

#	Part Name	Part Description	Quantity	Unit Cost (US\$)	Extended Cost (US\$)	Notes / Function
1	14 AWG Stranded Wire (Red)	Stranded copper hookup wire, 14 AWG	50 ft	\$0.75 / ft	\$37.50	High-current positive distribution
2	14 AWG Stranded Wire (Black)	Stranded copper hookup wire, 14 AWG	24 ft	\$0.75 / ft	\$18.00	High-current ground distribution
3	20 AWG Solid-Core Wire	Solid-core copper wire for signal routing	~5 ft	\$0.30 / ft	\$1.50	Low-current control and logic wiring
4	Arcity Multi-Output Power Supply	AC-DC power supply with 5 V, 12 V, and 5 A	1	\$45.00	\$45.00	Primary system power source
5	Abort Switch	Panel-mounted emergency stop / kill switch	1	\$12.00	\$12.00	Manual system shutdown
6	NEMA 5-15 Power Connector	Standard grounded AC power inlet	1	\$6.00	\$6.00	Interface to wall power
7	Outdoor Junction Box	Weather-resistant electrical enclosure	1	\$30.00	\$30.00	Houses power distribution hardware
8	Fuse Box (4-slot)	DIN-mounted fuse holder	2	\$12.00	\$24.00	Overcurrent protection per rail
9	2 A Blade Fuses	Replaceable automotive-style fuses	8	\$1.00	\$8.00	Circuit protection
10	DIN Rail Terminal Blocks	Individual terminal junctions	12	\$2.00	\$24.00	Organized wire termination
11	DIN Rail	Standard 35 mm DIN rail, ~ 8 in	1	\$8.00	\$8.00	Mounting structure for terminals
12	Mounting Screws	Assorted machine screws	5	\$0.50	\$2.50	Mechanical mounting
13	Servo Motor	Standard hobby servo	1	\$15.00	\$15.00	Spillway gate actuation
14	Solenoid Valve	Electrically actuated water valve	1	\$18.00	\$18.00	Reservoir flow control
15	Water Pump	Low-voltage DC water pump	1	\$20.00	\$20.00	Water circulation
16	Heating Element	Resistive heating element	1	\$25.00	\$25.00	Snowmelt simulation
17	Polyethylene Tubing	Flexible water tubing	~10 ft	\$1.50 / ft	\$15.00	Fluid transport
18	Styrofoam Boards	Rigid foam insulation boards	~6 ft × 4 ft	\$25.00	\$25.00	Physical terrain modeling
19	PVC Pipe	Rigid PVC pipe	~3 ft	\$5.00	\$5.00	Drainage and flow routing
20	Metal Wire Shelving Rack	Steel wire shelving unit	1	\$60.00	\$60.00	Structural support for model
21	Mega 2560 R3 ATmega2560	Microcontroller board	1	\$27.99	\$27.99	HMI
22	sainsmart TFT_320QVTT	screen TFT LCD	1	\$24.10	\$24.10	HMI
23	H2W	PCB	5	\$4.80	\$24.00	PCB components
24	Capacitor_SMD:C_0805_2012_10uF		2	\$0.70	\$1.40	PCB components
25	Capacitor_SMD:C_0805_2012_1uF		2	\$0.70	\$1.40	PCB components
26	Capacitor_SMD:C_0805_2012_1uF		2	\$1.39	\$2.78	PCB components
27	LED_SMD:LED_0805_2012_1W	LED	3	\$0.10	\$0.30	PCB components
28	Diode_SMD:D_SOD-123	1N4148	1	\$1.72	\$1.72	PCB components
29	Pinheader	SDA	2	\$1.72	\$3.44	PCB components
30	Pinheader	SCL	2	\$1.72	\$3.44	PCB components
31	Pinheader	Debug 0	2	\$1.72	\$3.44	PCB components
32	Pinheader	Debug 1	2	\$1.72	\$3.44	PCB components
33	Pinheader	Debug 2	2	\$1.72	\$3.44	PCB components
34	Pinheader	Debug 3	2	\$1.72	\$3.44	PCB components
35	Pinheader	Debug 4	2	\$1.72	\$3.44	PCB components
36	Pinheader	Debug 5	2	\$1.72	\$3.44	PCB components
37	Pinheader	Debug 6	2	\$1.72	\$3.44	PCB components
38	Pinheader	Debug 7	2	\$0.86	\$1.72	PCB components
39	Connector_PinHeader_2.54mm	PWM PWR	1	\$2.61	\$2.61	PCB components
40	TerminalBlock:TerminalBlock	Power	1	\$0.86	\$0.86	PCB components
41	Connector_PinHeader_2.54mm	AN_0	1	\$0.86	\$0.86	PCB components
42	Connector_PinHeader_2.54mm	AN_1	1	\$0.86	\$0.86	PCB components
43	Connector_PinHeader_2.54mm	AN_2	1	\$0.86	\$0.86	PCB components
44	Connector_PinHeader_2.54mm	AN_3	1	\$0.86	\$0.86	PCB components
45	Connector_PinHeader_2.54mm	Port A	1	\$0.86	\$0.86	PCB components
46	Connector_PinHeader_2.54mm	Port B	1	\$0.86	\$0.86	PCB components
47	Connector_PinHeader_2.54mm	Port C	1	\$0.86	\$0.86	PCB components
48	Connector_PinHeader_2.54mm	PWM1	1	\$0.86	\$0.86	PCB components
49	Connector_PinHeader_2.54mm	PWM2	1	\$0.86	\$0.86	PCB components
50	Connector_PinHeader_2.54mm	PWM3	1	\$0.86	\$0.86	PCB components
51	Connector_PinHeader_2.54mm	PWM4	1	\$0.86	\$0.86	PCB components
52	Connector_PinHeader_2.54mm	Program	1	\$0.86	\$0.86	PCB components
53	Connector_PinHeader_2.54mm	USART	1	\$0.86	\$0.86	PCB components
54	Connector_PinHeader_2.54mm	I2C	2	\$0.86	\$1.72	PCB components
55	Connector_PinHeader_2.54mm	5V	1	\$0.86	\$0.86	PCB components
56	Connector_PinHeader_2.54mm:PinHeader_1x02_P2.54mm_Vertical		1	\$0.86	\$0.86	PCB components
57	Connector_PinHeader_2.54mm	VCC_PWM Disc	1	\$0.86	\$0.86	PCB components
58	Connector_PinHeader_2.54mm	Regulator Bypass	1	\$0.18	\$0.18	PCB components
59	Resistor_SMD:R_0805_2012_2.2k		1	\$0.22	\$0.22	PCB components
60	Resistor_SMD:R_0805_2012_4.7k		20	\$0.12	\$2.40	PCB components
61	Resistor_SMD:R_0805_2012_10k		1	\$0.95	\$0.95	PCB components
62	Package_TO_SOT_SMD:SC_TSB1117-33		1	\$5.00	\$5.00	PCB components
63	Package_SO:SSOP-28_5.3x PIC16F1788-xSS		1	\$2.50	\$2.50	PCB components
64	Crystal:Crystal_HC49-U_Ver	Crystal	1	\$2.72	\$2.72	PCB components
65	DMG3402L-7	FET	8	\$2.72	\$21.76	PCB components
					\$570.55	TOTAL