested within 30-days. Once the motorcycles have been procured and the Police Department has taken possession of them, they will be put into service within 15-days.

In order to comply with the quarterly monitoring requirements, Placerville Police Department will prepare quarterly monitoring reports detailing the mileage ridden and calculate the emissions benefits.

ON-ROAD PROJECTS

Subcategory: (1d) Electric Vehicle Purchases

Air District Name: El Dorado County APCD
Local Government Name: Not Applicable
Project Name: Zero Motorcycle Patrol

Description: This project will provide zero-emission motorcycles to the Placerville Police Department to patrol the El Dorado Trail, special events, traffic enforcement duties, EDC Fair and any other situation where a patrol motorcycle will assist in public safety.
(Issues/Comments)

Implementing Agency: Placerville Police

Private Agency: No

FUNDING:

MVFees Funding: \$32,000
MSRC Funding: \$0
Moyer Funding: \$0
CMAQ Funding: \$0
Other COFunding: \$8000
Capital Recovery Factor: 0.12
Project Analysis Period: 10 years
Vehicle Miles Traveled (VMY): 7,000 annual miles

EMISSION FACTORS:

Baseline Vehicle Emission Factors		Cleaner Vehicle Emission Factors	
ROG:	0.15 grams per mile	0.00	grams per mile
NOx:	0.17	0.00	
PM10:	0.09	0.00	

EMISSION REDUCTIONS:

	Pounds per Year	Tons per Year
ROG:	2	0.00
NOx:	3	0.00
PM10:	1	0.00
Total:	<u>6</u>	<u>0.00</u>

COST-EFFECTIVENESS OF:

Motor Vehicle Fees and/or Moyer Funds: \$442.91 per pound \$885,820 per ton
CMAQ Funds: \$0.00 per pound \$0 per ton
All Funding Sources: \$553.63 per pound \$1,107,260 per ton



**City of
Placerville**

Joseph Wren <jwren@cityofplacerville.org>

2018 AB 2766 Funding

Fri, Nov 17, 2017 at 11:24 AM

Cleve Morris <cmorris@cityofplacerville.org>

To: Joseph Wren <jwren@cityofplacerville.org>

Cc: James Ortega <jortega@cityofplacerville.org>

Joe: Go for it. I am not aware of anyone else applying. The only thing I am aware of is a PZEV vehicle we got a few years ago. Also, I wanted to get you information on a federal grant program I was made aware of that provides funding for electric vehicles. Apparently there is quite a bit of funding available.

Cleve

Cleve Morris

City Manager

City of Placerville

cmorris@cityofplacerville.org

www.cityofplacerville.org

530-642-5200

[Quoted text hidden]

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ZERO POLICE

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AUTHORITY

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SELECT MODEL

ZERO DSRP

ZERO FXP

RANGE

	ZERO DSRP ZF14.4	ZERO DSRP ZF14.4 +POWER TANK
City [?]	157 miles (253 km)	196 miles (315 km)
Highway, 55 mph (89 km/h) [?]	88 miles (142 km)	110 miles (177 km)
» Combined [?]	112 miles (180 km)	141 miles (227 km)
Highway, 70 mph (113 km/h) [?]	64 miles (103 km)	80 miles (129 km)
» Combined [?]	91 miles (146 km)	114 miles (183 km)

MOTOR

Peak torque	116 ft-lb (157 Nm)	116 ft-lb (157 Nm)
Peak power [?]	70 hp (52 kW) @ 3,500 rpm	70 hp (52 kW) @ 3,500 rpm
Top speed (max) [?]	102 mph (164 km/h)	102 mph (164 km/h)
Top speed (sustained) [?]	90 mph (145 km/h)	90 mph (145 km/h)
Type	Z-Force® 75-7R passively air-cooled, high efficiency, radial flux, interior permanent hi-temp magnet, brushless motor	Z-Force® 75-7R passively air-cooled, high efficiency, radial flux, interior permanent hi-temp magnet, brushless motor
Controller [?]	High efficiency, 775 amp, 3-phase brushless controller with regenerative deceleration	High efficiency, 775 amp, 3-phase brushless controller with regenerative deceleration

POWER SYSTEM

Power pack	Z-Force® Li-Ion intelligent integrated	Z-Force® Li-Ion intelligent integrated
Max capacity [?]	14.4 kWh	18.0 kWh
Nominal capacity [?]	12.6 kWh	15.8 kWh

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Charger type	1.3 kW, integrated	1.3 kW, integrated
Charge time (standard)	9.8 hours (100% charged) / 9.3 hours (95% charged)	12.1 hours (100% charged) / 11.6 hours (95% charged)
» With Charge Tank option	2.5 hours (100% charged) / 2.0 hours (95% charged)	N/A
» With one accessory charger	5.7 hours (100% charged) / 5.2 hours (95% charged)	7.0 hours (100% charged) / 6.5 hours (95% charged)
» With max accessory chargers	2.8 hours (100% charged) / 2.3 hours (95% charged)	3.3 hours (100% charged) / 2.8 hours (95% charged)
Input	Standard 110 V or 220 V	Standard 110 V or 220 V

DRIVETRAIN

Transmission	Clutchless direct drive	Clutchless direct drive
Final drive	90T / 20T, Poly Chain® HTD® Carbon™ belt	90T / 20T, Poly Chain® HTD® Carbon™ belt

CHASSIS / SUSPENSION / BRAKES

Front suspension	Showa 41 mm inverted cartridge forks, with adjustable spring preload, compression and rebound damping	Showa 41 mm inverted cartridge forks, with adjustable spring preload, compression and rebound damping
Rear suspension	Showa 40 mm piston, piggy-back reservoir shock with adjustable spring preload, compression and rebound damping	Showa 40 mm piston, piggy-back reservoir shock with adjustable spring preload, compression and rebound damping
Front suspension travel	7.00 in (178 mm)	7.00 in (178 mm)
Rear suspension travel	7.03 in (179 mm)	7.03 in (179 mm)
Front brakes	Bosch Gen 9 ABS, J-Juan asymmetric dual piston floating caliper, 320 x 5 mm disc	Bosch Gen 9 ABS, J-Juan asymmetric dual piston floating caliper, 320 x 5 mm disc
Rear brakes	Bosch Gen 9 ABS, J-Juan single piston floating caliper, 240 x 4.5 mm disc	Bosch Gen 9 ABS, J-Juan single piston floating caliper, 240 x 4.5 mm disc
Front tire	Pirelli MT-60 100/90-19	Pirelli MT-60 100/90-19
Rear tire	Pirelli MT-60 130/80-17	Pirelli MT-60 130/80-17
Front wheel	2.50 x 19	2.50 x 19
Rear wheel	3.50 x 17	3.50 x 17

DIMENSIONS

Wheelbase	56.2 in (1,427 mm)	56.2 in (1,427 mm)
Seat height	33.2 in (843 mm)	33.2 in (843 mm)
Rake	26.5°	26.5°
Trail	4.6 in (117 mm)	4.6 in (117 mm)

WEIGHT

Curb weight	443 lb (201 kg)	487 lb (221 kg)
Carrying capacity	332 lb (151 kg)	288 lb (131 kg)

ECONOMY

Equivalent fuel economy (city)	419 MPGe (0.56 l/100 km)	419 MPGe (0.56 l/100 km)
Equivalent fuel economy (highway)	172 MPGe (1.37 l/100 km)	172 MPGe (1.37 l/100 km)
Typical cost to recharge	\$1.61	\$2.02

Specifications are subject to change without notice. Imagery may not reflect most current product specifications. Zero Motorcycles reserves the right to make improvements and/or design changes without any obligation to previously sold, assembled or fabricated equipment.

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