



October 7, 2022

City of West Allis
ATTN Bret Wollenzien
6300 West McGeough Ave
West Allis, WI 53219

Hello, Bret:

Thank you for the opportunity to provide you a quotation on a new, unused MCV. This pricing is based on our current price list, includes your specific Toolcat chassis requests with options, and the listed cleaning system options from the current Triverus MCV price list.

Base Unit (See attached detailed specification)

Options (Toolcat) (see attached detailed specification)

- Deluxe Road Package**
- High flow hydraulics package**
- 29 x 10.5 Trac Tires**
- Heavy Duty Battery**
- Attachment Control**
- Power Bob-tach hitch**
- Radio Option**
- Traction Control**
- Interior Trim**
- Rear camera kit, (lower) frame mounted**

Base MCV Cleaning System & Rear Module (see attached detailed Specification)

Options (MCV) (see attached detailed Specification)

- Top cab mounted flashing strobe (84 inches overall height)**
- Walkaway remote cleaning unit with recovery with 25 ft umbilical connections, and carrying rack**
- High intensity LED work Lighting package (exact configuration TBD)**

Chassis cab soundproofing upgrade kit, installed

Start-up kit (includes): two (2) sacrificial front deck caster plates; Two (2) swivels; Two (2) swivel seal kits; Four (4) spare spray bars; Eight (8) 15-degree spray nozzles; Eight (8) 0-degree spray nozzles; One (1) swivel break-in spray bar with nozzles; Two (2) Primary mesh strainers; Two (2) Final mesh strainers; Eight (8) 200 series manifold gaskets; Four (4) 100 series manifold gaskets.

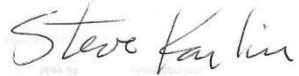
Unit Total, excluding taxes, if any:	\$220,601.95
Freight, FOB West Allis	<u>\$ 13,530.00</u>
Grand Total	\$234,131.95

These prices include 1 set paper manuals, basic operator and maintenance training at your location at the beginning of your cleaning season, and 12-month warranty. See attached warranty statements.

Availability: approximately 180 days after receipt of purchase order.

Thank you, Bret. Please review the other attachments and the quotation above. If you have any question, please feel free to contact me at your convenience.

Best Regards,

A handwritten signature in cursive script that reads "Steve Karlin".

Triverus LLC
Steve Karlin
Marketing Director
661 East Steel Loop
Palmer, AK 99645

ENVIRONMENTAL MOBILE CLEANING SYSTEM MINIMUM REQUIREMENTS

The desired machine shall be designed for wide usage for cleaning hard surfaces, including porous asphalt pavement and permeable concrete. It shall include a mobile chassis carrier with a mounted, but removable, surface cleaning system based on clean water only, a reservoir, high pressure water spray, vacuum recovery, and contaminant containment in the recovery reservoir. The mobile chassis carrier shall allow for routine transportation of recovered waste and hygienic disposal of recovered contaminants according to local conditions. The cleaning system shall be removable within a reasonable time to allow usage of the carrier for other purposes on an as-needed basis.

(Standard equipment listed in BLACK FONT below. Optional equipment listed in RED FONT.)

CLEANING SYSTEM CHASSIS:

See original Toolcat description, included

- Additional cab sound proofing for additional operator protection required within the cab lining

REQUIRED CLEANING SYSTEM

- Cleaning module shall be mounted to rear lift hydraulic cylinders which shall have the capacity to lift the module for maintenance access in any allowable operational condition.
- Rear module shall be equipped with lifting eyes at each corner to enable easy removal of module from the chassis.
- Independent Electronic control system shall be provided to control cleaning system separate from chassis system.
- Amber strobe required on top of vehicle with on/off rocker switch in cab
- High intensity LED work Lighting package to include:
 - Exact configuration TBD
- Quick disconnect hose and electrical connections between rear module and cleaning platform required with provisions to release internal system pressure for attach/detach.
- 200-gallon clean water capacity reservoir and separate 200-gallon capacity recovery tank.
- Fill level indicator and automatic pressure relief valve required on clean water tank.
- Minimum two (2) 2-inch camlock fill connections with caps on clean water reservoir, one each side, equipped with check valves.
- Minimum one (1) valved clean water reservoir drain.
- Minimum one (1) 2-inch camlock pump-out connection with cap on recovery tank.
- Pressure discharge required for decant at up to 50 gpm from recovery tank.

- Fill level indicator required for clean water tank.
- Recovery tank sensor to shut off vacuum recovery when tank is full.
- Clean water pre-screen between water tank and water transfer pump.
- Low pressure pump at outlet of clean water tank to prime high-pressure water pump through a required water filtration system that meets or exceeds high pressure pump filtration requirements.
- Low point drains required.
- Safety shut off for high-pressure pump in the event of low priming pressure at pump inlet.
- Valved gravity drain required on recovery tank.
- Internal spray washdown system required inside recovery tank.
- High pressure water pump shall have minimum rated capacity of 8.5 gpm @ 3800 psi.
- High pressure unloader valve required, returning water to clean water reservoir.
- High pressure water pressure readout required in cab.
- Both high pressure water pump and vacuum recovery fan shall be driven hydraulically by the chassis hydrostatic pump system.
- A hydraulic flow divider system shall be provided to assure optimum wash and recovery operations.
- Water path shall include all stainless-steel fittings on high pressure water hoses.
- Front cleaning platform mounted to front lift arms shall provide a minimum cleaning path 60-inch-wide cleaning path.
- Front platform shall include a left/right oscillation feature to allow tracking of hard surface to be cleaned (swivel-tach) independent of chassis horizontal position.
- A selector valve shall allow water from cleaning platform to be diverted to a hand wand with 50-ft hose reel mounted on top of cleaning deck.
- Minimum clearance of 1.5 inches between rotating cleaning parts and the ground.
- Cleaning platform to be kept out of contact with hard surface by four swiveling casters, one at each corner.
- Cleaning platform shall be designed with a minimum of eight (8) spray nozzles for contained surface pressure washing.
- A swivel isolation valve shall allow use of ½ the cleaning path for special applications.
- A remote, hand-operated walkaway cleaning attachment is required, with provisions to carry the unit on the mobile vehicle.
 - Unit shall cover an approximate 20-inch cleaning path.
 - Unit shall have on / off control of pressurized water at the attachment itself.
 - Minimum 25-ft umbilical system for both pressurized water and vacuum recovery.
 - Provisions to attach the umbilical to the onboard system at the passenger side of the vehicle.
- Recovery of water / pollutant slurry by means of minimum 1000 cfm rated vacuum fan that shall pull cleaning slurry to recovery tank.
- 6-inch minimum recovery hose diameter at front cleaning platform
- Air / water separator at the recovery fan.
- Gross solids dewatering separator required below the vacuum fan before cleaning water / slurry falls to recovery tank sump.
- Start-up kit, over and above fully operable vehicle as delivered, to include as a minimum:
 - Two sacrificial front cleaning platform caster mounts
 - Two spray swivels, complete
 - Two swivel (seal) repair kits

- Four spare spray bars
- One break in spray bar with appropriate nozzle to break in new swivels.
- Two (2) primary filter strainer elements
- Two (2) secondary filter strainer elements
- Four (4) primary filter gaskets
- Eight (8) secondary filter gaskets.
- Eight (8) 15-degree spray nozzles
- Eight (8) 0-degree spray nozzles

DELIVERY, SERVICE AND WARRANTY

- Electronic manuals for chassis and cleaning system required.
- Factory trained technician shall come to purchaser site for machine set up, operational testing, operator and maintenance training within one week of machine delivery.
Minimum 3 days of on-site training.
- One-year warranty, see enclosed warranty statement



TRIVERUS

CLEANING & ENVIRONMENTAL SOLUTIONS



THE MUNICIPAL
CLEANING VEHICLE
(MCV)

MCV

COMPACT EFFICIENT CLEANING



The Municipal Cleaning Vehicle (MCV) packs high efficiency cleaning capacity into a compact and versatile standards-based platform. The 5 ft wide cleaning path provides for excellent productivity while still performing tasks inside parking facilities, sidewalks and other spaces where size and maneuverability count.

Triverus vehicles use high efficiency cleaning and recovery technology that takes outdoor hard surface cleaning to a new level of effectiveness. Vehicle configurations range from compact solutions for municipal spaces and parking structures to flight decks on aircraft carriers and airfield ramp and runway maintenance.

Triverus MCV Specification Sheet

Chassis: Multipurpose All-Wheel Steer

Wheelbase: 88"

Overall Width: 66" (includes side mounted recovery hose but not mirrors)

Overall Length: 180" (including cleaning platform)

Engine: 61 HP Tier 4 Diesel

Transmission: Hydrostatic Drive (All wheel drive and all wheel steer)

Travel Speed: 0-17 MPH

Work Speed: 0-8 MPH

Empty Weight: 6,500 lbs

Fuel Capacity: 20 Gallons

Patent Numbers: 7,735,186 8,393,049 and Patents Pending. All Rights Reserved.



RECOVERY SYSTEM

Vacuum: 1000+ CFM

Water Recovery Tank: 200 Gallons

Solids Collection: removable gross solids collection tray in recovery tank available

Offload Pump: 50+ GPM Pumping mechanism that enables a

5-minute vehicle fill/waste removal cycle for incredible productivity

HIGH PRESSURE WATER SYSTEM

9.5 GPM @ 5800 PSI Pump capacity

Cleaning Path: 60" (Up to 8.5 GPM @ 4,500 PSI using standard nozzle configuration)

Filtration: Dual Level Mesh System (30 mesh prescreen, 100 mesh final)

Clean Water Tank: 200 Gallons Max

KEY FEATURES

Single engine system with dual range hydrostatic drive:

This system allows precise control for low speed operation but still allows the vehicle to quickly traverse the work site when needed.

High flow vacuum recovery system: provides excellent recovery of water and debris even on grooved and pervious surfaces.

Integrated HMI/control system: provides visual feedback of system operating parameters and includes integrated interlocks.

Multifunction capability: the cleaning platform and recovery module can be removed to allow other attachments to be fitted for multi-function operation.

Dual level high pressure pump filtration protection with inlet pressure lockout.

Remote hand wand with Storage Reel.

Optional: front FOD Magnet and Walk Away Cleaning Head with recovery.

APPLICATIONS

Airports / Municipal Spaces

The MCV is built for city cleaning and environmental programs. The chassis is maintainable and familiar to typical grounds/equipment maintenance facilities. Parts and service are readily available for a rigorous daily operations tempo.

- * **Pervious rejuvenation and effective maintenance**
- * **Paint prep: captures adhered fines and loose paint**
- * **Crack seal prep: cleans below the surface**
- * **Spill response and containment**
- * **Aesthetic cleaning for street markings and decorative paved areas**
- * **Parking garages and other facilities**
- * **Lifts and contains oil and grease accumulations**
- * **Excellent maneuverability through 4-wheel steer, includes crab mode for closer edge cleaning**
- * **Out-front cleaning platform location for reach into single parking spots**
- * **Easily removable Triverus modules for seasonal chassis use with other attachments**

ENVIRONMENTAL PERVIOUS / NON-PERVIOUS

MCV environmental applicability is based on its ability to recover small and adhered particles that contribute to storm water pollution. This ability is proven to far exceed results from typical vacuum or regen sweeping.

The MCV is suited for:

- * SWP source control: (cleaning areas with known surface contamination such as solids leading to TSS problems, Copper and Zinc)
- * Pervious surface restoration: pervious surfaces can be cleaned with MCV technology and surface percolation functionality can be restored.
- * Pervious surface maintenance: the MCV can maintain pervious concrete/asphalt and porous paver installations.



(866) 670-7117 | Triverus.com | inquire@triverus.com
Rev: 9-2021

specifications subject to change without notice