

LF110104-39

A	B	C	D	E	F	G
1	<b>Lifecycle Cost Analysis - Vehicle Selection - Owned 3 yd. Front End Loader</b>					
2	<b>Universal Variable Data</b>		<b>Derived Values</b>		<b>FORMULA/SOURCE:</b>	
3	Target Months in Service:	60	Actual Months:	60	Actual Months in Service given the Maximum Replacement Hours and Hours-per-Month set by policy	
4	Target Replacement Hours:	3,000	Actual Hours:	3,000	Actual Hours at Replacement given the Maximum Service Months and Hours-per-Month set by policy	
5	Expected Hours-per-Month:	50	Daily Hours:	1.6	Expected Average Hours-per-Month used. Average Daily Hours used given the Hours-per-Month entered	
6	Entry Annual Interest Rate:	3.65%	Monthly Interest:	0.304%	Annual Interest Rate/12 months	
7	Office Overhead Fee (%):	0.00%			Figured from office overhead costs (salaries, administrative, etc.) (enter either a % flat rate—enter "0" in the one not used)	
8	Office Overhead Fee (Flat Rate):	\$ -			Figured from office overhead costs (salaries, administrative, etc.) (enter either a % flat rate—enter "0" in the one not used)	
9	Book Depreciation Rate:	0.90%			Rate set by government entity for all capital/rolling stock items	
10	Fuel Cost-per-Gallon:	\$ 1.80			Average price of fuel per gallon	
11	Estimated Personal Use:	0%			Percentage of personal use for which the employee reimburses the employer (enter 0 if you will not charge for personal use)	
12	Current Running Cost-per-Hour:	\$ -			Vehicle cost-per-hour, either from leasing companies or from actual experience	
13						
14		<b>Loader A</b>	<b>Loader B</b>	<b>Loader C</b>	Enter the vehicle models being analyzed	
15	<b>Acquisition Cost</b>					
16	Factory Invoice Price	\$ 149,000.00	\$ 139,000.00	\$ 145,000.00	Obtained from lessor, dealer or alternate source	
17	Dealer Holdback Adjustment	\$ -	\$ -	\$ -	Obtained from lessor, dealer or alternate source - incentive portion normally given to dealer	
18	AFV Incentive/Credit	\$ -	\$ -	\$ -	Tax credit or incentive (AFVs, Clean Air Credits, etc.) - enter only if appears on invoice	
19	Mfg. Additional Incentive	\$ -	\$ -	\$ -	Obtained from lessor, dealer or alternate source - added incentive for early order, etc.	
20	Fleet Incentive	\$ -	\$ -	\$ -	Obtained from lessor, dealer or alternate source - special fleet discounts	
21	<b>Net Acquisition Cost</b>	<b>\$ 149,000.00</b>	<b>\$ 139,000.00</b>	<b>\$ 145,000.00</b>	Factory Invoice Price - Dealer Holdback Adjustment - Mfg. Additional Incentive - Fleet Incentives (or value from leasing company)	
22	<b>Fixed Costs</b>					
23	Effective Depreciation	\$ 74,336.00	\$ 73,500.00	\$ 70,728.00	Net Acquisition Cost - Projected Resale Price, OR Net Acquisition Cost - Price by Month Adjustment	
24	Projected Resale Price	\$ 65,884.00	\$ 65,500.00	\$ 74,274.00	Average price from Machinery Trader.com	
25	Number of Months Past September	0	0	0	Number of months past optimum September replacement month	
26	Price by Month Adjustment	\$ -	\$ -	\$ -	Amended projected resale value based on number of months past optimum replacement month of September	
27	Cost of Money	\$ 19,520.20	\$ 19,380.77	\$ 20,217.35	Cost of Money not invested for rate of return. (Year 1 Interest + Year 2 Interest + Year 3 Interest + Year 4 Interest + Year 5 Interest)	
28	Year 1	\$ 4,865.18	\$ 4,850.27	\$ 5,059.83	(Net Vehicle Cost * Year 1 Interest Factor) * Year 1 Total Months (see table in lower left of sheet)	
29	Year 2	\$ 4,384.80	\$ 4,363.21	\$ 4,551.55	(Net Vehicle Cost * Year 2 Interest Factor) * Year 2 Total Months (see table in lower left of sheet; subtract all months from previous years)	
30	Year 3	\$ 3,804.04	\$ 3,878.15	\$ 4,043.47	(Net Vehicle Cost * Year 3 Interest Factor) * Year 3 Total Months (see table in lower left of sheet; subtract all months from previous years)	
31	Year 4	\$ 3,413.48	\$ 3,388.10	\$ 3,535.39	(Net Vehicle Cost * Year 4 Interest Factor) * Year 4 Total Months (see table in lower left of sheet; subtract all months from previous years)	
32	Year 5	\$ 2,922.92	\$ 2,902.04	\$ 3,027.31	(Net Vehicle Cost * Year 5 Interest Factor) * Year 5 Total Months (see table in lower left of sheet; subtract all months from previous years)	
33	Cost of Insurance	\$ 742.00	\$ 756.70	\$ 788.50	Net Acquisition Cost / 100 * .08 / 12 * 60	
34	Management Fee	\$ -	\$ -	\$ -	Management Fee * Net Acquisition Cost * Actual Months in Service or Flat Rate Management Fee	
35	Build Time Delay Cost	\$ -	\$ -	\$ -	The current cost of owning and maintaining a vehicle anyway until new unit comes in based on cost per mile, daily mileage, and days over least delivery time	
36	Days Over Least Delivery Time	0	0	0	Calendar days over least amount of delivery time of any of the three selected vehicles	
37	Delivery Days	0	0	0	Calendar days for guaranteed delivery (enter "0" if does not apply or there is no added cost to provide transportation while awaiting delivery)	
38	AFV TAX CREDIT	\$ -	\$ -	\$ -	IRS Tax Credit	
39	Mfg. Additional Incentive	\$ -	\$ -	\$ -	Incentive paid directly to the fleet	
40	<b>Total Fixed Cost:</b>	<b>\$ 94,598.20</b>	<b>\$ 93,617.47</b>	<b>\$ 91,711.85</b>	Actual Depreciation + Interest + Management Fee + Build Time Delay Cost	
41	<b>Operating Costs</b>					
42	Total Fuel Cost	\$ 1,140.00	\$ 1,286.87	\$ 950.00	(Actual Hours/Estimated Hours-per-Gallon) * Fuel Cost-per-Gallon	
43	Estimated gallons per hour	5	4.5	3	Value from EPA Estimated City Mileage or actual experience	
44	Total Maintenance Cost	\$ 28,871.00	\$ 28,437.00	\$ 21,562.00	Actual Hours * Estimated Maintenance Cost-per-Hour	
45	Estimated Maintenance Cost-per-Hour	\$ 8,987.00	\$ 9,476.00	\$ 7,184.00	Value from leasing company or actual experience (may add separate lines for Collision Loss/Insurance, prorated license, and rental costs while vehicle is down)	
46	<b>Total Operating Cost:</b>	<b>\$ 28,011.00</b>	<b>\$ 29,703.67</b>	<b>\$ 22,502.00</b>	Total Fuel Cost + Total Maintenance Cost	
47	<b>Personal Use Costs</b>					
48	Fixed Cost for Personal Use	\$ -	\$ -	\$ -	Total Fixed Cost * Estimated Personal Use	
49	Operating Cost for Personal Use	\$ -	\$ -	\$ -	Total Operating Cost * Estimated Personal Use	
50	<b>Total Personal Use Cost</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	Fixed Cost for Personal Use + Operating Cost for Personal Use (amount to be reimbursed to employer by employee)	
51						
52	<b>Total Lifecycle Cost:</b>	<b>\$ 122,608.20</b>	<b>\$ 123,321.14</b>	<b>\$ 114,213.85</b>	Total Fixed Cost + Total Operating Cost - Total Personal Use Cost	
53	<b>Lifecycle Cost-per-Hour:</b>	<b>\$ 40.8687</b>	<b>\$ 41.1070</b>	<b>\$ 38.0713</b>	Total Lifecycle Cost / Actual Hours	
54						
55	<b>Lease Summary</b>					
56	Book Depreciation (Reserve)	\$ 67,200.00	\$ 66,720.00	\$ 69,600.00	Actual Purchase Price * (Book Depreciation Rate * Actual Months)	
57	Total of Lease Payments	\$ 86,720.20	\$ 85,100.77	\$ 89,817.35	Reserve For Depreciation + Interest + Management Fee (total cash outlay to leasing company to cover capitalized cost)	
58	Depreciation Adjustment (TRAC)	\$ 7,138.00	\$ 6,780.00	\$ 1,126.00	Net Acquisition Cost - Book Depreciation - Projected Resale Price (Terminal Rental Adjustment Clause)	
59						
60	<b>Annual Cost of Money Calculations - Step Rate Formula</b>					
61	Holding Period	Total Months	Book Value	Interest Factor	Cost of Money that entity loses by paying in cash for vehicle vs. investing total amount and paying monthly for a lease.	
62	Year 1	12	0.96800	0.2808%	Book Value = 1 - ((1 - 1) * (12 - 1) / 2) * Book Depreciation Rate; Interest Factor = Book Value * Monthly Interest	
63	Year 2	24	0.88000	0.2818%	Book Value = 1 - ((13 - 1) * (24 - 1) / 2) * Book Depreciation Rate; Interest Factor = Book Value * Monthly Interest	
64	Year 3	36	0.78400	0.2324%	Book Value = 1 - ((25 - 1) * (36 - 1) / 2) * Book Depreciation Rate; Interest Factor = Book Value * Monthly Interest	
65	Year 4	48	0.68800	0.2392%	Book Value = 1 - ((37 - 1) * (48 - 1) / 2) * Book Depreciation Rate; Interest Factor = Book Value * Monthly Interest	
66	Year 5	60	0.57200	0.1749%	Book Value = 1 - ((49 - 1) * (60 - 1) / 2) * Book Depreciation Rate; Interest Factor = Book Value * Monthly Interest	

## Wheel Loader Life Cycle Cost Bid Form:

Item No. =====	Est. Description Qty. =====	Unit Price =====	Total Price =====
1.	Wheel Loader Purchase Price	\$ <u>140,000</u>	\$ <u>280,000</u>
	Yr/Make/Model _____		
2.	Trade In Price / Offer	\$ <u>75,000</u>	\$ <u>150,000</u> -
3.	Total Maintenance Costs	\$ <u>1959.75</u>	\$ <u>3919.50</u> +
	(From Scheduled Maintenance Calculation Form Attached)		
4.	Maximum Repair Costs (Extended Warranty)	\$ <u>5,000</u>	\$ <u>10,000</u> +
	( <u>5</u> Years / <u>3000</u> Hours)		
5.	Residual / Salvage Value	\$ <u>165,000</u>	\$ <u>130,000</u> -
	( <u>5</u> Years / <u>3,000</u> Hours)		
Total Bid Price (1 - 2 + 3 + 4 - 5)			\$ <u><u>13,919.50</u></u>

Cost per Change

= \$ 159.50

Total Hrs. Operation

3000

Service Interval

2000

x

Cost Per Change

159.50

= Total Cost (E)

= 159.50

**F. Parking Brake Service:** From the manufacturer's maintenance manual determine the Parking Brake drain and refill interval. Insert this hourly number, insert the total capacity (in gallons) and perform the calculation to arrive at the total cost for a Parking Brake service.

Total Hrs. Operation

          

÷

Service Interval

          

x

Gearbox Cap

          

x Cost per Gal.

(Gal) x \$6.75

= Total Cost (F)

= None

**G. Cooling System:** From the manufacturer's maintenance manual determine the cooling system's drain and refill interval. Insert this hourly number, insert the total capacity (in gallons) and perform the calculation to arrive at the total cost for a cooling system service.

Total Hrs. Operation

3000

÷

Service Interval

3000

x

Cooling System Cap x Cost per Gal.

15 (Gal) x \$6.75

= Total Cost (H)

= 101.25

**H. Engine Vibration Damper:** From the manufacturer's maintenance manual determine the Engine Vibration Damper replacement interval (If Required). Insert this hourly number, insert the labor cost and perform the calculation to arrive at the total cost for an engine vibration damper service.

Total Hrs. Operation

          

÷

Service Interval

          

x

Labor Cost

          

= Total Cost (I)

= None

**TOTALS: (Per one (1) unit)** Listed below are each of the categories just calculated. Insert the total number of each category in the space provided and add the column.

A. Grease Fittings	\$ <u>1005.00</u>
B. Engine Oil and Filters	\$ <u>975.00</u>
C. Transmission Oil	\$ <u>477.00</u>
D. Hydraulic System Changes	\$ <u>285.00</u>
E. F&R Axle Oil Changes	\$ <u>159.50</u>
F. Parking Brake Oil Changes	\$ <u>          </u>
G. Cooling System Changes	\$ <u>101.25</u>
H. Engine Vibration Damper	\$ <u>          </u>

**TOTAL SCHEDULED MAINTENANCE COSTS:**

\$ 2942.75

# Wheel Loader Scheduled Maintenance Calculation Form:

**Instructions:** The intent of this form is to determine the total scheduled maintenance costs that can be expected during the first 3000 hours of ownership (Operation). Service intervals, number of grease fittings, and capacities should be taken directly from the manufacturer's lubrication and maintenance manual. Unit costs given are equal for all vendors. Although there may be a slight variance due to refill capacities, these total costs are made up of labor, overhead, lost production, gaskets, lubricants, filters, and supervisory time. The comparison examines the service intervals for the various units bid and assumes that the manufacturer's recommendations, if followed exactly, will allow the costs that are to be incurred on each unit, to be calculated with reasonable accuracy.

## A. Grease Fittings: (Per one (1) unit)

Determine the number of fittings at each interval. Insert each number as indicated (if none, write none). Perform calculations and total in the last column.

Total Hrs. Operation	Service Interval	x	No. of Fittings	Cost Per Fitting	=	Total Cost (a)
<u>3000</u>	<u>10</u>	x	<u>None</u>	x \$ .25	=	<u>0</u>
<u>3000</u>	<u>50</u>	x	<u>1</u>	x \$ .25	=	<u>240</u>
<u>3000</u>	<u>100</u>	x	<u>12</u>	x \$ .25	=	<u>360</u>
<u>3000</u>	<u>250</u>	x	<u>18</u>	x \$ .25	=	<u>216</u>
<u>3000</u>	<u>500</u>	x	<u>18</u>	x \$ .25	=	<u>108</u>
<u>3000</u>	<u>1000</u>	x	<u>18</u>	x \$ .25	=	<u>54</u>
<u>3000</u>	<u>2000</u>	x	<u>18</u>	x \$ .25	=	<u>27</u>
<b>TOTAL COST</b>						<b>= \$ <u>1005</u></b>

**B. Engine Oil & Filter:** From manufacturer's maintenance manual determine crankcase drain and refill interval. Insert this hourly number and perform the calculation to arrive at the total cost for an engine oil change.

Number of Gallons	<u>5</u>	x \$ 6.75 / Gallon	= \$ <u>33.75</u>	+
Current Cost of Filters			= \$ <u>15.00</u>	+
Fixed Cost (Time x Agencies Labor Cost / Hr)	<u>5 @ 65</u>		= \$ <u>325.00</u>	+
Cost per Change			= \$ <u>81.25</u>	
Total Hrs. Operation	<u>3000</u>	Service Interval <u>250</u> x	Cost Per Change <u>81.25</u>	= Total Cost (B)
				= \$ <u>975.00</u>

**C. Transmission Oil:** From manufacturer's maintenance manual determine transmission drain and refill interval. Insert this hourly number and perform the calculation to arrive at the total cost for a transmission oil change.

Number of Gallons	<u>8</u>	x \$ 6.75 / Gallon	= \$ <u>54.00</u>	+
Current Cost of Filters			= \$ <u>40.00</u>	+
Fixed Cost (Time x Agencies Labor Cost / Hr)	<u>1 @ 65</u>		= \$ <u>65.00</u>	+
Cost per Change			= \$ <u>159.00</u>	
Total Hrs. Operation	<u>3000</u>	Service Interval <u>1000</u> x	Cost Per Change <u>159.00</u>	= Total Cost (C)
				= \$ <u>477</u>

**D. Hydraulic System:** From the manufacturer's maintenance manual determine the hydraulic system's drain and refill interval. Insert this hourly number, insert the total capacity (in gallons) and perform the calculation to arrive at the total cost for a hydraulic system service.

Number of Gallons	<u>20</u>	x \$ 6.75 / Gallon	= \$ <u>135.00</u>	+
Current Cost of Filters			= \$ <u>25.00</u>	+
Fixed Cost (Time x Agencies Labor Cost / Hr)	<u>1 @ 65.00</u>		= \$ <u>65.00</u>	+
Cost per Change			= \$ <u>225.00</u>	
Total Hrs. Operation	<u>3000</u>	Service Interval <u>2000</u> x	Cost per Change <u>225</u>	= Total Cost (D)
				= \$ <u>225.00</u>

**E. Front & Rear Axle Oil:** From the manufacturer's maintenance manual determine the Axle's drain and refill interval. Insert this hourly number, insert the total capacity (in gallons) and perform the calculation to arrive at the total cost for an Axle service.

Number of Gallons	<u>14</u>	x \$ 6.75 / Gallon	= \$ <u>94.50</u>	+
Fixed Cost (Time x Agencies Labor Cost / Hr)	<u>1 @ 65</u>		= \$ <u>65.00</u>	+