

FAC 2141 Vehicle Maintenance Shop

RUC: \$210.25 SF

Source: Tri-Service FAC 2141 from *Tri-Service Facility Unit Costs for Military Construction* version prepared November 13, 2009

SUC: \$3.31 SF

Source: Cost Works model in \$FY-08, inflated to \$FY-09 using Green Book Table 5-6 (O&M less DHP)
In V12, values were inflated only.

Model follows:

Chart: A chart showing relative annual sustainment requirements follows:

FAC 2141 - Vehicle Maintenance Shop					This spreadsheet was exported from R.S Means CostWorks		Terminal Cutoff is the removal of a single task occurrence if that task occurs within 10% of the end of the design life and if the frequency of the task exceeds 20% of the design life. This prevents scheduling major work near the end of the design life						
CostWorks 2009 Quarter 3													
Service Life					50 C.S.F=100 S.F; MSF=1000 S.F								
Representative Size					8142 Sq=100 S.F; M.L.F=1000 L.F								
Description	Fre- quency	Crew	Qty	Unit	Total In- House	Total Incl. O&P	Zip Code Prefix	Type	Release	Occurrences in Design Life	Adjusted Occurrences	lifecost	Terminal Cutoff
Repair 8" concrete block wall - 1st floor	25	1 Bric	396	S.F.	8525.88	10375.2	203	FMR	2009 Qtr 3	2	1	20750.4	10375.2
Replace aluminum siding - 2nd floor	35	1 Carp	31.501	C.S.F.	19510.45936	23473.60017	203	FMR	2009 Qtr 3	1	1	23473.60017	23473.60017
Refinish aluminum siding - 2nd floor	20	1 Pord	31.501	C.S.F.	7960.61771	9753.02461	203	FMR	2009 Qtr 3	2	2	19506.04922	19506.04922
Replace glass - 2nd floor (1% of glass)	1	1 Carp	2.0928	S.F.	198.648576	243.39264	203	FMR	2009 Qtr 3	50	50	12169.632	12169.632
Repair 3'-9" x 5'-5" steel frame window - 2nd flr.	20	1 Carp	18	Ea.	6334.92	7439.76	203	FMR	2009 Qtr 3	2	2	14879.52	14879.52
Refinish 3'-9" x 5'-5" steel frame window - 2nd flr.	5	1 Pord	18	Ea.	2404.44	2974.86	203	FMR	2009 Qtr 3	10	10	29748.6	29748.6
Replace 3'-9" x 5'-5" steel frame window - 2nd flr.	45	1 Carp	18	Ea.	31470.48	35997.3	203	FMR	2009 Qtr 3	1	1	35997.3	35997.3
Repair steel, painted, door	14	1 Carp	9	Ea.	5650.92	6665.04	203	FMR	2009 Qtr 3	3	3	19995.12	19995.12
Refinish 3'-0" x 7'-0" steel, painted, door	4	1 Pord	9	Ea.	317.79	390.69	203	FMR	2009 Qtr 3	12	12	4688.28	4688.28
Replace 3'-0" x 7'-0" steel, painted, door	45	1 Carp	9	Ea.	4983.48	5762.61	203	FMR	2009 Qtr 3	1	1	5762.61	5762.61
Refinish 12' x 24' steel double roll-up door	5	1 Pord	4	Ea.	1462.16	1789.36	203	FMR	2009 Qtr 3	10	10	17893.6	17893.6
Replace 12' x 24' steel double roll-up door	35	2 Carp	4	Ea.	28451.28	33218.76	203	FMR	2009 Qtr 3	1	1	33218.76	33218.76
Debris removal by hand & visual inspection metal steep roofing	1	2 Rofc	0.00654	M.S.F.	0.1244562	0.15042	203	FMR	2009 Qtr 3	50	50	7.521	7.521
Minor finish repairs - (2% of roof area) metal steep roofing	5	2 Rofc	123.4752	S.F.	350.669568	417.346176	203	FMR	2009 Qtr 3	10	10	4173.46176	4173.46176
Flashing replacement - (2 S.F. per sq. repaired) metal steep roofing	1	2 Rofc	12.317	S.F.	190.79033	229.83522	203	FMR	2009 Qtr 3	50	50	11491.761	11491.761
Minor replacement - (2.5% of roof area) metal steep roofing	20	2 Rofc	154.344	S.F.	1478.61552	1754.89128	203	FMR	2009 Qtr 3	2	2	3509.78256	3509.78256
Total metal panel replacement metal steep roofing	30	2 Rofc	61.7376	Sq.	44250.4248	52517.70682	203	FMR	2009 Qtr 3	1	1	52517.70682	52517.70682
Repair steel painted interior door	14	1 Carp	12	Ea.	2132.28	2509.08	203	FMR	2009 Qtr 3	3	3	7527.24	7527.24
Refinish 3'-0" x 7'-0" steel painted interior door	4	1 Pord	12	Ea.	624.48	771.36	203	FMR	2009 Qtr 3	12	12	9256.32	9256.32
Replace 3'-0" x 7'-0" steel painted interior door	60	1 Carp	12	Ea.	11283.24	13139.04	203	FMR	2009 Qtr 3	0	0	0	0
Safety glass repl., (3% of glass) steel painted interior door	1	1 Carp	4.3164	S.F.	78.99012	93.579552	203	FMR	2009 Qtr 3	50	50	4678.9776	4678.9776
Replace insulating glass (3% of glass) fully glazed aluminum door	1	1 Carp	0.7848	S.F.	37.858752	44.011584	203	FMR	2009 Qtr 3	50	50	2200.5792	2200.5792
Repair 3'-0" x 7'-0" fully glazed aluminum door	12	1 Carp	2.18	Ea.	387.3642	455.8162	203	FMR	2009 Qtr 3	4	3	1823.2648	1367.4486
Replace 3'-0" x 7'-0" fully glazed aluminum door	50	1 Carp	2.18	Ea.	3901.655	4584.2784	203	FMR	2009 Qtr 3	1	0	4584.2784	0
Repair concrete steps	15	1 Cefi	4.36	S.F.	71.504	83.276	203	FMR	2009 Qtr 3	3	3	249.828	249.828
Refinish metal stair railing interior	7	1 Pord	26	S.F.	37.7	46.8	203	FMR	2009 Qtr 3	7	7	327.6	327.6
Replace metal stair railing interior	45	2 Sswk	26	L.F.	1093.82	1266.98	203	FMR	2009 Qtr 3	1	1	1266.98	1266.98
Repair 8" concrete block wall - (2% of walls) painted	25	1 Bric	1.46605	C.S.F.	1545.861762	1866.296311	203	FMR	2009 Qtr 3	2	1	3732.592621	1866.296311
Refinish concrete block wall painted	10	1 Pord	73.3025	C.S.F.	7513.50625	9164.27855	203	FMR	2009 Qtr 3	5	5	45821.39275	45821.39275
Refinish concrete floor finished	25	2 Cefi	79.57	C.S.F.	29918.32	36017.3605	203	FMR	2009 Qtr 3	2	1	72034.721	36017.3605
Acoustic tile repairs - (2% of ceilings)	9	1 Carp	1.5914	C.S.F.	794.42688	940.310518	203	FMR	2009 Qtr 3	5	5	4701.55259	4701.55259
Replace acoustic tile ceiling, fire-rated	20	1 Carp	79.57	C.S.F.	35169.94	41537.9271	203	FMR	2009 Qtr 3	2	2	83075.8542	83075.8542
Refinish acoustical tile ceiling and grid (occupied area)	5	2 Pord	0.00763	M.S.F.	5.6720657	6.9652744	203	FMR	2009 Qtr 3	10	10	69.652744	69.652744
Replace flush valve diaphragm tankless water closet	10	1 Plum	4	Ea.	299.76	347.92	203	FMR	2009 Qtr 3	5	5	1739.6	1739.6
Rebuild flush valve tankless water closet	20	1 Plum	4	Ea.	570.52	687.84	203	FMR	2009 Qtr 3	2	2	1375.68	1375.68
Unplug clogged line tankless water closet	5	1 Plum	4	Ea.	703.48	876.44	203	FMR	2009 Qtr 3	10	10	8764.4	8764.4
Replace tankless water closet	35	2 Plum	4	Ea.	1984.08	2338.88	203	FMR	2009 Qtr 3	1	1	2338.88	2338.88
Replace tankless flush valve	25	1 Plum	4	Ea.	827	967.52	203	FMR	2009 Qtr 3	2	1	1935.04	967.52
Replace wax ring gasket tankless water closet	5	1 Plum	4	Ea.	458.96	572.04	203	FMR	2009 Qtr 3	10	10	5720.4	5720.4
Replace flush valve diaphragm urinal	7	1 Plum	1	Ea.	74.94	86.98	203	FMR	2009 Qtr 3	7	7	608.86	608.86
Rebuild flush valve urinal	20	1 Plum	1	Ea.	142.63	171.96	203	FMR	2009 Qtr 3	2	2	343.92	343.92
Unplug line urinal	5	1 Plum	1	Ea.	117.19	146.25	203	FMR	2009 Qtr 3	10	10	1462.5	1462.5
Replace wall-hung urinal	35	2 Plum	1	Ea.	746.1	903.43	203	FMR	2009 Qtr 3	1	1	903.43	903.43

Description	Fre- quency	Crew	Qty	Unit	Total In- House	Total Incl. O&P	Zip Code Prefix	Type	Release	Occurrences in Design Life	Adjusted Occurrences	lifecost	Terminal Cutoff
Replace single zone variable volume, 20 ton	20	Q7	1	Ea.	35238.18	40940.26	203	FMR	2009 Qtr 3	2	2	81880.52	81880.52
Inspect sprinkler system	1	1 Plum	1	Ea.	27.48	34.33	203	FMR	2009 Qtr 3	50	50	1716.5	1716.5
Replace sprinkler head	20	1 Plum	3	Ea.	199.08	246.3	203	FMR	2009 Qtr 3	2	2	492.6	492.6
Rebuild double check 3" backflow preventer sprinkler system	1	1 Plum	1	Ea.	642.31	764.33	203	FMR	2009 Qtr 3	50	50	38216.5	38216.5
Maintenance and repair motor starter, up to 600 V	5	1 Elec	6	Ea.	1028.1	1253.1	203	FMR	2009 Qtr 3	10	10	12531	12531
Maintenance and inspection motor starter, up to 600 V	0.5	1 Elec	6	Ea.	238.62	297.48	203	FMR	2009 Qtr 3	100	100	29748	29748
Replace starter motor starter, up to 600 V	18	1 Elec	6	Ea.	3151.68	3750.48	203	FMR	2009 Qtr 3	2	2	7500.96	7500.96
Maintenance and inspection lighting panel, indoor	3	1 Elec	2	Ea.	59.92	74.38	203	FMR	2009 Qtr 3	16	16	1190.08	1190.08
Maintenance and repair receptacles and plugs	20	1 Elec	8	Ea.	258.16	319.84	203	FMR	2009 Qtr 3	2	2	639.68	639.68
Replace receptacle/plug receptacles and plugs	20	1 Elec	8	Ea.	430.24	529.68	203	FMR	2009 Qtr 3	2	2	1059.36	1059.36
Maintenance and repair wiring devices, switches	10	1 Elec	8	Ea.	258.16	319.84	203	FMR	2009 Qtr 3	5	5	1599.2	1599.2
Replace switch wiring devices, switches	15	1 Elec	4	Ea.	207.76	255.48	203	FMR	2009 Qtr 3	3	3	766.44	766.44
Minor repairs to light dimming panel	5	1 Elec	1	Ea.	151.32	180.36	203	FMR	2009 Qtr 3	10	10	1803.6	1803.6
Maintenance and inspection light dimming panel	1	1 Elec	1	Ea.	32.02	39.77	203	FMR	2009 Qtr 3	50	50	1988.5	1988.5
Replace light dimming panel	15	1 Elec	2	Ea.	2253.84	2703.54	203	FMR	2009 Qtr 3	3	3	8110.62	8110.62
Replace lamps (2 lamps) fluorescent lighting fixture, 80 W	10	1 Elec	66	Ea.	1713.36	2124.54	203	FMR	2009 Qtr 3	5	5	10622.7	10622.7
Replace fixture fluorescent lighting fixture, 80 W	20	1 Elec	66	Ea.	11705.1	14186.04	203	FMR	2009 Qtr 3	2	2	28372.08	28372.08
Replace M.H. ballast mercury halide fixture, 175 W	10	1 Elec	10	Ea.	1844.1	2155.4	203	FMR	2009 Qtr 3	5	5	10777	10777
Replace lamp mercury halide fixture, 175 W	5	1 Elec	10	Ea.	715.9	845.3	203	FMR	2009 Qtr 3	10	10	8453	8453
Replace mercury halide fixture, 175 W	20	1 Elec	10	Ea.	5817.8	6812.3	203	FMR	2009 Qtr 3	2	2	13624.6	13624.6
Replace fire alarm bell, 6"	20	1 Elec	3	Ea.	437.07	526.41	203	FMR	2009 Qtr 3	2	2	1052.82	1052.82
Minor repairs to fire alarm control panel	5	1 Elec	1	Ea.	108.23	132.26	203	FMR	2009 Qtr 3	10	10	1322.6	1322.6
Maintenance and inspection fire alarm control panel	0.5	1 Elec	1	Ea.	32.02	39.77	203	FMR	2009 Qtr 3	100	100	3977	3977
Replace fire alarm control panel	15	1 Elec	1	Ea.	1779.9	2138.42	203	FMR	2009 Qtr 3	3	3	6415.26	6415.26
Check and repair manual pull station	10	1 Elec	5	Ea.	346.35	424.5	203	FMR	2009 Qtr 3	5	5	2122.5	2122.5
Replace manual pull station	15	1 Elec	5	Ea.	645.2	785.1	203	FMR	2009 Qtr 3	3	3	2355.3	2355.3
Maintenance and repair transfer switch	5	1 Elec	1	Ea.	211.38	258.59	203	FMR	2009 Qtr 3	10	10	2585.9	2585.9
Maintenance and inspection transfer switch	0.5	1 Elec	1	Ea.	29.96	37.19	203	FMR	2009 Qtr 3	100	100	3719	3719
Replace transfer switch	18	1 Elec	1	Ea.	3589.78	4117.73	203	FMR	2009 Qtr 3	2	2	8235.46	8235.46
Repair single zone variable volume, 20 ton	15	Q6	1	Ea.	20752.79	24085.18	203	FMR	2009 Qtr 3	3	3	72255.54	72255.54
					391148.0893	462187.6573					MR Subtotal		\$ 1,003,494.56
											MR Per Year		\$ 20,069.89
											PM Per Year		\$ 9,542.91
											Subtotal		\$ 29,612.80
											Total Per Unit		\$ 3.64

Preventive Maintenance

CostWorks 2009 Quarter 3 - FAC2141		
Description	Qty	Labor Hours
Door, overhead, manual, up to 24' high x 25' wide, annually	4.000	4.39
Door, emergency egress, swinging, annualized	6.000	1.56
Drink fountain, annualized	1.000	0.62
Urinals, annualized	1.000	0.23
Toilet (vacuum breaker type), annualized	4.000	0.91
Lavatories, annually	4.000	0.35
Showers, annualized	2.000	0.46
Water heater, gas, to 120 gal., annually	1.000	1.02
Centrifugal, w/ reduction gear, over 1 H.P., annualized	1.000	1.28
Air conditioning,split system,DX air cooled,over 10 tons, annualized	2.000	7.14
Chiller, recip., water cooled, up to 50 tons, annualized	1.000	7.94
Air handling unit, 3 thru 24 tons, annualized	4.000	8.24
VAV Boxes, annualized	20.000	18.68
Air compressor, reciprocating, 5 to 40 H.P., annualized	1.000	4.86
Backflow prevention device, up to 4", annualized	1.000	0.33
Extinguishing system, dry pipe, annualized	1.000	13.02
Switchboard, with air circuit breaker, annualized	1.000	13.30
Switch, interrupt, high voltage, fused air, annualized	4.000	1.46
Security, intrusion alarm system, annualized	1.000	3.83
Fire alarm annunciator system, annualized	1.000	11.05
Motor control center, over 400 A, annualized	1.000	0.39

Total In-House	Total Incl. O&P	Zip Code Prefix	Type	Release
333.96	397.80	203	FMR	2009 Qtr 3
303.54	352.38	203	FMR	2009 Qtr 3
49.79	59.56	203	FMR	2009 Qtr 3
13.50	16.87	203	FMR	2009 Qtr 3
54.00	67.48	203	FMR	2009 Qtr 3
45.04	53.04	203	FMR	2009 Qtr 3
40.02	47.82	203	FMR	2009 Qtr 3
120.97	143.42	203	FMR	2009 Qtr 3
90.88	111.40	203	FMR	2009 Qtr 3
634.66	761.66	203	FMR	2009 Qtr 3
527.86	654.97	203	FMR	2009 Qtr 3
870.44	1,042.32	203	FMR	2009 Qtr 3
1,270.60	1,573.60	203	FMR	2009 Qtr 3
376.09	459.16	203	FMR	2009 Qtr 3
19.56	24.45	203	FMR	2009 Qtr 3
962.30	1,172.43	203	FMR	2009 Qtr 3
823.11	1,024.09	203	FMR	2009 Qtr 3
144.20	174.28	203	FMR	2009 Qtr 3
270.93	335.34	203	FMR	2009 Qtr 3
820.61	1,009.51	203	FMR	2009 Qtr 3
51.97	61.33	203	FMR	2009 Qtr 3
\$7,824.03	\$9,542.91			

