

**FAC 7412     Automobile Craft Center**

RUC:            \$137.24 SF

Source:        USACE PAX Newsletter 3.2.2 of Feb 08  
                  CC 74024  
                  Deflated to FY-09 using Appendix C

SUC:            \$2.44 SF

Source:        Cost Works model in \$FY-08, inflated to \$FY-09 using Green Book  
                  Table 5-6 (O&M less DHP)  
                  Model follows:

Chart:         A chart showing relative annual sustainment requirements follows:

**FAC 7412-Automobile Craft Center**  
**CostWorks 2008 Quarter 2**

Design Life= 40  
Average S.F= 5,713

C.S.F=100 S.F; MSF=1000 S.F  
Sq=100 S.F; M.L.F=1000 L.F

This spreadsheet was  
exported from R.S Means  
CostWorks

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design life

Description	Frequency	Crew	Qty	Unit	Total In-House	Total Incl. O&P	Release	Occurrences in Design Life	Adjusted Occurrences	Terminal Cutoff
Replace aluminum siding - 1st floor	35	1 Carp	20.790	C.S.F.	9,442.19	11,333.88	2008 Qtr 2	1	1	\$ 11,333.88
Refinish aluminum siding - 1st floor	20	1 Pord	20.790	C.S.F.	3,141.78	3,874.01	2008 Qtr 2	2	1	\$ 3,874.01
Repair 2'-0" x 3'-0" aluminum window - 1st floor	20	1 Carp	132.000	Ea.	15,174.72	17,978.40	2008 Qtr 2	2	1	\$ 17,978.40
Replace 2'-0" x 3'-0" aluminum window - 1st floor	50	1 Carp	132.000	Ea.	57,895.20	67,714.68	2008 Qtr 2	0	0	\$ -
Replace glass - 1st floor (1% of glass)	1	1 Carp	7.920	S.F.	71.68	84.11	2008 Qtr 2	40	40	\$ 3,364.42
Repair aluminum storefront door	12	1 Carp	4.000	Ea.	1,655.76	1,962.72	2008 Qtr 2	3	3	\$ 5,888.16
Replace 3'-0" x 7'-0" aluminum storefront doors	50	1 Carp	4.000	Ea.	6,725.04	7,896.32	2008 Qtr 2	0	0	\$ -
Replace insulating glass - (3% of glass)	1	1 Carp	2.520	S.F.	91.90	107.68	2008 Qtr 2	40	40	\$ 4,307.18
Repair 12' x 12' steel roll-up door	10	1 Carp	4.000	Ea.	3,330.44	3,858.16	2008 Qtr 2	4	3	\$ 11,574.48
Refinish 12' x 12' steel roll-up door	5	1 Pord	4.000	Ea.	675.32	822.16	2008 Qtr 2	8	8	\$ 6,577.28
Replace 12' x 12' steel roll-up door	35	2 Carp	4.000	Ea.	13,301.08	15,398.20	2008 Qtr 2	1	1	\$ 15,398.20
Repair steel, painted, door	14	1 Carp	5.000	Ea.	2,912.20	3,431.80	2008 Qtr 2	2	2	\$ 6,863.60
Refinish 3'-0" x 7'-0" steel, painted, door	4	1 Pord	5.000	Ea.	164.55	201.55	2008 Qtr 2	10	10	\$ 2,015.50
Replace 3'-0" x 7'-0" steel, painted, door	45	1 Carp	5.000	Ea.	2,660.40	3,100.20	2008 Qtr 2	0	0	\$ -
Debris removal by hand & visual inspection thermosetting	1	2 Rofc	5.713	M.S.F.	167.62	201.95	2008 Qtr 2	40	40	\$ 8,078.18
Non - destructive moisture inspection thermosetting	5	2 Rofc	5.713	M.S.F.	518.63	627.29	2008 Qtr 2	8	8	\$ 5,018.30
Roof replacement thermosetting	20	G1	57.130	Sq.	31,602.03	37,283.61	2008 Qtr 2	2	1	\$ 37,283.61
Minor membrane repairs - (2% of roof area) thermosetting	1	G5	1.143	Sq.	278.94	331.31	2008 Qtr 2	40	40	\$ 13,252.40
Flashing repairs - (2 S.F. per sq. repaired) thermosetting	1	2 Rofc	2.285	S.F.	5.07	6.06	2008 Qtr 2	40	40	\$ 242.21
Minor replacement - (25% of roof area) thermosetting	10	G5	14.280	Sq.	4,113.93	4,844.06	2008 Qtr 2	4	3	\$ 14,532.18
Repair steel painted interior door	14	1 Carp	4.000	Ea.	671.00	792.56	2008 Qtr 2	2	2	\$ 1,585.12
Refinish 3'-0" x 7'-0" steel painted interior door	4	1 Pord	4.000	Ea.	197.60	243.28	2008 Qtr 2	10	10	\$ 2,432.80
Replace 3'-0" x 7'-0" steel painted interior door	60	1 Carp	4.000	Ea.	3,750.16	4,359.84	2008 Qtr 2	0	0	\$ -
Refinish drywall	4	1 Pord	4,027.000	S.F.	2,416.20	2,979.98	2008 Qtr 2	10	10	\$ 29,799.80
Replace 5/8" drywall	75	2 Carp	4,027.000	S.F.	8,980.21	10,832.63	2008 Qtr 2	0	0	\$ -
Repair 5/8" drywall - (2% of walls)	20	1 Carp	80.540	S.F.	128.06	153.83	2008 Qtr 2	2	1	\$ 153.83
Refinish concrete floor finished	25	2 Cefi	48.530	C.S.F.	16,958.32	20,416.09	2008 Qtr 2	1	1	\$ 20,416.09
Replace vinyl floor	18	1 Tilf	95.560	S.Y.	4,562.99	5,571.15	2008 Qtr 2	2	2	\$ 11,142.30
Inspect and clean spray heads, emergency eye wash	3	1 Plum	1.000	Ea.	37.80	47.44	2008 Qtr 2	13	13	\$ 616.72
Replace eye wash station, emergency eye wash	25	2 Plum	1.000	Ea.	573.92	695.88	2008 Qtr 2	1	1	\$ 695.88
Unplug clogged line flush-tank water closet	5	1 Plum	4.000	Ea.	673.04	840.72	2008 Qtr 2	8	8	\$ 6,725.76
Replace washer / diaphragm in ball cock flush-tank water closet	5	1 Plum	4.000	Ea.	56.28	69.60	2008 Qtr 2	8	8	\$ 556.80
Replace valve and ball cock assembly flush-tank water closet	15	1 Plum	4.000	Ea.	299.76	370.72	2008 Qtr 2	2	2	\$ 741.44
Install gasket between tank and bowl flush-tank water closet	20	1 Plum	4.000	Ea.	123.32	154.12	2008 Qtr 2	2	1	\$ 154.12
Replace one piece water closet flush-tank	35	2 Plum	4.000	Ea.	2,644.52	3,082.92	2008 Qtr 2	1	1	\$ 3,082.92
Replace faucet washer sink, iron enamel	2	1 Plum	1.000	Ea.	9.79	12.19	2008 Qtr 2	20	20	\$ 243.80

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Description	Frequency	Crew	Qty	Unit	Total In-House	Total Incl. O&P	Release	Occurrences in Design Life	Adjusted Occurrences	Terminal Cutoff
Clean trap sink, iron enamel	3	1 Plum	1.000	Ea.	6.60	8.25	2008 Qtr 2	13	13	\$ 107.25
Replace faucets sink, iron enamel	10	1 Plum	1.000	Ea.	123.49	149.06	2008 Qtr 2	4	3	\$ 447.18
Unstop sink sink, iron enamel	2	1 Plum	1.000	Ea.	32.21	40.50	2008 Qtr 2	20	20	\$ 810.00
Replace sink, P.E.C.I. sink, iron enamel	35	2 Plum	1.000	Ea.	552.72	657.69	2008 Qtr 2	1	1	\$ 657.69
Replace flush valve diaphragm urinal	7	1 Plum	1.000	Ea.	70.74	83.06	2008 Qtr 2	5	5	\$ 415.30
Rebuild flush valve urinal	20	1 Plum	1.000	Ea.	131.98	160.01	2008 Qtr 2	2	1	\$ 160.01
Unplug line urinal	5	1 Plum	1.000	Ea.	112.14	139.91	2008 Qtr 2	8	8	\$ 1,119.28
Replace wall-hung urinal	35	2 Plum	1.000	Ea.	841.63	1,006.57	2008 Qtr 2	1	1	\$ 1,006.57
Resolder joint pipe & fittings, copper	10	1 Plum	2.000	Ea.	65.70	80.90	2008 Qtr 2	4	3	\$ 242.70
Replace pipe and fittings, copper 3/4"	20	2 Plum	16.000	L.F.	283.52	343.68	2008 Qtr 2	2	1	\$ 343.68
Replace pipe and fittings, copper 2"	25	2 Plum	16.000	L.F.	652.96	785.76	2008 Qtr 2	1	1	\$ 785.76
Remove old insulation & replace with new, pipe 3/4", wall 1"	15	1 Plum	16.000	L.F.	112.16	136.64	2008 Qtr 2	2	2	\$ 273.28
Drain and flush water heater, electric, 120 gallon	7	1 Plum	1.000	Ea.	226.43	283.04	2008 Qtr 2	5	5	\$ 1,415.20
Check operation water heater, electric, 120 gallon	3	1 Plum	1.000	Ea.	1.98	2.48	2008 Qtr 2	13	13	\$ 32.24
Replace water heater, electric, 120 gallon	15	2 Plum	1.000	Ea.	9,192.45	10,543.79	2008 Qtr 2	2	2	\$ 21,087.58
Unclog main drain pipe & fittings, cast iron	10	1 Plum	1.000	Ea.	35.62	44.41	2008 Qtr 2	4	3	\$ 133.23
Unclog floor drain, PVC	20	1 Plum	1.000	Ea.	37.09	45.87	2008 Qtr 2	2	1	\$ 45.87
Repair joint pipe and fittings, PVC	10	1 Plum	1.000	Ea.	115.94	144.14	2008 Qtr 2	4	3	\$ 432.42
Replace pipe, 4" pipe and fittings, PVC	30	2 Plum	16.000	L.F.	947.20	1,171.04	2008 Qtr 2	1	1	\$ 1,171.04
Replace pipe & fittings, cast iron	40	2 Plum	16.000	L.F.	670.40	811.20	2008 Qtr 2	1	0	\$ -
General maintenance & repair drain: roof, scupper, area	1	1 Plum	4.000	Ea.	113.40	142.68	2008 Qtr 2	40	40	\$ 5,707.20
Replace drain: roof, scupper, area	40	1 Plum	4.000	Ea.	1,593.36	1,872.56	2008 Qtr 2	1	0	\$ -
Replace roof mounted exhaust fan, 8500 CFM exhaust fan	20	Q20	1.000	Ea.	2,619.48	3,050.64	2008 Qtr 2	2	1	\$ 3,050.64
Replace air conditioner, window, 1 ton	10	L2	2.000	Ea.	1,296.68	1,504.12	2008 Qtr 2	4	3	\$ 4,512.36
Repair air conditioner, window, 1 ton	8	1 Stpi	1.000	Ea.	65.02	80.66	2008 Qtr 2	5	5	\$ 403.30
Maintenance and repair explosionproof industrial heater	2	1 Elec	3.000	Ea.	385.26	453.54	2008 Qtr 2	20	20	\$ 9,070.80
Maintenance and inspection explosionproof industrial heater	0.5	1 Elec	3.000	Ea.	187.38	234.24	2008 Qtr 2	80	80	\$ 18,739.20
Replace heater explosionproof industrial heater	15	1 Elec	3.000	Ea.	17,251.86	19,715.13	2008 Qtr 2	2	2	\$ 39,430.26
Replace sprinkler head	20	1 Plum	50.000	Ea.	3,184.00	3,923.00	2008 Qtr 2	2	1	\$ 3,923.00
Inspect sprinkler system	1	1 Plum	1.000	Ea.	26.55	32.89	2008 Qtr 2	40	40	\$ 1,315.60
Rebuild double check 3" backflow preventer sprinkler system	1	1 Plum	1.000	Ea.	598.06	715.83	2008 Qtr 2	40	40	\$ 28,633.20
Maintenance and inspection lighting panel, indoor	3	1 Elec	1.000	Ea.	28.50	35.63	2008 Qtr 2	13	13	\$ 463.19
Maintenance and repair safety switch gen., 2 pole	8	1 Elec	2.000	Ea.	57.00	71.26	2008 Qtr 2	5	5	\$ 356.30
Maintenance and inspection safety switch, 2 pole	1	1 Elec	2.000	Ea.	57.00	71.26	2008 Qtr 2	40	40	\$ 2,850.40
Replace safety switch 240 V, 2 pole	25	2 Elec	2.000	Ea.	707.96	842.76	2008 Qtr 2	1	1	\$ 842.76
Replace fluor. ballast for fluorescent lighting fixture, 80 W	10	1 Elec	21.000	Ea.	2,091.18	2,521.68	2008 Qtr 2	4	3	\$ 7,565.04

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Replace lamps (2 lamps) fluorescent lighting fixture, 80 W	10	1 Elec	21.000	Ea.	534.24	654.78	2008 Qtr 2	4	3	\$ 1,964.34
Maintenance and repair receptacles and plugs	20	1 Elec	18.000	Ea.	559.62	697.14	2008 Qtr 2	2	1	\$ 697.14
Replace receptacle/plug receptacles and plugs	20	1 Elec	18.000	Ea.	949.68	1,159.56	2008 Qtr 2	2	1	\$ 1,159.56
Maintenance and repair wiring devices, switches	10	1 Elec	12.000	Ea.	373.08	464.76	2008 Qtr 2	4	3	\$ 1,394.28
Replace switch wiring devices, switches	15	1 Elec	12.000	Ea.	614.52	748.20	2008 Qtr 2	2	2	\$ 1,496.40
Repair heat detector	10	1 Elec	21.000	Ea.	877.80	1,073.73	2008 Qtr 2	4	3	\$ 3,221.19
Check operation heat detector	1	1 Elec	21.000	Ea.	239.40	300.30	2008 Qtr 2	40	40	\$ 12,012.00
Replace heat detector	15	1 Elec	21.000	Ea.	2,456.37	2,994.39	2008 Qtr 2	2	2	\$ 5,988.78
Check and repair manual pull station	10	1 Elec	2.000	Ea.	138.42	169.74	2008 Qtr 2	4	3	\$ 509.22
Replace manual pull station	15	1 Elec	2.000	Ea.	251.48	303.78	2008 Qtr 2	2	2	\$ 607.56
					\$247,481.71	\$292,153.35				
									MR Subtotal	\$ 432,529.36
									MR Per Year	\$ 10,813.23
									PM Per Year	\$ 3,585.72
									Subtotal	\$ 14,398.95
									Total Per Unit	\$ 2.52

**CostWorks 2009 Quarter 1 - FAC 7412-Automobile Craft Center**

Qty	Assembly Number	Description	Total In-House	Total Incl. O&P	Zip Code Prefix	Type	Release
4.000	B2035 410 1950	Door, overhead, electric, roll up, to 24' high x 25' w	960.64	1,160.48	200	FMR	2008 Qtr 2
9.000	B2035 225 1950	Door, emergency egress, swinging, annualized	445.59	517.59	200	FMR	2008 Qtr 2
4.000	C1025 110 1950	Fire doors, swinging, annualized	99.56	119.44	200	FMR	2008 Qtr 2
1.000	D2015 100 1950	Urinals, annualized	12.93	16.15	200	FMR	2008 Qtr 2
4.000	D2015 100 3950	Toilet (tank type), annualized	87.84	109.32	200	FMR	2008 Qtr 2
1.000	D3045 210 1950	Fan, axial, up to 5,000 CFM, annualized	70.55	86.20	200	FMR	2008 Qtr 2
2.000	D3055 210 1950	Package unit, air cooled, 3 thru 24 ton, annualized	415.42	502.06	200	FMR	2008 Qtr 2
1.000	D4015 100 1950	Backflow prevention device, up to 4", annualized	18.89	23.42	200	FMR	2008 Qtr 2
1.000	D4015 150 1950	Extinguishing system, wet pipe, annualized	806.79	983.35	200	FMR	2008 Qtr 2
1.000	D5015 260 1950	Panelboard, 225 A and above, annualized	56.96	67.71	200	FMR	2008 Qtr 2
			<b>\$2,975.17</b>	<b>\$3,585.72</b>			

# FAC 7412 Sustainment by Year - Terminal Cutoff Applied

