



BUS WASH BASIC COST PER WASH ANALYSIS



DIRECT CONSUMABLE WASH COST

MATERIALS:

Electricity Avg kWh	\$ 0.09	Average
Detergent/Gal	\$ 11.00	Average

CONSUMPTION PER WASH: BASED UPON A 40' VEHICLE

WATER

Cycle/Time	Time in Minutes		Water Consumption		
	Cycle Sec	Water On	GPM	Total Gal	Type
Side Detergent Low PH	40	0.7	12	8.0	Fresh
Rear Detergent Low PH	8	0.1	7	0.9	Fresh
Presoak Detergent High PH	8	0.1	7	0.9	Fresh
Blastrer Rinse Arch	40	0.7	230	153.3	Fresh
Rear Blast	8	0.1	185	24.7	Fresh

Total Fresh Water Gallons 187.9

DETERGENTS - (Settings based on previous fleet experience)

Cycle/Time	Time Minutes		Chemicals		Dilution Rate :	Cost @ Above Rates
	Cycle Sec	Water On	Oz /Min	Total Oz		
Side Detergent Low PH	40	0.7	30.7	20.5	50	\$1.76
Rear Detergent Low PH	8	0.1	35.8	4.8	25	\$0.41
Presoak High PH	8	0.1	35.8	4.8	25	\$0.41

Total \$2.58

UTILITIES:

Equipment	Electricity		Gas Cost
	kWh	Cost	
TSP		\$ 0.20	\$ 0.02
Detail Equipment		\$ -	\$ 0.01
Subtotal		\$ 0.20	\$ 0.03

Total \$0.23

TOTAL ESTIMATED COST PER WASH \$2.81



HYDRO-CHEM SYSTEMS, INC.

6605 Broadmoor Ave SE | Caledonia, MI 49316
 PH: 616-531-6420 | FX: 616-531-8692
 www.hcsclean.com



BUYER NAME/ADDRESS
 Livonia Public Schools
 attn: Harry Lau

Date: 12/16/19
Shipping: INCLUDED
Quote Valid: 30 Days
Writer #: 122
Terms: See Planning Form
Proposal #: GDM12162019
SALESPERSON: Geoff Momber
CELL CONTACT #: 616-426-3533
EMAIL ADDRESS: geoff.momber@hcsclean.com

QUOTE

ITEM	DESCRIPTION	QTY	NET	EXT
	TOUCHLESS AUTOMATED DRIVE-THRU - BUS WASH			
	DETERGENT ARCH WITH FIXED SIDE MANIFOLDS, INTENSIFIED REAR AND FRONT PRE-SOAK MANIFOLDS	1		INCLUDED
	ARCH Constructed of 4"x4" aluminum material, utilized because of aluminum's natural anti-corrosion properties. This construction eliminates the need for painting to provide long life and dependability. This arch is to be attached to the floor with the use of stainless steel anchors.			
FOAMING NOZZLES	SIDE MANIFOLDS Constructed of Schedule 80 PVC The side detergent manifold applies detergent to the sides of the vehicle. The tires and lower portion of the vehicle will receive slightly more detergent to address the toughest area.			
	INTENSIFIED REAR MANIFOLDS: Constructed of Schedule 80 PVC The intensified rear detergent manifold applies detergent to the rear of flat sided vehicle at up to double the concentration vs the sides, increasing the cleaning ability of the wash system on the rear of the vehicle.			
	INTENSIFIED PRESOAK MANIFOLDS: Constructed of Schedule 80 PVC. The intensified presoak detergent feature applies detergent to the front and wind deflector of the vehicle at up to double the concentration applied to the sides. This feature increases the cleaning ability of the wash system on the front of the vehicle.			
	DETERGENT INJECTION MODULE	1		INCLUDED
	Modules will mix softened water with either heavy duty detergent for application through the detergent arch manifolds. The dilution method will allow for the soap to be calibrated between 10:1 to 100:1.			
	BOOSTER PUMP	1		INCLUDED
	The booster pump features include a stainless steel stack impeller unit with a 120V, 1.5 HP TEFC motor. The booster pump ensures that the proper dilution and application rates are achieved by maintaining constant water pressure. The pump comes with an Across Line Motor Starter.			



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	BLASTER RINSE ARCH	1		INCLUDED
	Constructed of 4"x4" aluminum material, utilized because of aluminum's natural anti-corrosion properties. The rinse manifold is constructed of 1 1/2" galvanized pipe, and uses stainless steel nozzles.			
	This arch will also include 1 can spinner each side on the bottom to clean the wheels			
	UNDERCARRIAGE MANIFOLD	1		INCLUDED
	This unit will consist of an undercarriage blaster manifold with (7) stainless steel nozzles to effectively clean the snow, salt and mud from the chasis of the vehicle.			
	REAR BLAST RINSE MANIFOLD	1		INCLUDED
	Constructed of 4"x4" aluminum material, utilized because of aluminum's natural anti-corrosion properties. The Rear Blast Manifold is constructed of 2" galvanized pipe, and uses stainless steel nozzles. This arch effectively removes dirt and road film from the rear of the vehicle. This arch shall be activated when the rear of the vehicle passes the Oscillating Blaster Rinse Arch. This activation will be controlled with a devoted sensor and shall automatically shut off after the vehicle has passed.			
	This assembly will also include an industrial solenoid valve to allow switching from the Oscillating Blaster Rinse Arch to the Rear Blast Arch			
	AIR CONTROL PANEL - RINSE	1		INCLUDED
	This panel is utilized for the oscillation of the Blaster Side Rinse Manifold			
	RINSE PUMP MODULE	1		INCLUDED
	Rinse pump is a multi-stage centrifugal pump with Stainless Steel impellers and Stainless Steel base. The 460 Volt, 3 Phase TEFC, 60HP pump delivers approximately 230 GPM @ 330 PSI, with an efficiency of 75%.			
	RINSE PUMP MOTOR STARTER - ACROSS LINE	1		INCLUDED
	FRESH WATER TANK	1		INCLUDED
	1,000 Gallon Water Reservoir Tank with automatic fill valve, low level shutoff sensors to prevent a wash from starting if a low water level is alarmed and protect the rinse pump connected to the tank			



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ITEM	DESCRIPTION	QTY	NET	EXT
	MASTER CONTROL PANEL	1		INCLUDED
	Master Control Panel (MCP) is a PLC based control system and regulates all operations of the wash system. The MCP is engineered to meet the requirements of NEC Articles 430 and 670, and NFPA Standard 70 and incorporates additional safety/protection by utilizing protective extra low voltage (PELV) outputs for all for wash bay sensing and control initiation, eliminating high voltage in the wash bay.			
	The MCP incorporates a front mounted LCD Display providing easy access to supervisory functions and visual diagnostic capability of all input and output sensors, including number of wash events, system and pump run time hours. Includes Test mode function allowing independent testing of all functions of the system from the MCP.			
	INTERNET CONNECTION MODULE FOR DIAGNOSTICS	1		INCLUDED
	HCS completes the programming of the system to meet all of the needs of the fleet that is being washed. The programmable controller is sized to accommodate future expansion possibilities. The MCP has the capability to connect via an Ethernet line to monitor, troubleshoot, and program remotely. With the addition of network access, HCS can diagnose and resolve system problems remotely.			
	HEAVY DUTY GUIDE RAILS - POWDER COATED YELLOW	1		INCLUDED
	These guide rails are made out of 4" diameter pipe and spaced off the floor giving a total height of 6 7/8", making them larger than most manufactures and they provide excellent protection from trucks driving over them. Included is two (2) set of lead-in guide rails. Mounting will be done using 3/4" anchors.			
	SENSOR KIT	1		INCLUDED
	Sensor/Loop kit will consist of required loop sensors, photo-eyes, necessary limit switches and will contain: in-ground wire, loop sealant and the sensor mounted in MCP. The photo-eyes will consist of the eyes and mounting hardware. Loop Sensor to be installed into slots cut into wash bay floor. Concrete cutting and machine rental by contractor.			



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	WATER HEATER	1		INCLUDED
	The water heater specified will be a 199,000 BTU heavy-duty commercial natural gas water heater . This unit has a patented unitized heat exchanger and an internal flue damper, which results in higher thermal efficiencies and lower heat loss during standby operation. System <i>sentinel diagnostic system</i> and dielectric nipples are included. Equipped with spark to pilot ignition system, hand hole clean out, full port full flow drain valve, and factory installed T&P valve. It includes multiple water connection locations for installation flexibility.			
	WATER SOFTENER – DETERGENT WATER	1		INCLUDED
	This commercial, <i>alternating twin-tank, high-volume</i> water softener can provide continuous soft water at a flow rate of 14 GPM, with a peak rating of 19 GPM . The water softener will be utilized for the detergent water. Features of the water softener include two (2) 20,000-grain capacity tanks.			
	LOW VOLTAGE STREET LIGHTS AND SIGNS	1		INCLUDED
	<i>Low voltage streetlights</i> will be installed at the entrance in the wash bay for the detail function. Also included is our sign package that is customized to the customer's needs.			
	DRIVER PACE LIGHTS and CONTROL BOX	1		INCLUDED
	This includes 6 driver pace lights and its control.			
	MISC. PARTS AND SUPPLIES	1		INCLUDED
	Misc. parts and supplies includes most miscellaneous jumper hoses, nuts, bolts, screws, anchors, barbs, uni-strut, clamps, chemical tubing, etc.			
	DETERGENT - 275 GALLONS - TANK PROVIDED	1		INCLUDED



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ITEM	DESCRIPTION	QTY	NET	EXT
	SYSTEM INSTALLATION ASSISTANCE & COMMISSIONING	1		INCLUDED
	<p>This line item estimate will include 1 trip the job site. The onsite time budget for the initial trip will be for 4 factory support people, working FIVE DAYS ONSITE. Final electrical and mechanical interconnection to be performed by others hired by manufacturer (wiring, conduit, piping).</p> <p><i>Owner will be responsible for unloading equipment onto job site and providing necessary concrete cutting machine for cutting the wash bay floor for loop sensor installation (if necessary); as well as the man-lift equipment necessary for the setting of the wash bay arches. Owner is responsible for any necessary permits if needed.</i></p>			
			TOTAL SYSTEM COST INCLUDING SHIPPING AND BASIC SETUP	\$113,703
			DEMOLITION/REMOVAL OF EXISTING SYSTEM, PLUMBING AND ELECTRICAL WORK ADDITIONAL	\$27,370
			TOTAL TURN KEY PRICE	\$141,073



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LIVONIA
PUBLIC SCHOOLS

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ITEM	DESCRIPTION	QTY	NET	EXT
	<p>WARRANTY:</p> <p>Hydro-Chem Systems, Inc will repair or replace the vehicle washing equipment or their components that fail in material or workmanship for one year from date of substantial completion. Travel time/expenses and or labor is additional. This warranty shall not apply to equipment and parts subjected to abuse or improper use, lack of maintenance or accident. If the project is delayed, warranties can be shorter duration due to procurement dates on components. The use of unapproved chemicals in the vehicle wash system may void warranty. Customer and/or Chemical vendor will accept responsibility for damage that may occur to the wash equipment. The components subject to warranty must be shipped prepaid to HCS with a Return Goods Authorization (RGA) number, for warranty consideration. Throughout the warranty period HCS will provide FREE Internet diagnostics of the wash system assuming the owner provides connectivity to the wash system.</p>			

PLEASE READ CAREFULLY: THIS IS A VALID AND ENFORCEABLE PROPOSAL SUBJECT ONLY TO ACCEPTANCE OF THE SELLER BY AN AUTHORIZED EXECUTIVE OF THE SELLER. BUYER AGREES TO THE TERMS LISTED ABOVE AND ON THE REVERSE SIDE HEREOF. BUYER UNDERSTANDS THAT ALL UTILITIES ARE TO BE PROVIDED TO THE EQUIPMENT BY THE BUYER. ANY APPLICABLE TAXES APPLY.

Proposal Good For 30 Days

QUOTE BASED ON USD

Geoff Momber

Geoff Momber, Automated Sales Engineer

Customer Signature

Date

Purchase Order Number

Customer Name Printed

THE AUTOMATED SYSTEM PLANNING FORM APPLIES TO THIS PROPOSAL

HYDRO-CHEM SYSTEMS, INC. AUTOMATED SYSTEM PLANNING FORM

The following information is provided to furnish the CUSTOMER with an estimate of costs based on initial meetings with CUSTOMER and discussion as to equipment that may be appropriate. The price quoted is a 'one price' proposal based on the customer meeting certain milestones throughout the project, including on time delivery and requirements for setup and start up.

PLANNING DESIGN EXPENSE

Should HYDRO-CHEM SYSTEMS, INC (HCS) be asked (required) to correspond/meet with various planners, i.e., owners, architects, engineers, contractors, etc., to work on plans, develop drawings, develop requirements, etc., prior to acceptance of proposal, HCS will help plan at a rate of \$95.00/hour plus any travel expenses. Should CUSTOMER or CUSTOMER'S representatives make changes to plans after the initial plans are completed, additional planning time will be charged at the rate of \$95.00/hour. Such changes may also result in additional costs for the installation, if alterations must be made or additional work is required.

HCS understands that all projects need planning therefore, when the order is placed, there is allowance for up to three (3) man-days (travel or site time) of planning fees that is included in the initial proposal on projects over \$100,000, and one (1) man-day for lesser projects.

Long distance travel details, for jobsites over 150 miles from HCS, travel expenses are additional, (Airfare)

HCS allocates 10% of its total cost to submittal costs on applicable projects (requiring schedule of values).

SETUP/STARTUP/INSTALLATION EXPENSES - As of 1-1-19

HCS Setup and Startup fees are included unless otherwise noted on the proposal. In the event addition time is required they will be invoiced at a rate of 1250 per day inclusive of per diem*.

Per Person Daily Rate	\$1,250
<u>Per Diem Expenses</u>	
Lodging with Tax per person	Included
Meals	Included
Car Rental & Fuel per day	Included
Incidentals	Included
AIRFARE	Included *Change fees Actual

INSTALL CONDITIONS

Installation does not include the cost of licensed trades or subcontractors, i.e., electricians, plumbers, concrete cutting, overhead door companies, etc. Those costs are the responsibility of the owner or general contractor. HCS will assist in coordinating installation needs with subcontractors, but HCS is not responsible for their workmanship, costs, or delays caused by them. If HCS is required to act as a general contractor/coordinator, fees to accomplish these tasks will be added to the installation costs.

The price quoted is the price for HCS to install if the building is clean and clear when we start. There are to be no other contractors working in the truck wash area. Other trades should have their pre-install work completed, and shall return when HCS clears the area. If HCS is required to clean up after other contractors, the time will be billed at HCS's regular labor rate plus the cost of any other equipment required to perform the clean up. These clean up costs are not included in this quote.

HCS will include all signs known to be required relative to the soap products and electrical devices. Price will include all signs necessary to direct drivers to receive a proper wash. CUSTOMER'S Safety Department will be responsible to provide signs as deemed necessary to control the movement and action of persons in the wash bay area. All electrical panels manufactured by Hydro-Chem Systems, Inc. are assembled to UL AND NEC Standards using national or international approved components. If requirements at the particular installation site require any additional testing or certification, CUSTOMER will be responsible for any incurred charges.

CUSTOMER shall furnish HCS with as-built blueprints showing the correct location of all in-floor/under-floor plumbing, wiring, etc. that may be damaged by drilling the floor to anchor equipment. In lieu of blueprints, the CUSTOMER will be required to approve the locations of drilling. HCS will not be liable for accidental drilling damage if not properly advised by the CUSTOMER. CUSTOMER shall be responsible for any permits. HCS is NOT responsible for code required seismic restraints.

Price does not include any special equipment needed such as fork lift or scissor lift or other misc. equipment. CUSTOMER may furnish the proper equipment or HCS will rent the appropriate equipment and invoice the CUSTOMER. Price does not include delivery, lodging, or travel expenses. These items will be discussed at time of proposal and will be included if indicated on proposal.

Install price includes only the basic wash system. Installation of all accessories, i.e. hose reels, wash stations, etc., will be billed on a time and materials basis unless otherwise stated in the proposal.

ORDER TERMS

General Agreement: All sales are expressly conditioned on the terms and conditions set forth on this form along with those contained in any attachments hereto. No additional or different items shall apply (whether a part of CUSTOMER'S Purchase Order or other communication from CUSTOMER) unless expressly agreed to in writing by a duly authorized representative of Hydro-Chem Systems, Inc. Notice is hereby given that Hydro-Chem Systems, Inc. does object to any different or additional terms, and that such different or additional terms shall not be binding upon it. Acceptance of a systems proposal or payment for any of the goods constitutes CUSTOMER'S agreement to the Hydro-Chem Systems, Inc. Terms and Conditions

Warranties. Shall be listed on the proposal.

Taxes. The quoted prices do not include applicable sales or use taxes. All such taxes levied or imposed, now or hereafter, by any government authority shall be timely paid by the CUSTOMER. Where appropriate, such taxes shall be added at time of invoicing. Sales tax shall be included in payment terms invoicing unless a completed Tax Exemption Form has been received by HCS. With systems outside of the state of Michigan, the CUSTOMER will be responsible for payment of taxes to the appropriate authorities

Delivery. HCS shall not be liable for any delays in or failure of delivery due to acts of God or public authority, labor disturbances, accidents, fires, floods, extreme weather conditions, failure of and delays of carriers, shortages of material, delays of supplier or any other cause beyond HCS's control. The CUSTOMER'S requested delivery date or schedule shall be approximate and subject to HCS's acceptance and commercially reasonable effort. If HCS is required to hold equipment 60 days past the estimated delivery date indicated on the proposal a \$1,000 per month storage fee will apply. After the equipment has arrived on site it is the CUSTOMER'S responsibility to maintain security for the equipment. HCS will not be liable for any damage or theft after the equipment has been received at the CUSTOMER'S site.

Returned Checks: A \$25.00 Handling Fee will be charged with full payment due immediately in the form of cash money, Money Order, Bank Draft, or Certified Check for this fee and the invoice.

Missed/Late Payments. A Service Charge of 2% (24% Annual Percentage Rate) or the highest rate permitted by applicable law, whichever is lower, will be charged on all overdue accounts. Past due accounts may be placed on COD or submitted for collection. CUSTOMER will be liable for all collection fees and expenses (including attorney fees)

Contingencies: HCS shall not be liable to the CUSTOMER for any nonperformance of this Agreement by HCS because of circumstances beyond HCS's control. Such circumstances include, but are not limited to: labor disputes, acts of God, unusual weather conditions, unavailability of transportation, shortages of materials, and requirements of any governmental authority.

Ownership: Title to the equipment sold by HCS to the CUSTOMER shall not transfer to CUSTOMER until the final payment is received

Cancellations: Due to the nature of large projects, after a signed order is placed it cannot be canceled

Arbitration: Any dispute arising pursuant to any relation between CUSTOMER and HCS shall be submitted to arbitration in the City of Grand Rapids, MI, in accordance with the rules of the American Arbitration Association. The award of the arbitrator shall be final and binding on the parties. Judgment upon any award rendered may be entered in any court having jurisdiction

PAYMENT TERMS

OPTION 1

- 30% Payment at time of order
- 30% Payment 30 days after order
- 30% Payment 60 days after order
- 10% Payment plus all extras due at the time of startup or 15 day after HCS completes install if delays are caused by others.

OPTION 2

- 10% Payment at time of order
- 20% Payment 120 days prior to delivery
- 30% Payment 90 days prior to delivery
- 30% Payment 60 days prior to delivery
- 10% Payment plus all extras due at the time of startup or 15 day after HCS completes install if delays are caused by others

Company Name (if applicable)

Authorized Signature

Date

Print Name and Title

HYDRO-CHEM SYSTEMS, INC.

6605 Broadmoor Ave SE

Caledonia, MI 49316

"AN EMPLOYEE OWNED COMPANY"

Phone: 616-531-6420 Fax: 616-531-8692

email: sales@hcs-clean.com

HCS Signature

Date