

FAC 7418 INDOOR SKATING RINK

FY22 SUC: \$2.71 / SF
Source: Calculated using R.S. Means CostWorks 2021 Qtr 3
component prices

FAC 7418 INDOOR SKATING RINK
SUC \$2.71

Adjusted Occurrences are the occurrences remaining after subtracting Repair/Replacement Overlaps. Overlap reduction removes a repair when it occurs the same year as a replacement.

Release 2021 Qtr 3
Zip Code Prefix 222
Type MR

UM SF
Design Life 45
Average Size 14923.0

Description	Frequency	Qty Unit	Total In-House	Total Incl OP	Design Life/Frequency	Occurrences in Design Life	Adjusted Occurrences	Life Cost	Adjusted Cost
Repair plywood paneling - (2% of walls)	10	16.00 C.S.F.	\$6,749.67	\$8,120.68	4.5000	4	4	\$32,482.73	\$32,482.73
Replace plywood paneling	30	16.00 C.S.F.	\$7,837.91	\$9,472.08	1.5000	1	1	\$9,472.08	\$9,472.08
Refinish concrete floor finished	25	12.00 C.S.F.	\$5,061.93	\$6,080.16	1.8000	1	1	\$6,080.16	\$6,080.16
Replace rubber tile floor	18	28.00 S.Y.	\$5,432.71	\$6,411.06	2.5000	2	2	\$12,822.12	\$12,822.12
Terrazzo floor repairs - (2% of floors)	15	9.02 S.F.	\$146.71	\$175.67	3.0000	3	3	\$527.02	\$527.02
Replace terrazzo floor	75	4.51 C.S.F.	\$7,017.77	\$8,379.63	0.6000	0	0	\$0.00	\$0.00
Replace acoustic tile ceiling, fire-rated	20	14.00 C.S.F.	\$7,339.20	\$8,650.41	2.2500	2	2	\$17,300.81	\$17,300.81
Replace flush valve diaphragm tankless water closet	10	8.00 Ea.	\$209.76	\$260.29	4.5000	4	4	\$1,041.15	\$1,041.15
Rebuild flush valve tankless water closet	20	8.00 Ea.	\$1,443.47	\$1,739.66	2.2500	2	2	\$3,479.31	\$3,479.31
Unplug clogged line tankless water closet	5	8.00 Ea.	\$1,747.16	\$2,185.01	9.0000	9	9	\$19,665.13	\$19,665.13
Replace tankless water closet	35	8.00 Ea.	\$10,289.77	\$11,907.96	1.2857	1	1	\$11,907.96	\$11,907.96
Replace tankless flush valve	25	8.00 Ea.	\$2,017.72	\$2,368.88	1.8000	1	1	\$2,368.88	\$2,368.88
Replace wax ring gasket for tankless water closet	5	8.00 Ea.	\$1,132.15	\$1,414.61	9.0000	9	9	\$12,731.50	\$12,731.50
Replace flush valve diaphragm for a urinal	7	4.00 Ea.	\$104.88	\$130.14	6.4286	6	6	\$780.86	\$780.86
Rebuild flush valve for a urinal	20	4.00 Ea.	\$721.74	\$869.83	2.2500	2	2	\$1,739.66	\$1,739.66
Unplug line urinal	5	4.00 Ea.	\$580.29	\$725.71	9.0000	9	9	\$6,531.41	\$6,531.41
Replace wall-hung urinal	35	4.00 Ea.	\$3,875.45	\$4,676.42	1.2857	1	1	\$4,676.42	\$4,676.42
Replace washer in spud connection lavatory, vitreous china	7	8.00 Ea.	\$131.70	\$160.64	6.4286	6	6	\$963.84	\$963.84
Replace washer in faucet lavatory, vitreous china	2	8.00 Ea.	\$103.08	\$128.41	22.5000	22	22	\$2,825.12	\$2,825.12
Replace faucets lavatory, vitreous china	10	8.00 Ea.	\$1,453.81	\$1,750.04	4.5000	4	4	\$7,000.17	\$7,000.17
Clean out strainer and P trap lavatory, vitreous china	2	8.00 Ea.	\$278.95	\$348.86	22.5000	22	22	\$7,674.99	\$7,674.99
Replace lavatory, vitreous china	35	8.00 Ea.	\$5,380.60	\$6,465.77	1.2857	1	1	\$6,465.77	\$6,465.77
Replace faucet washer sink, iron enamel	2	1.00 Ea.	\$12.78	\$15.92	22.5000	22	22	\$350.15	\$350.15
Clean trap sink, iron enamel	3	1.00 Ea.	\$8.57	\$10.72	15.0000	15	15	\$160.78	\$160.78
Replace faucets sink, iron enamel	10	1.00 Ea.	\$181.73	\$218.76	4.5000	4	4	\$875.02	\$875.02
Unstop sink, iron enamel	2	1.00 Ea.	\$41.82	\$52.30	22.5000	22	22	\$1,150.65	\$1,150.65
Replace sink, P.E.C.I. sink, iron enamel kitchen	10	1.00 Ea.	\$636.70	\$757.51	4.5000	4	4	\$3,030.04	\$3,030.04
Check / minor repairs drinking fountain	1	3.00 Ea.	\$146.65	\$183.40	45.0000	45	45	\$8,252.90	\$8,252.90
Repair internal leaks drinking fountain	4	3.00 Ea.	\$135.24	\$169.13	11.2500	11	11	\$1,860.47	\$1,860.47
Correct water pressure drinking fountain	2	3.00 Ea.	\$125.46	\$156.91	22.5000	22	22	\$3,451.95	\$3,451.95
Replace refrigerant drinking fountain	2	3.00 Ea.	\$98.05	\$114.81	22.5000	22	22	\$2,525.77	\$2,525.77
Repair drain leak drinking fountain	4	3.00 Ea.	\$101.75	\$121.60	11.2500	11	9	\$1,337.64	\$1,094.43
Replace fountain drinking fountain	10	3.00 Ea.	\$3,843.47	\$4,543.68	4.5000	4	4	\$18,174.71	\$18,174.71

Description	Frequency	Qty Unit	Total In-House	Total Incl OP	Design Life/Frequency	Occurrences in Design Life	Adjusted Occurrences	Life Cost	Adjusted Cost
Inspect / check pump / motor operation, lubricate circulation pump, 1/12 HP	0.5	1.00 Ea.	\$8.03	\$10.04	90.0000	90	90	\$903.54	\$903.54
Replace pump / motor assembly circulation pump, 1/12 HP	10	1.00 Ea.	\$1,100.58	\$1,290.00	4.5000	4	4	\$5,159.98	\$5,159.98
Unclog floor drain, PVC	20	1.00 Ea.	\$47.80	\$59.77	2.2500	2	2	\$119.55	\$119.55
General maintenance & repair drain: roof, scupper, area	1	4.00 Ea.	\$147.95	\$185.03	45.0000	45	45	\$8,326.26	\$8,326.26
Replace drain: roof, scupper, area	40	4.00 Ea.	\$3,147.73	\$3,649.44	1.1250	1	1	\$3,649.44	\$3,649.44
Repair boiler, gas, 250 MBH	7	2.00 Ea.	\$4,062.11	\$4,780.90	6.4286	6	6	\$28,685.41	\$28,685.41
Replace boiler, gas, 250 MBH	30	2.00 Ea.	\$18,796.09	\$22,420.25	1.5000	1	1	\$22,420.25	\$22,420.25
Repair cooling tower, 100 ton	10	1.00 Ea.	\$4,609.24	\$5,471.59	4.5000	4	3	\$21,886.37	\$16,414.78
Replace cooling tower, 100 ton	15	1.00 Ea.	\$22,432.71	\$25,831.13	3.0000	3	3	\$77,493.38	\$77,493.38
Repair water cooled chiller, 100 ton, reciprocating	10	1.00 Ea.	\$62,825.93	\$73,404.71	4.5000	4	2	\$293,618.85	\$146,809.43
Replace chiller, water cooled, 100 ton, reciprocating	20	1.00 Ea.	\$88,694.54	\$103,171.99	2.2500	2	2	\$206,343.98	\$206,343.98
Maintenance and repair standard suspended heater	2	8.00 Ea.	\$876.37	\$1,034.23	22.5000	22	22	\$22,752.96	\$22,752.96
Maintenance and inspection standard suspended heater	0.5	8.00 Ea.	\$630.78	\$790.28	90.0000	90	90	\$71,125.03	\$71,125.03
Replace heater standard suspended heater	15	8.00 Ea.	\$4,971.82	\$5,778.13	3.0000	3	3	\$17,334.39	\$17,334.39
Inspect sprinkler system	1	1.00 Ea.	\$34.33	\$42.93	45.0000	45	45	\$1,931.79	\$1,931.79
Replace sprinkler head	20	80.00 Ea.	\$6,841.82	\$8,415.16	2.2500	2	2	\$16,830.32	\$16,830.32
Rebuild double check 3" backflow preventer sprinkler system	1	1.00 Ea.	\$710.41	\$851.09	45.0000	45	45	\$38,299.22	\$38,299.22
Maintenance and inspection lighting panel, indoor	3	4.00 Ea.	\$162.58	\$203.69	15.0000	15	15	\$3,055.29	\$3,055.29
Maintenance and repair breaker, molded case, 480 V, 1 pole	20	10.00 Ea.	\$717.63	\$899.08	2.2500	2	2	\$1,798.16	\$1,798.16
Maintenance and inspection circuit breaker, molded case, 480 V, 1 pole	0.5	10.00 Ea.	\$323.88	\$405.78	90.0000	90	90	\$36,520.24	\$36,520.24
Replace circuit breaker molded case, 480 V, 1 pole circuit breaker	50	10.00 Ea.	\$5,482.89	\$6,387.05	0.9000	0	0	\$0.00	\$0.00
Maintenance and repair breaker, molded case, 480 V, 2 pole	20	10.00 Ea.	\$717.63	\$899.08	2.2500	2	2	\$1,798.16	\$1,798.16
Maintenance and inspection circuit breaker, molded case, 480 V, 2 pole	0.5	10.00 Ea.	\$323.88	\$405.78	90.0000	90	90	\$36,520.24	\$36,520.24
Replace circuit breaker molded case, 480 V, 2 pole circuit breaker	50	10.00 Ea.	\$12,612.73	\$14,546.84	0.9000	0	0	\$0.00	\$0.00
Repair failed breaker, molded case, 600 V, 3 pole	10	1.00 Ea.	\$372.07	\$442.63	4.5000	4	4	\$1,770.52	\$1,770.52
Maintenance and inspection circuit breaker, molded case, 600 V, 3 pole	0.33	1.00 Ea.	\$32.39	\$40.58	136.3636	136	136	\$5,518.61	\$5,518.61
Replace circuit breaker molded case, 600 V, 3 pole circuit breaker	50	1.00 Ea.	\$5,188.92	\$5,939.49	0.9000	0	0	\$0.00	\$0.00
Maintenance and repair incandescent lighting fixtures	10	5.00 Ea.	\$344.33	\$409.93	4.5000	4	2	\$1,639.70	\$819.85
Replace incandescent lighting fixture lamp	5	5.00 Ea.	\$57.41	\$69.34	9.0000	9	9	\$624.05	\$624.05
Replace incandescent lighting fixture	20	5.00 Ea.	\$702.30	\$848.83	2.2500	2	2	\$1,697.66	\$1,697.66
Replace fluorescent light fixture ballast, 80 W	10	20.00 Ea.	\$2,493.37	\$3,024.74	4.5000	4	4	\$12,098.98	\$12,098.98
Replace lamps (2 lamps), 4', 34 W energy saver	10	20.00 Ea.	\$504.28	\$631.58	4.5000	4	4	\$2,526.31	\$2,526.31

Description	Frequency	Qty Unit	Total In-House	Total Incl OP	Design Life/Frequency	Occurrences in Design Life	Adjusted Occurrences	Life Cost	Adjusted Cost
Replace metal halide ballast, 175 W	10	30.00 Ea.	\$4,454.54	\$5,349.03	4.5000	4	4	\$21,396.12	\$21,396.12
Replace metal halide fixture lamp, 175 W	5	30.00 Ea.	\$1,499.62	\$1,834.61	9.0000	9	9	\$16,511.49	\$16,511.49
Repair smoke detector	10	34.00 Ea.	\$1,917.18	\$2,370.28	4.5000	4	3	\$9,481.11	\$7,110.83
Check operation smoke detector	1	14.00 Ea.	\$226.72	\$284.05	45.0000	45	45	\$12,782.09	\$12,782.09
Replace smoke detector	15	14.00 Ea.	\$3,979.32	\$4,752.47	3.0000	3	3	\$14,257.40	\$14,257.40
Check and repair manual pull station	10	2.00 Ea.	\$175.39	\$215.66	4.5000	4	3	\$862.64	\$646.98
Replace manual pull station	15	2.00 Ea.	\$406.94	\$489.88	3.0000	3	3	\$1,469.65	\$1,469.65
Replace fire alarm bell, 6"	20	1.00 Ea.	\$194.96	\$235.28	2.2500	2	2	\$470.55	\$470.55
Replace aluminum siding, 1st floor	35	55.81 C.S.F.	\$32,612.33	\$39,271.98	1.2857	1	1	\$39,271.98	\$39,271.98
Replace aluminum siding, 2nd floor	35	52.15 C.S.F.	\$37,336.37	\$45,218.76	1.2857	1	1	\$45,218.76	\$45,218.76
Replace glass - 1st floor (1% of glass) - alum. window fixed	1	2.52 S.F.	\$30.39	\$35.71	45.0000	45	45	\$1,607.06	\$1,607.06
Repair 2'-0" x 3'-0" aluminum window - 1st floor	20	42.00 Ea.	\$6,078.94	\$7,249.58	2.2500	2	2	\$14,499.15	\$14,499.15
Replace 2'-0" x 3'-0" aluminum window - 1st floor	50	42.00 Ea.	\$20,501.53	\$24,298.02	0.9000	0	0	\$0.00	\$0.00
Replace glass - 2nd floor (1% of glass) - alum. window fixed	1	2.52 S.F.	\$267.61	\$330.30	45.0000	45	45	\$14,863.40	\$14,863.40
Repair 2'-0" x 3'-0" aluminum window - 2nd floor	20	42.00 Ea.	\$8,035.42	\$9,679.15	2.2500	2	2	\$19,358.29	\$19,358.29
Replace 2'-0" x 3'-0" aluminum window - 2nd floor	50	42.00 Ea.	\$22,458.00	\$26,727.59	0.9000	0	0	\$0.00	\$0.00
Repair steel, painted, door	14	2.00 Ea.	\$1,250.15	\$1,488.01	3.2143	3	3	\$4,464.03	\$4,464.03
Refinish 3'-0" x 7'-0" steel, painted, door	4	2.00 Ea.	\$82.80	\$101.73	11.2500	11	11	\$1,119.06	\$1,119.06
Replace 3'-0" x 7'-0" steel, painted, door	45	2.00 Ea.	\$1,410.13	\$1,639.46	1.0000	1	1	\$1,639.46	\$1,639.46
Replace tempered glass - (3% of glass) steel painted door	1	0.63 S.F.	\$14.24	\$17.01	45.0000	45	45	\$765.47	\$765.47
Prepare and refinish 3'-0" x 7'-0" steel painted. door	4	1.00 Ea.	\$80.08	\$99.00	11.2500	11	11	\$1,089.02	\$1,089.02
Replace 3'-0" x 7'-0" steel, with wire glass, door	45	1.00 Ea.	\$1,164.36	\$1,359.11	1.0000	1	1	\$1,359.11	\$1,359.11
Repair steel sliding painted door	14	1.00 Ea.	\$388.15	\$470.11	3.2143	3	3	\$1,410.34	\$1,410.34
Repair 12' x 12' steel roll-up door	10	1.00 Ea.	\$675.90	\$802.22	4.5000	4	4	\$3,208.87	\$3,208.87
Refinish 12' x 12' steel roll-up door	5	1.00 Ea.	\$203.45	\$249.19	9.0000	9	9	\$2,242.70	\$2,242.70
Replace 12' x 12' steel roll-up door	35	1.00 Ea.	\$2,703.58	\$3,208.87	1.2857	1	1	\$3,208.87	\$3,208.87
Non-destructive moisture inspection, modified bituminous/thermoplastic	5	17.40 M.S.F.	\$2,033.29	\$2,480.00	9.0000	9	9	\$22,320.03	\$22,320.03
Minor thermoplastic membrane repairs, 2% of roof area	1	1.20 Sq.	\$389.33	\$463.26	45.0000	45	45	\$20,846.58	\$20,846.58
Flashing repairs, 2 S.F. per sq. repaired, modified bitumen/thermoplastic	1	6.01 S.F.	\$23.16	\$27.72	45.0000	45	45	\$1,247.19	\$1,247.19
Membrane replacement-(25% of roof area),modified bitum/thermoplastic	20	4.30 Sq.	\$3,369.34	\$4,023.54	2.2500	2	2	\$8,047.08	\$8,047.08
Total roof replacement, modified bituminous / thermoplastic	25	140.00 Sq.	\$88,722.04	\$105,289.74	1.8000	1	1	\$105,289.74	\$105,289.74
Repair plate glass interior wall - (2% of total)	25	3.50 C.S.F.	\$40,473.25	\$46,486.09	1.8000	1	1	\$46,486.09	\$46,486.09
Repair steel painted interior door	14	4.00 Ea.	\$1,173.81	\$1,366.26	3.2143	3	3	\$4,098.77	\$4,098.77

Description	Frequency	Qty Unit	Total In-House	Total Incl OP	Design Life/Frequency	Occurrences in Design Life	Adjusted Occurrences	Life Cost	Adjusted Cost	
Refinish 3'-0" x 7'-0" steel painted interior door	4	4.00 Ea.	\$210.34	\$259.15	11.2500	11	11	\$2,850.60	\$2,850.60	
Replace 3'-0" x 7'-0" steel painted interior door	60	4.00 Ea.	\$4,872.14	\$5,648.33	0.7500	0	0	\$0.00	\$0.00	
Repair solid core wood door, interior	11	8.00 Ea.	\$2,347.62	\$2,732.51	4.0909	4	4	\$10,930.05	\$10,930.05	
Refinish 3'-0" x 7'-0" solid core wood door, interior	4	8.00 Ea.	\$346.92	\$426.00	11.2500	11	10	\$4,685.97	\$4,259.97	
Replace 3'-0" x 7'-0" solid core wood door, interior	40	8.00 Ea.	\$3,915.42	\$4,526.48	1.1250	1	1	\$4,526.48	\$4,526.48	
Replace metal lockers, single tier	20	20.00 Ea.	\$6,793.09	\$7,858.74	2.2500	2	2	\$15,717.47	\$15,717.47	
Repair 5/8" drywall - (2% of walls)	20	20.00 S.F.	\$33.51	\$40.77	2.2500	2	2	\$81.54	\$81.54	
			\$627,214.45	\$740,513.39				MR Subtotal	\$1,475,484.06	
									MR Per Year	\$32,682.29
									PM Total	\$7,768.96
									Subtotal	\$40,451.25
									Total Per Unit	\$2.71

FAC 7418 INDOOR SKATING RINK

SUC \$2.71

Release 2021 Qtr 3

UM SF

Zip Code Prefix 222

Design Life 45

Type PM

Average Size 14923.0

Description	Qty	Labor Hours	Bare Mat	Bare Labor	Bare Equip	Bare Total	Total In-House	Total Incl OP
Door, emergency egress, swinging, annualized	6.00	1.56	\$87.55	\$64.50	\$0.00	\$152.05	\$180.15	\$212.63
Door, overhead, electric, roll up, to 24' high x 25' wide, annualized	1.00	4.07	\$40.96	\$168.81	\$0.00	\$209.77	\$264.51	\$321.30
Fire doors, swinging, annualized	4.00	1.57	\$57.28	\$58.23	\$0.00	\$115.52	\$138.71	\$164.77
Urinals, annualized	4.00	0.91	\$25.27	\$45.81	\$0.00	\$71.09	\$87.36	\$104.89
Toilet (vacuum breaker type), annualized	8.00	1.42	\$67.53	\$71.18	\$0.00	\$138.72	\$166.83	\$198.31
Lavatories, annualized	8.00	2.78	\$47.72	\$165.63	\$0.00	\$213.35	\$267.81	\$324.65
Drink fountain, annualized	3.00	1.86	\$62.18	\$93.83	\$0.00	\$156.00	\$190.37	\$227.84
Boiler, hot water, oil, gas, or comb. fired, 120 - 500 MBH, annualized	1.00	15.88	\$77.34	\$947.08	\$0.00	\$1,024.42	\$1,316.27	\$1,612.00
Water cooling tower, 50 thru 500 tons, annualized	1.00	9.91	\$157.72	\$599.08	\$0.00	\$756.80	\$952.29	\$1,155.67
Chiller, recip., water cooled, over 50 tons, annualized	1.00	10.91	\$17.79	\$656.35	\$0.00	\$674.14	\$872.82	\$1,072.39
Compressor, DX refrigeration, 25 to 100 tons, annualized	2.00	6.51	\$64.70	\$392.93	\$0.00	\$457.63	\$581.98	\$709.56
Fan, axial, up to 5,000 CFM, annualized	2.00	2.49	\$23.46	\$125.10	\$0.00	\$148.56	\$188.43	\$229.48
Backflow prevention device, up to 4", annualized	1.00	0.33	\$13.40	\$19.82	\$0.00	\$33.22	\$40.50	\$48.46
Extinguishing system, wet pipe, annualized	1.00	11.34	\$68.24	\$678.37	\$0.00	\$746.61	\$956.95	\$1,170.70
Panelboard, 225 A and above, annualized	1.00	0.44	\$23.20	\$29.01	\$0.00	\$52.21	\$63.23	\$75.41
Motor control center, over 400 A, annualized	2.00	0.78	\$46.39	\$51.80	\$0.00	\$98.19	\$118.37	\$140.87
						\$5,048.26	\$6,386.59	\$7,768.96

FAC 7418 INDOOR SKATING RINK
Modeled Component List
CostWorks Release 2021 Qtr 3

C30 Interior Finishes

Plywood Paneling	16.0 C.S.F.
Concrete, Finished	12.0 C.S.F.
Rubber Tile	28.0 S.Y.
Terrazzo	4.51 C.S.F.
Acoustic Tile, fire-rated	14.0 C.S.F.

D20 Plumbing

Tankless Water Closet	8.0 Ea.
Urinal	4.0 Ea.
Lavatory, Vitreous China	8.0 Ea.
Sink, Iron Enamel	1.0 Ea.
Drinking Fountain	3.0 Ea.
Circulation Pump, 1/12 HP	1.0 Ea.
Drain: Roof, Scupper, Area	4.0 Ea.

D30 HVAC

Boiler, Gas, 250 MBH	2.0 Ea.
Cooling Tower, 100 ton	1.0 Ea.
Chiller, Water Cooled, Reciprocating, 100 ton	1.0 Ea.
Standard Suspended Heater	8.0 Ea.

D40 Fire Protection

Sprinkler System, Fire Suppression, sprinkler head	80.0 Ea.
Sprinkler System, Fire Suppression, 3" backflow preventer	1.0 Ea.

D50 Electrical

Load Center, 100 A, maintenance & inspection	4.0 Ea.
Circuit Breaker, molded case, 480 V, 1 pole	10.0 Ea.
Circuit Breaker, molded case, 600 V, 3 pole	1.0 Ea.
Incandescent Lighting Fixtures	5.0 Ea.
Smoke Detector	14.0 Ea.
Manual Pull Station	2.0 Ea.
Fire Alarm Bell	1.0 Ea.

B20 Exterior Enclosure

Aluminum Siding, 1st floor	55.81 C.S.F.
Aluminum Siding, 2nd floor	52.15 C.S.F.
Aluminum Window, Fixed, 1st floor	42.0 Ea.
Aluminum Window, Fixed, 2nd floor	42.0 Ea.
Steel, Painted	2.0 Ea.
Steel, Painted, w/ wire glass	1.0 Ea.
Steel Single, Roll-Up	1.0 Ea.

B30 Roofing

Modified Bituminous / Thermoplastic	140.0 Sq.
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C10 Interior Construction

Steel Painted Interior Doors	4.0 Ea.
Solid Core Interior Doors	8.0 Ea.
Metal Lockers	20.0 Ea.
Fire Doors, Swinging, annualized	4.0 Each

FAC 7418 INDOOR SKATING RINK
Sustainment by Year
CostWorks Release 2021 Qtr 3

