Power Budget

Team Number:	202	Project Name:	Hydroelectric Dam		Frank Wade
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			Supply		Absolute	Total	
All Major	Component		Voltage		Maximum	Current	
Components	Name	Part Number	Range	#	Current (mA)	(mA)	Unit
	Motor Driver	IFX9201SGAUMA	5V to 36V	2	13	26	mA
	3.3V Regulator	LM2575D2T	4.75V-40V	1	1000	1000	mA
	Microcontroller	PIC18F47Q10	1.8V-5.5V	1	50	50	mA
	Stepper Motor	26M048B1B	5V-12V	1	250	250	mA
<mark>B. Assign eac</mark>	│ <mark>·h major compor</mark>	n <mark>ent above to ONE</mark>	•	. Try to r	minimize the numbe		er rails
+5V Power	Component		Supply Voltage		Absolute Maximum	Total Current	
Rail	Name	Part Number	Range	#	Current (mA)	/ 4\	Unit
				••	Current (IIIA)	(mA)	Unit
	Stepper Motor	26M048B1B	5V-12V	1	250	(mA) 250	
	Stepper Motor	26M048B1B		1	` '	250	
	Stepper Motor	26M048B1B		1	` '	250 0	mA
	Stepper Motor	26M048B1B		1	` '	250 0 0	mA mA
	Stepper Motor	26M048B1B		1	` '	250 0 0	mA mA
	Stepper Motor	26M048B1B		1	` '	250 0 0	mA mA mA mA
	Stepper Motor	26M048B1B		1	250 Subtotal	250 0 0 0	mA mA mA mA
	Stepper Motor	26M048B1B	5V-12V	1	250	250 0 0 0 0 0 250	mA mA mA mA mA mA
22. Regulator	Stepper Motor (+)3.3V Regulator		5V-12V	1	Subtotal Safety Margin	250 0 0 0 0 250 25%	mA mA mA mA mA mA

Component	Seed All codes	Supply Voltage	ш	Absolute Maximum	Total Current	l lmit
				` '	, ,	Unit
Microcontroller	PIC18F47Q10	1.8V-5.5V	1	50		
<u> </u>						mA
<u> </u>						mA
	Subtotal					mA
				Safety Margin		
		Total Curre	nt Requ	uired on +3.3V Rail	95	mA
<u> </u>						
(+)3.3V Regulator	1		1			
	To	otal Remaining Curre	ent Ava	ilable on 3.3V Rail	905	mA
-		all supply or battery)		-		
Component Name	Part Number	upplyVoltageRange	Outpu	eMaximumCurrent	otalCurrent(mA)	Unit
-	Part Number			-		Unit
Component Name	Part Number	upplyVoltageRange	Outpu	eMaximumCurrent	otalCurrent(mA) 27000	Unit
Component Name	Part Number	upplyVoltageRange	Outpu	eMaximumCurrent	otalCurrent(mA) 27000	Unit mA mA
Component Name Plug-in Wall Sup	Part Number Model:0930	ipplyVoltageRange 100-240V	Outpu 9	eMaximumCurrent 3000	otalCurrent(mA) 27000 0 1000	Unit mA mA
Component Name Plug-in Wall Sup 3.3V Regulator	Part Number Model:0930 LM2575D2T	ipplyVoltageRange 100-240V	Outpu 9	eMaximumCurrent 3000 1000	otalCurrent(mA) 27000 0 1000	MA mA mA mA mA
Plug-in Wall Sup 3.3V Regulator	Part Number Model:0930 LM2575D2T otal Remaining C	100-240V 4.75V-40 Current Available on	Outpu 9 1 Extern	eMaximumCurrent 3000 1000 al Power Source 1	0 1000 0 26000	MA MA MA MA MA MA
Component Name Plug-in Wall Sup 3.3V Regulator	Part Number Model:0930 LM2575D2T otal Remaining C	100-240V 4.75V-40 Current Available on	Outpu 9 1 Extern	eMaximumCurrent 3000 1000 al Power Source 1 eMaximumCurrent	0 26000 otalCurrent(mA)	MA mA mA mA mA mA mA mA mA mA mA
Plug-in Wall Sup 3.3V Regulator	Part Number Model:0930 LM2575D2T otal Remaining C	100-240V 4.75V-40 Current Available on	Outpu 9 1 Extern	eMaximumCurrent 3000 1000 al Power Source 1	0 1000 0 26000	MA mA mA mA mA mA mA mA mA mA mA
Plug-in Wall Sup 3.3V Regulator	Part Number Model:0930 LM2575D2T otal Remaining C	100-240V 4.75V-40 Current Available on	Outpu 9 1 Extern	eMaximumCurrent 3000 1000 al Power Source 1 eMaximumCurrent	0 27000 0 1000 0 26000 otalCurrent(mA) 9900	MA
Plug-in Wall Sup 3.3V Regulator	Part Number Model:0930 LM2575D2T otal Remaining C	100-240V 4.75V-40 Current Available on	Outpu 9 1 Extern	eMaximumCurrent 3000 1000 al Power Source 1 eMaximumCurrent	0 27000 0 1000 0 26000 otalCurrent(mA) 9900	MA mA mA mA mA mA mA mA mA mA mA
Component Name Plug-in Wall Sup 3.3V Regulator Component Name	Part Number Model:0930 LM2575D2T Dtal Remaining C Part Number	100-240V 4.75V-40 Current Available on upplyVoltageRange 9V	Outpu 9 1 Extern Outpu 3.3	eMaximumCurrent 3000 1000 al Power Source 1 eMaximumCurrent 3000	0 27000 0 1000 0 26000 otalCurrent(mA) 9900	MA
Component Name Plug-in Wall Sup 3.3V Regulator Component Name	Part Number Model:0930 LM2575D2T Dtal Remaining C Part Number	100-240V 4.75V-40 Current Available on	Outpu 9 1 Extern Outpu 3.3	eMaximumCurrent 3000 1000 al Power Source 1 eMaximumCurrent 3000	0 27000 0 1000 0 26000 otalCurrent(mA) 9900	MA
	Name Motor Driver Microcontroller (+)3.3V Regulator	Name Part Number Motor Driver IFX9201SGAUMA Microcontroller PIC18F47Q10 (+)3.3V Regulator LM2575D2T	Component Name Part Number Range Motor Driver IFX9201SGAUMA 5V to 30V Microcontroller PIC18F47Q10 1.8V-5.5V Total Curre (+)3.3V Regulator LM2575D2T 4.75V-40V Total Remaining Curre	Component Name Part Number Range # Motor Driver IFX9201SGAUMA 5V to 30V 2 Microcontroller PIC18F47Q10 1.8V-5.5V 1 Total Current Requirement (+)3.3V Regulator IM2575D2T 4.75V-40V 1 Total Remaining Current Available (1) Total Remaining (1) Total Remaining (1)	Component Name Part Number Range # Current (mA) Motor Driver IFX9201SGAUMA 5V to 30V 2 13 Microcontroller PIC18F47Q10 1.8V-5.5V 1 50 Subtotal Safety Margin Total Current Required on +3.3V Rail (+)3.3V Regulator LM2575D2T 4.75V-40V 1 1000 Total Remaining Current Available on 3.3V Rail	Component Name Part Number Range # Current (mA) Current (mA) Motor Driver IFX9201SGAUMA 5V to 30V 2 13 26 Microcontroller PIC18F47Q10 1.8V-5.5V 1 50 50 0 0 0 0 0 0 Subtotal 76

Notes	

External Supply Voltage should be determined by the dropout voltage for highest-voltage regulator (e.g., +14V for a +12V If you have multiple units in your design (e.g., a base unit and remote unit) then you need a separate power budget for each