1) **Vehicle(s) to Mount Slip-On Tankers on** (if requesting multiple slip-on tankers provide information for each vehicle that a requested slip-on tanker will be mounted to). Example, if requesting funds to purchase three slip-on tankers provide information for three vehicles)

   Vehicle 1

   Make:

   Model:

   Year:

   VIN:

   Gross Vehicle Weight Rating (GVWR)

   Vehicle Curb Weight***

   Available Payload (GVWR – Vehicle Curb Weight)

   Slip-On Unit Dry Weight

   Slip-On Unit Wet Weight

   Estimated Weight of Equipment and Personnel****

   Total Fire Ready Weight of the Vehicle (Vehicle Curb Weight + Slip-On Unit Wet Weight + Equipment & Personnel)

   ******Vehicle Curb Weight can be obtained from the manufacturer or by providing a scale receipt***

   *******If unknown, allow for approximately 1,000 pounds***

   Utility Terrain Vehicles (UTV) are allowable so long as the minimum requirement specifications are met. A UTV is defined as a motorized off-highway vehicle (OHV) traveling on four or more low-pressure tires, with side-by-side seating, a steering wheel, seatbelts, and a rollover protection system (ROPS). The same vehicle information required above for all vehicles is also required for UTVs

   A UTV may not be loaded in excess of the manufacturer's recommended maximum weight at any location on the machine including the cargo rack(s). The maximum gross vehicle weight shall not be exceeded. The manufacturer’s loading instructions must be followed. All tools or equipment transported on an OHV shall be secured.

Attachment 1- Slip-on Firefighting Unit- Minimum Specifications

The following specifications are for a complete slip-on firefighting unit to be mounted in any vehicle except vehicles specifically defined as UTV's. Each unit requested shall have a specifications sheet included that clearly indicates compliance with all of the requirements.

The entire slip-on unit, including water tank, shall be mounted on a platform that can accommodate forklift blades or has integral lifting points to allow the unit to be removed from the host chassis. The fully loaded weight of the completed unit shall not exceed the gross vehicle weight rating (GVWR) of the host chassis.

All tubing shall use metal fittings, rated to 500 pounds per square inch and requiring no special tools. No underside nuts or bolts shall be used. Non-slit corrugated loom shall cover all water lines.

The electrical function of the slip-on unit shall be wired to operate only when the master switch is ON.

Pump Motor

-The pump shall be driven by a four-cycle gasoline or diesel powered auxiliary air-cooled 4-cycle California Air Resources Board (CARB) compliant electric start engine with backup recoil starter, fixed mounted on the rear and integrated on the slip-on unit.
-The pump motor exhaust shall include a US Forest Service (USFS) qualified spark arrestor.
-The pump motor shall include a fuel tank with a two-gallon (minimum) capacity.
-The pump unit shall be equipped with a low-pressure shutdown switch set at manufacturer's recommended safe pressure.
-The pump motor shall be equipped with low oil protection.
-All serviceable items such as air filters, oil filters, drains, and fuel pumps shall be accessible for routine maintenance.
-There shall be custom fabricated tread plate safety shield(s) to prevent damage or injury if the potential exists for loose clothing, hands, or foreign objects to enter any other moving parts of the auxiliary pump.

Pump - The pump shall be capable of delivering the minimum performance requirements from the tank, and at a 5-foot lift through 24 feet of 1 ½-inch suction hose and a suction strainer. The pump shall be capable of achieving the same minimum performance criteria when water supply is from the water tank through the tank to the pump valve.

Pump Certification- The pump, when dry, shall be capable of taking suction and discharging water in compliance with National Fire Protection Association (NFP A) 1900 (previously 1906). The pump shall be tested at the manufacturer's facility. The conditions of the pump test shall occur as outlined and in accordance with current NFP A 1901 (previously 1906).

The pump shall deliver the percentage of rated capacities at pressures indicated: 100% of rated capacities at 150 PSI (lO00KPA) net pump pressure.

The pump manufacturer shall certify that the pump can deliver the following minimum capacities as measured at the pump head:
50 GPM at 100 psi net pump pressure
30 GPM at 150 psi net pump pressure
200 psi shutoff pressure

The pump shall have a self-adjusting mechanical pump seal.

Foam System- Optional selection by ordering entity.

Plumbing- All plumbing components shall be fabricated from stainless steel or brass and high pressure, flexible hose where appropriate. All plumbing components shall be designed to allow easy disassembly of components for repairs and maintenance. Full-flow quarter turn ball valves shall be used throughout. All visible quarter turn ball valves shall be in the closed position when the valve handle is perpendicular to the run of the pipe and in the open position when the handle is parallel to the run of the pipe. Any blind valves shall be labeled "open" and "closed." All controls shall be accessible from the ground without climbing onto the utility, platform, or pickup bed.

Valve labeling - Each valve shall be labeled as to its function immediately adjacent to the valve control. The valves shall be labeled in accordance with the US Forest Service valve numbering system in common use with off-road firefighting agencies. A placard with an identification key shall be affixed at the rear of the unit.

-Suction Side-

- A manual hand diaphragm primer. The primer shall be equipped with an internal or external check valve. The primer valve shall be labeled #6. The primer shall develop 17 inches of HG vacuum, prime and pump water from a 10-foot lift in 30 seconds (maximum)and pump water from a 17-foot lift.
- Overboard Suction supply through a minimum 2-inch NH Valve (labeled #8).
- A Y strainer shall be installed prior to the pump to strain water from both overboard suction and tank. The strainer shall have a screw-off cap to allow access and easy cleaning of the filter element in the field.
- Tank to Pump line shall be 2-inch (minimum) with valve labeled #1.
- Two (2), eight-foot sections of not collapsible, clear PVC suction hose with appropriate female fittings to attach to Overboard suction and male fittings to attach to foot valve.

- One (1), foot valve barrel strainer with appropriated fitting to attach to the suction hose.

-Discharge Side-

- The pump to tank line shall be 1- inch (minimum). The pump to tank line shall include a check valve prior to a quarter turn shut off (labeled #2). A ¼-inch pump cooler line shall be installed and plumbed around the pump to tank valve and into the tank fill tower. The cooler line shall include a shut off valve (labeled #17).
- One (1) 1.5-inch NH rear discharge valve (labeled #3) with cap and aircraft cable retainer shall be installed.
- One (1) booster hose reel with 1-inch net positive suction head (NPSH) outlet, and capacity for 100 feet of 1-inch inside diameter hardline, shall be provided and mounted on the unit. The reel shall be installed in a fashion that allows unobstructed hose deployment on both the driver and passenger side of the vehicle. Outriggers, spools and roller assemblies shall be installed on both sides of the reel (driver and passenger sides). A one inch (minimum) flexible line shall be plumbed from the discharge pluming manifold to the hose reel, the line shall be equipped with quarter turn shut off valve (labeled #4) to turn off water supply in the event the supply line or hose on the reel is damaged. The water supply inlet shall be equipped with a 90-degree swivel joint. The reel shall be provided with a 12- volt electric rewind and brake.
- One (1) Integrated storage for 200 feet of 1-inch synthetic hose, and the compartment or tray shall allow the hose to be pre-connected to the #3 discharge.
- A check valve(s) shall be installed on each discharge.
- A placard shall be installed on the slip-on unit with pump operation instructions.

-Winterization-

- The pump shall have a drain (labeled # 11) at the bottom of the volute that will fully drain the pump.
- All plumbing shall be capable of being drained for winterization by opening all valves.
- The tank shall be capable of being drained with gravity (through the tank to pump and suction valves) or retaining the tank water when the plumbing is drained.
- A placard shall be installed on the slip-on unit with instructions for proper winterization.

Printed Materials for the Pump-

- One set of printed operation, service, and parts manuals shall be provided. Each manual shall be presented with a table of contents. Manuals shall contain the following:

- Operating instructions, descriptions, specifications, and ratings for the chassis, installed components, and auxiliary systems.
- Warnings and cautions pertaining to the operation and maintenance of the fire apparatus and firefighting systems.
- Charts, tables, checklists, and illustrations relating to lubrication, cleaning, troubleshooting, diagnostics, and inspections.
- Instructions regarding the frequency and procedure for recommended maintenance. Maintenance instructions for the repair and replacement of installed components.
- Parts listing with descriptions and illustrations for identification.

Controls/Gauges/Lights-

Any connection to the chassis shall provide easy access to simplify connecting and disconnecting and accommodate removal of the unit. All units shall be equipped with the following in an easily accessible location:

- Liquid filled 2.5-inch (minimum) freeze protected 0-300 psi pressure gauge.
- Hour meter.
- Ignition start/stop switch,
- Throttle control,
- Choke, low pressure shut down switch, and
- Primer controls.
- The plumbing area and controls shall be equipped with weatherproof lighting.

Water Tank-

Water Tank design will maximize water carrying capability while limiting negative effect on chassis center of gravity and stability. Additionally, the water tank shall adhere to the following criteria:

- The water tank shall be constructed from ½ (minimum) Polypropylene and have a capacity minimum capacity of 100 Gallons. This material shall be non-corrosive stress relieved thermoplastic, be black in color and U.V. stabilized for maximum protection.
- The tank assembly shall be provided with provisions for securely attaching to the slip-on unit with accessible hardware for removal.
- The tank shall be designed to be removable from the platform structure for maintenance or replacement.
- All exposed edges on the tank and fill tower shall be rounded. The tank shall have a manual fill tower (labeled WA 1ER) with debris strainer, located on the top at the rear. The fill tower shall have a cap. The fill tower shall be constructed of same material as

the rest of the tank and shall have a minimum dimension of 6 inches by 6 inches or 6 inch diameter outer perimeter. The water tank shall be vented.

- The tank construction shall meet all baffling requirements of NFP A 1900 (previously NFP A 1906), latest edition.
- The tank shall be equipped with an internal piping that terminates ½ inches from the bottom of a sump. The sump shall have an outlet on the bottom for cleanout and draining.
- The tank shall be equipped with an anti-cavitation device.
- The Tank shall be equipped with a sight gauge to view the level of water.

Electrical System-

- 1 - Qwik-connector (or equivalent) for the 12volt battery to slip-on unit connection. 4' of 4-gauge (red) and 4' of 4 - gauge (black) battery cables along with male and female connectors are supplied by the manufacturer.

Slip-On Unit Warranties-

- The slip-on unit manufacturer shall be responsible for the costs of repairs to the apparatus that have been caused by defective workmanship or materials for a reasonable period following the receipt of the unit.

Slip-on Firefighting Unit- Minimum Specifications Specifically for UTVs

The following specifications are for a complete slip-on firefighting unit to be mounted in any UTV. Each unit requested shall have a specifications sheet included that clearly indicates compliance with all of the requirements.

The entire slip-on unit, including water tank, shall be mounted on a platform that can accommodate forklift blades or has integral lifting points to allow the unit to be removed from the host chassis. The fully loaded weight of the completed unit shall not exceed the gross vehicle weight rating (GVWR) of the host chassis.

All tubing shall use metal fittings, rated to 500 pounds per square inch and requiring no special tools. No underside nuts or bolts shall be used. Non-slit corrugated loom shall cover all water lines.

The electrical function of the slip-on unit shall be wired to operate only when the master switch is ON.

Pump Motor

-The pump shall be driven by a four-cycle gasoline or diesel-powered auxiliary air-cooled 4-cycle California Air Resources Board (CARB) compliant electric start engine with backup recoil starter, fixed mounted on the rear and integrated on the slip-on unit.
-The pump motor exhaust shall include a US Forest Service (USFS) qualified spark arrestor.
-The pump motor shall include a fuel tank with a two-gallon (minimum) capacity.
-The pump unit shall be equipped with a low-pressure shutdown switch set at manufacturer's recommended safe pressure.
-The pump motor shall be equipped with low oil protection.
-All serviceable items such as air filters, oil filters, drains, and fuel pumps shall be accessible for routine maintenance.
-There shall be custom fabricated tread plate safety shield(s) to prevent damage or injury if the potential exists for loose clothing, hands, or foreign objects to enter any other moving parts of the auxiliary pump.

Pump - The pump shall be capable of delivering the minimum performance requirements from the tank, and at a 5-foot lift through 24 feet of 1 ½-inch suction hose and a suction strainer. The pump shall be capable of achieving the same minimum performance criteria when water supply is from the water tank through the tank to the pump valve.

Pump Certification- The pump, when dry, shall be capable of taking suction and discharging water in compliance with National Fire Protection Association (NFP A) 1900 (previously 1906). The pump shall be tested at the manufacturer's facility. The conditions of the pump test shall occur as outlined and in accordance with current NFP A 1901 (previously 1906).

The pump shall deliver the percentage of rated capacities at pressures indicated: 100% of rated capacities at 150 PSI (lO00KPA) net pump pressure.

The pump manufacturer shall certify that the pump can deliver the following minimum capacities as measured at the pump head:
50 GPM at 100 psi net pump pressure
30 GPM at 150 psi net pump pressure
200 psi shutoff pressure

The pump shall have a self-adjusting mechanical pump seal.

Foam System- Optional selection by ordering entity.

Plumbing- All plumbing components shall be fabricated from stainless steel or brass and high pressure, flexible hose where appropriate. All plumbing components shall be designed to allow easy disassembly of components for repairs and maintenance. Full-flow quarter turn ball valves shall be used throughout. All visible quarter turn ball valves shall be in the closed position when the valve handle is perpendicular to the run of the pipe and in the open position when the handle is parallel to the run of the pipe. Any blind valves shall be labeled "open" and "closed." All controls shall be accessible from the ground without climbing onto the utility, platform, or pickup bed.

Valve labeling - Each valve shall be labeled as to its function immediately adjacent to the valve control. The valves shall be labeled in accordance with the US Forest Service valve numbering system in common use with off-road firefighting agencies. A placard with an identification key shall be affixed at the rear of the unit.

-Suction Side-

- A manual hand diaphragm primer. The primer shall be equipped with an internal or external check valve.
- Overboard Suction supply (labeled #8).
- A Y strainer shall be installed prior to the pump to strain water from both overboard suction and tank. The strainer shall have a screw-off cap to allow access and easy cleaning of the filter element in the field.
- Tank to Pump line with valve labeled #1.
- Two (2), eight-foot sections of not collapsible, clear PVC suction hose with appropriate female fittings to attach to Overboard suction and male fittings to attach to foot valve.

- One (1), foot valve barrel strainer with appropriated fitting to attach to the suction hose.

-Discharge Side-

- The pump to tank line shall include a check valve prior to a quarter turn shut off (labeled #2). A pump cooler line shall be installed and plumbed around the pump to tank valve and into the tank fill tower. The cooler line shall include a shut off valve (labeled #17).
- One (1) 1.5-inch NH rear discharge valve (labeled #3) with cap and aircraft cable retainer shall be installed.
- One (1) booster hose reel shall be provided and mounted on the unit. The reel shall be installed in a fashion that allows unobstructed hose deployment on both the driver and passenger side of the vehicle. Outriggers, spools and roller assemblies shall be installed on both sides of the reel (driver and passenger sides). A flexible line shall be plumbed from the discharge pluming manifold to the hose reel, the line shall be equipped with quarter turn shut off valve (labeled #4) to turn off water supply in the event the supply line or hose on the reel is damaged. The reel shall be provided with a 12- volt electric rewind and brake.
- A check valve(s) shall be installed on each discharge.
- A placard shall be installed on the slip-on unit with pump operation instructions.

-Winterization-

- The pump shall have a drain (labeled # 11) at the bottom of the volute that will fully drain the pump.
- All plumbing shall be capable of being drained for winterization by opening all valves.
- The tank shall be capable of being drained with gravity (through the tank to pump and suction valves) or retaining the tank water when the plumbing is drained.
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- The tank shall be equipped with an internal piping that terminates ½ inches from the bottom of a sump. The sump shall have an outlet on the bottom for cleanout and draining.
- The tank shall be equipped with an anti-cavitation device.

- The Tank shall be equipped with a sight gauge to view the level of water.

Electrical System-

- 1 - Qwik-connector (or equivalent) for the 12volt battery to slip-on unit connection. 4-gauge (red) and 4 - gauge (black) battery cables along with male and female connectors are supplied by the manufacturer.

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