

FAC 7601 Museum

RUC: \$122.83 SF

Source: Marshall and Swift
 Section 16, Page 19
 Inflated to current year and adjusted for pricing using SPBI
 Inflated to FY-09 using Green Book Table 5-6, MCON
 In V12, Tri-Service and USACE PAX Newsletter values were updated while all
 other values were inflated only.

SUC: \$3.23 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 7601-Museum
CostWorks 2008 Quarter 2

Design Life= 55
Average S.F= 11,821

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

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

Description	Frequency	Crew	Qty	Unit	Total In-House	Total Incl. O&P	Release	Occurrences in Design Life	Adjusted Occurrences	Terminal Cutoff
Repair painted brick wall - 1st floor	25	1 Bric	255.200	S.F.	9,547.03	11,598.84	2008 Qtr 2	2	1	\$ 11,598.84
Replace brick wall - 2nd floor	75	1 Bric	25.500	C.S.F.	53,204.73	63,815.54	2008 Qtr 2	0	0	\$ -
Point and refinish brick wall - 2nd floor	25	1 Bric	25.500	C.S.F.	18,807.53	23,168.28	2008 Qtr 2	2	1	\$ 23,168.28
Replace brick wall - 3rd floor	75	1 Bric	25.500	C.S.F.	52,809.99	63,416.72	2008 Qtr 2	0	0	\$ -
Point and refinish brick wall - 3rd floor	25	1 Bric	25.500	C.S.F.	19,444.26	23,980.71	2008 Qtr 2	2	1	\$ 23,980.71
Replace glass - 1st floor (1% of glass)	1	1 Carp	0.400	S.F.	3.62	4.25	2008 Qtr 2	55	55	\$ 233.64
Replace glass - 2nd floor (1% of glass)	1	1 Carp	0.400	S.F.	34.96	42.82	2008 Qtr 2	55	55	\$ 2,355.10
Replace glass - 3rd floor (1% of glass)	1	1 Carp	0.400	S.F.	7.96	9.58	2008 Qtr 2	55	55	\$ 527.12
Repair 2'-0" x 3'-0" aluminum window - 1st floor	20	1 Carp	36.000	Ea.	4,138.56	4,903.20	2008 Qtr 2	2	2	\$ 9,806.40
Replace 2'-0" x 3'-0" aluminum window - 1st floor	50	1 Carp	36.000	Ea.	15,789.60	18,467.64	2008 Qtr 2	1	0	\$ -
Repair 2'-0" x 3'-0" aluminum window - 2nd floor	20	1 Carp	36.000	Ea.	5,533.20	6,639.12	2008 Qtr 2	2	2	\$ 13,278.24
Replace 2'-0" x 3'-0" aluminum window - 2nd floor	50	1 Carp	36.000	Ea.	17,184.60	20,203.56	2008 Qtr 2	1	0	\$ -
Repair 2'-0" x 3'-0" aluminum window - 3rd floor	20	1 Carp	36.000	Ea.	6,959.16	8,374.68	2008 Qtr 2	2	2	\$ 16,749.36
Replace 2'-0" x 3'-0" aluminum window - 3rd floor	50	1 Carp	36.000	Ea.	18,610.20	21,939.12	2008 Qtr 2	1	0	\$ -
Repair aluminum storefront door	12	1 Carp	2.000	Ea.	827.88	981.36	2008 Qtr 2	4	4	\$ 3,925.44
Replace 3'-0" x 7'-0" aluminum storefront doors	50	1 Carp	2.000	Ea.	3,362.52	3,948.16	2008 Qtr 2	1	0	\$ -
Replace insulating glass - (3% of glass)	1	1 Carp	1.300	S.F.	47.41	55.55	2008 Qtr 2	55	55	\$ 3,055.20
Repair 12' x 12' steel roll-up door	10	1 Carp	1.000	Ea.	832.61	964.54	2008 Qtr 2	5	5	\$ 4,822.70
Refinish 12' x 12' steel roll-up door	5	1 Pord	1.000	Ea.	168.83	205.54	2008 Qtr 2	11	11	\$ 2,260.94
Replace 12' x 12' steel roll-up door	35	2 Carp	1.000	Ea.	3,325.27	3,849.55	2008 Qtr 2	1	1	\$ 3,849.55
Repair steel, painted, door	14	1 Carp	3.000	Ea.	1,747.32	2,059.08	2008 Qtr 2	3	3	\$ 6,177.24
Refinish 3'-0" x 7'-0" steel, painted, door	4	1 Pord	3.000	Ea.	98.73	120.93	2008 Qtr 2	13	13	\$ 1,572.09
Replace 3'-0" x 7'-0" steel, painted, door	45	1 Carp	3.000	Ea.	1,596.24	1,860.12	2008 Qtr 2	1	1	\$ 1,860.12
Replace tempered glass - (3% of glass)	1	1 Carp	1.900	S.F.	36.67	43.62	2008 Qtr 2	55	55	\$ 2,399.32
Debris removal and visual inspection built-up roofing	0.5	2 Rofc	3.900	M.S.F.	114.43	137.87	2008 Qtr 2	110	110	\$ 15,165.15
Non-destructive moisture inspection built-up roofing	5	2 Rofc	3.900	M.S.F.	354.04	428.22	2008 Qtr 2	11	11	\$ 4,710.42
Minor membrane repairs - (2% of roof area) built-up roofing	1	G5	0.800	Sq.	275.62	325.63	2008 Qtr 2	55	55	\$ 17,909.76
Flashing repairs - (2 S.F. per sq. repaired) built-up roofing	1	2 Rofc	1.600	S.F.	5.38	6.40	2008 Qtr 2	55	55	\$ 352.00
Minor membrane replacement - (25% of roof area) built-up roofing	15	G5	9.900	Sq.	5,884.86	7,019.89	2008 Qtr 2	3	3	\$ 21,059.68
Total roof replacement built-up roofing	28	G1	39.400	Sq.	22,488.73	26,632.43	2008 Qtr 2	1	1	\$ 26,632.43
Repair solid core wood door interior	11	1 Carp	32.000	Ea.	5,368.00	6,340.48	2008 Qtr 2	5	5	\$ 31,702.40
Refinish 3'-0" x 7'-0" solid core wood door interior	4	1 Pord	32.000	Ea.	1,351.04	1,663.36	2008 Qtr 2	13	13	\$ 21,623.68
Replace 3'-0" x 7'-0" solid core wood door interior	40	1 Carp	21.000	Ea.	7,700.70	8,927.52	2008 Qtr 2	1	1	\$ 8,927.52
Replace 3'-0" x 7'-0" solid core, w/ safety glass dr. interior	40	1 Carp	11.000	Ea.	4,903.36	5,666.32	2008 Qtr 2	1	1	\$ 5,666.32
Repair concrete steps	30	1 Cefi	60.000	S.F.	1,053.00	1,229.40	2008 Qtr 2	1	1	\$ 1,229.40
Replace concrete steps	75	1 Cefi	60.000	S.F.	4,123.20	4,995.00	2008 Qtr 2	0	0	\$ -

FAC 7601-Museum
CostWorks 2008 Quarter 2

Design Life= 55
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Terminal Cutoff is the removal of a single task occurrence if that task occurs
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20% of the design life. This prevents scheduling major work near the end of the
design life

Description	Frequency	Crew	Qty	Unit	Total In-House	Total Incl. O&P	Release	Occurrences in Design Life	Adjusted Occurrences	Terminal Cutoff
Refinish metal stair railing interior	7	1 Pord	48.000	S.F.	65.76	81.60	2008 Qtr 2	7	7	\$ 571.20
Replace metal stair railing interior	45	2 Sswk	48.000	L.F.	1,721.76	1,989.12	2008 Qtr 2	1	1	\$ 1,989.12
Repair 5/8" drywall - (2% of walls)	20	1 Carp	324.800	S.F.	516.43	620.37	2008 Qtr 2	2	2	\$ 1,240.74
Refinish drywall	8	1 Pord	16,241.000	S.F.	9,744.60	12,018.34	2008 Qtr 2	6	6	\$ 72,110.04
Replace 5/8" drywall	75	2 Carp	16,241.000	S.F.	36,217.43	43,688.29	2008 Qtr 2	0	0	\$ -
Replace carpet	8	2 Tilf	985.100	S.Y.	44,457.56	51,363.11	2008 Qtr 2	6	6	\$ 308,178.68
Refinish concrete floor finished	25	2 Cefi	5.900	C.S.F.	2,061.70	2,482.07	2008 Qtr 2	2	1	\$ 2,482.07
Replace quarry tile floor	50	2 Tilf	2,364.000	S.F.	31,984.92	38,273.16	2008 Qtr 2	1	0	\$ -
Quarry tile floor repairs - (2% of floors)	15	1 Tilf	47.300	S.F.	292.31	364.21	2008 Qtr 2	3	3	\$ 1,092.63
Replace acoustic tile ceiling, fire-rated	20	1 Carp	112.300	C.S.F.	45,273.75	53,791.70	2008 Qtr 2	2	2	\$ 107,583.40
Check / minor repairs drinking fountain	1	1 Plum	3.000	Ea.	112.74	142.02	2008 Qtr 2	55	55	\$ 7,811.10
Repair internal leaks drinking fountain	4	1 Plum	3.000	Ea.	105.42	130.29	2008 Qtr 2	13	13	\$ 1,693.77
Correct water pressure drinking fountain	2	1 Plum	3.000	Ea.	96.63	121.50	2008 Qtr 2	27	27	\$ 3,280.50
Replace refrigerant drinking fountain	2	1 Plum	3.000	Ea.	47.52	56.58	2008 Qtr 2	27	27	\$ 1,527.66
Repair drain leak drinking fountain	4	1 Plum	3.000	Ea.	67.89	81.09	2008 Qtr 2	13	13	\$ 1,054.17
Replace fountain drinking fountain	10	2 Plum	3.000	Ea.	3,017.52	3,580.71	2008 Qtr 2	5	5	\$ 17,903.55
Replace washer in spud connection lavatory, vitreous china	7	1 Plum	9.000	Ea.	216.09	254.97	2008 Qtr 2	7	7	\$ 1,784.79
Replace washer in faucet lavatory, vitreous china	2	1 Plum	9.000	Ea.	88.65	110.61	2008 Qtr 2	27	27	\$ 2,986.47
Replace faucets lavatory, vitreous china	10	1 Plum	9.000	Ea.	1,111.41	1,341.54	2008 Qtr 2	5	5	\$ 6,707.70
Clean out strainer and P trap lavatory, vitreous china	2	1 Plum	9.000	Ea.	243.36	302.13	2008 Qtr 2	27	27	\$ 8,157.51
Replace lavatory, vitreous china	35	2 Plum	9.000	Ea.	4,771.71	5,721.30	2008 Qtr 2	1	1	\$ 5,721.30
Replace faucet washer	2	1 Plum	1.000	Ea.	9.79	12.19	2008 Qtr 2	27	27	\$ 329.13
Clean trap	3	1 Plum	1.000	Ea.	6.60	8.25	2008 Qtr 2	18	18	\$ 148.50
Replace faucets	10	1 Plum	1.000	Ea.	123.49	149.06	2008 Qtr 2	5	5	\$ 745.30
Unstop sink	2	1 Plum	1.000	Ea.	32.21	40.50	2008 Qtr 2	27	27	\$ 1,093.50
Replace sink, P.E.C.I.	35	1 Plum	1.000	Ea.	925.46	1,090.57	2008 Qtr 2	1	1	\$ 1,090.57
Replace flush valve diaphragm tankless water closet	10	1 Plum	9.000	Ea.	636.66	747.54	2008 Qtr 2	5	5	\$ 3,737.70
Rebuild flush valve tankless water closet	20	1 Plum	9.000	Ea.	1,187.82	1,440.09	2008 Qtr 2	2	2	\$ 2,880.18
Unplug clogged line tankless water closet	5	1 Plum	9.000	Ea.	1,514.34	1,891.62	2008 Qtr 2	11	11	\$ 20,807.82
Replace tankless water closet	35	2 Plum	9.000	Ea.	4,932.00	5,835.24	2008 Qtr 2	1	1	\$ 5,835.24
Replace tankless flush valve	25	1 Plum	9.000	Ea.	1,885.50	2,208.33	2008 Qtr 2	2	1	\$ 2,208.33
Replace wax ring gasket tankless water closet	5	1 Plum	9.000	Ea.	986.13	1,234.80	2008 Qtr 2	11	11	\$ 13,582.80
Replace flush valve diaphragm urinal	7	1 Plum	2.000	Ea.	141.48	166.12	2008 Qtr 2	7	7	\$ 1,162.84
Rebuild flush valve urinal	20	1 Plum	2.000	Ea.	263.96	320.02	2008 Qtr 2	2	2	\$ 640.04
Unplug line urinal	5	1 Plum	2.000	Ea.	224.28	279.82	2008 Qtr 2	11	11	\$ 3,078.02
Replace wall-hung urinal	35	2 Plum	2.000	Ea.	1,683.26	2,013.14	2008 Qtr 2	1	1	\$ 2,013.14

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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
Repair circulator pump, 1/12 - 3/4 H.P.	5	1 Stpi	1.000	Ea.	70.99	84.25	2008 Qtr 2	11	11	\$ 926.75
Replace circulator pump, 1/12 - 3/4 H.P.	15	Q1	1.000	Ea.	2,484.44	2,870.47	2008 Qtr 2	3	3	\$ 8,611.41
Resolder joint pipe & fittings, copper	10	1 Plum	1.000	Ea.	32.85	40.45	2008 Qtr 2	5	5	\$ 202.25
Replace pipe and fittings, copper 3/4"	20	2 Plum	18.000	L.F.	318.96	386.64	2008 Qtr 2	2	2	\$ 773.28
Drain and flush water heater, electric, 120 gallon	7	1 Plum	1.000	Ea.	226.43	283.04	2008 Qtr 2	7	7	\$ 1,981.28
Check operation water heater, electric, 120 gallon	3	1 Plum	1.000	Ea.	1.98	2.48	2008 Qtr 2	18	18	\$ 44.64
Replace water heater, electric, 120 gallon	15	2 Plum	1.000	Ea.	9,192.45	10,543.79	2008 Qtr 2	3	3	\$ 31,631.37
Unclog main drain pipe & fittings, cast iron	10	1 Plum	1.000	Ea.	35.62	44.41	2008 Qtr 2	5	5	\$ 222.05
Replace pipe & fittings, cast iron	40	2 Plum	400.000	L.F.	16,760.00	20,280.00	2008 Qtr 2	1	1	\$ 20,280.00
Unclog floor drain, PVC	20	1 Plum	1.000	Ea.	37.09	45.87	2008 Qtr 2	2	2	\$ 91.74
Unclog main drain pipe, PVC	10	1 Plum	0.200	M.L.F.	7.12	8.88	2008 Qtr 2	5	5	\$ 44.41
Repair joint pipe and fittings, PVC	10	1 Plum	1.000	Ea.	115.94	144.14	2008 Qtr 2	5	5	\$ 720.70
Replace pipe, 4" pipe and fittings, PVC	30	2 Plum	200.000	L.F.	11,840.00	14,638.00	2008 Qtr 2	1	1	\$ 14,638.00
General maintenance & repair drain: roof, scupper, area	1	1 Plum	2.000	Ea.	56.70	71.34	2008 Qtr 2	55	55	\$ 3,923.70
Replace drain: roof, scupper, area	40	1 Plum	2.000	Ea.	796.68	936.28	2008 Qtr 2	1	1	\$ 936.28
Repair air conditioner, DX, 20 ton	10	Q6	2.000	Ea.	48,258.16	56,039.22	2008 Qtr 2	5	5	\$ 280,196.10
Replace air conditioner, DX, 20 ton	20	Q7	2.000	Ea.	36,058.40	41,676.40	2008 Qtr 2	2	2	\$ 83,352.80
Minor repairs to fire alarm control panel	5	1 Elec	1.000	Ea.	107.84	130.97	2008 Qtr 2	11	11	\$ 1,440.67
Maintenance and inspection fire alarm control panel	0.5	1 Elec	1.000	Ea.	30.54	38.17	2008 Qtr 2	110	110	\$ 4,198.70
Replace fire alarm control panel	15	1 Elec	1.000	Ea.	2,615.62	3,107.84	2008 Qtr 2	3	3	\$ 9,323.52
Inspect sprinkler system	1	1 Plum	1.000	Ea.	26.55	32.89	2008 Qtr 2	55	55	\$ 1,808.95
Replace sprinkler head	20	1 Plum	100.000	Ea.	6,368.00	7,846.00	2008 Qtr 2	2	2	\$ 15,692.00
Rebuild double check 3" backflow preventer sprinkler system	1	1 Plum	1.000	Ea.	598.06	715.83	2008 Qtr 2	55	55	\$ 39,370.65
Replace fire alarm bell, 6"	20	1 Elec	3.000	Ea.	426.84	514.53	2008 Qtr 2	2	2	\$ 1,029.06
Maintenance and inspection C.B., 3 pole circuit breaker	0.33	1 Elec	1.000	Ea.	22.91	28.50	2008 Qtr 2	166	166	\$ 4,731.00
Replace C.B. enclosed, 600 V, 3 pole circuit breaker	12	1 Elec	1.000	Ea.	993.60	1,158.09	2008 Qtr 2	4	4	\$ 4,632.36
Maintenance and repair motor starter, up to 600 V	5	1 Elec	2.000	Ea.	341.50	415.00	2008 Qtr 2	11	11	\$ 4,565.00
Maintenance and inspection motor starter, up to 600 V	0.5	1 Elec	2.000	Ea.	76.34	95.70	2008 Qtr 2	110	110	\$ 10,527.00
Replace starter motor starter, up to 600 V	18	1 Elec	2.000	Ea.	1,056.36	1,260.82	2008 Qtr 2	3	2	\$ 2,521.64
Replace lamp emergency lighting fixture	2	1 Elec	8.000	Ea.	432.00	513.12	2008 Qtr 2	27	27	\$ 13,854.24
Replace emergency lighting fixture	20	1 Elec	8.000	Ea.	6,746.00	7,772.80	2008 Qtr 2	2	2	\$ 15,545.60
Maintenance and repair exit light	20	1 Elec	8.000	Ea.	262.64	318.96	2008 Qtr 2	2	2	\$ 637.92
Replace lamp exit light	5	1 Elec	8.000	Ea.	98.80	116.96	2008 Qtr 2	11	11	\$ 1,286.56
Replace lighting fixture exit light	20	1 Elec	8.000	Ea.	1,005.12	1,209.92	2008 Qtr 2	2	2	\$ 2,419.84
Replace fluor. ballast for fluorescent lighting fixture, 80 W	10	1 Elec	148.000	Ea.	14,737.84	17,771.84	2008 Qtr 2	5	5	\$ 88,859.20
Replace lamps (2 lamps) fluorescent lighting fixture, 80 W	10	1 Elec	148.000	Ea.	3,765.12	4,614.64	2008 Qtr 2	5	5	\$ 23,073.20

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Replace fixture fluorescent lighting fixture, 80 W	20	1 Elec	148.000	Ea.	26,355.84	31,836.28	2008 Qtr 2	2	2	\$ 63,672.56
Maintenance and repair receptacles and plugs	20	1 Elec	200.000	Ea.	6,218.00	7,746.00	2008 Qtr 2	2	2	\$ 15,492.00
Replace receptacle/plug receptacles and plugs	20	1 Elec	200.000	Ea.	10,552.00	12,884.00	2008 Qtr 2	2	2	\$ 25,768.00
Maintenance and repair wiring devices, switches	10	1 Elec	67.000	Ea.	2,083.03	2,594.91	2008 Qtr 2	5	5	\$ 12,974.55
Replace switch wiring devices, switches	15	1 Elec	67.000	Ea.	3,431.07	4,177.45	2008 Qtr 2	3	3	\$ 12,532.35
Repair smoke detector	10	1 Elec	24.000	Ea.	916.56	1,128.00	2008 Qtr 2	5	5	\$ 5,640.00
Check operation smoke detector	1	1 Elec	24.000	Ea.	273.60	343.20	2008 Qtr 2	55	55	\$ 18,876.00
Replace smoke detector	15	1 Elec	24.000	Ea.	4,549.20	5,447.76	2008 Qtr 2	3	3	\$ 16,343.28
Remove old insulation & replace with new, pipe 3/4", wall 1"	15	1 Plum	1,300.000	L.F.	9,113.00	11,102.00	2008 Qtr 2	3	3	\$ 33,306.00
					\$714,007.16	\$850,994.87				
									MR Subtotal	\$ 1,798,527.16
									MR Per Year	\$ 32,700.49
									PM Per Year	\$ 6,726.01
									Subtotal	\$ 39,426.50
									Total Per Unit	\$ 3.34

CostWorks 2009 Quarter 1 - FAC 7601-Museum

Qty	Assembly Number	Description	Total In-House	Total Incl. O&P	Zip Code Prefix	Type	Release
38.000	B2035 225 1950	Door, emergency egress, swinging, annualized	1,881.38	2,185.38	200	FMR	2008 Qtr 2
1.000	D1015 110 1950	Elevator, hydraulic, passenger / freight, annualized	2,032.95	2,369.68	200	FMR	2008 Qtr 2
3.000	D2015 800 1950	Drink fountain, annualized	148.50	178.08	200	FMR	2008 Qtr 2
6.000	D3045 160 1950	VAV Boxes, annualized	367.86	456.00	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 150 1950	Extinguishing system, wet pipe, annualized	806.79	983.35	200	FMR	2008 Qtr 2
1.000	D5015 220 1950	Circuit breaker, high voltage air, annualized	26.98	33.59	200	FMR	2008 Qtr 2
1.000	D5095 250 1950	Light, emergency, hardwired system, annualized	14.25	17.87	200	FMR	2008 Qtr 2
			\$5,694.13	\$6,726.01			

FAC 7601 Sustainment by Year - Terminal Cutoff Applied

