Team Light the Way

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Objective / Background

Many crosswalk signs across campus lack flashing safety lights around or near the signs to alert drivers of pedestrians crossing, our project wants to improve this.

Value Proposition

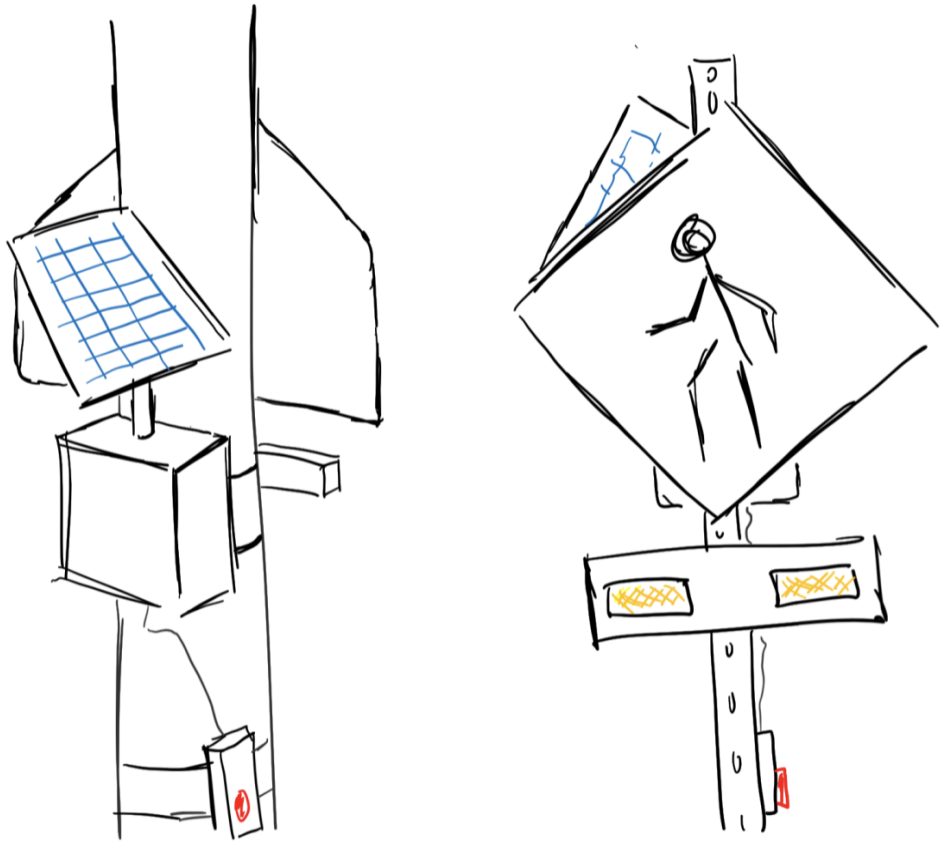
What are the alternatives?

Why does this project matter?

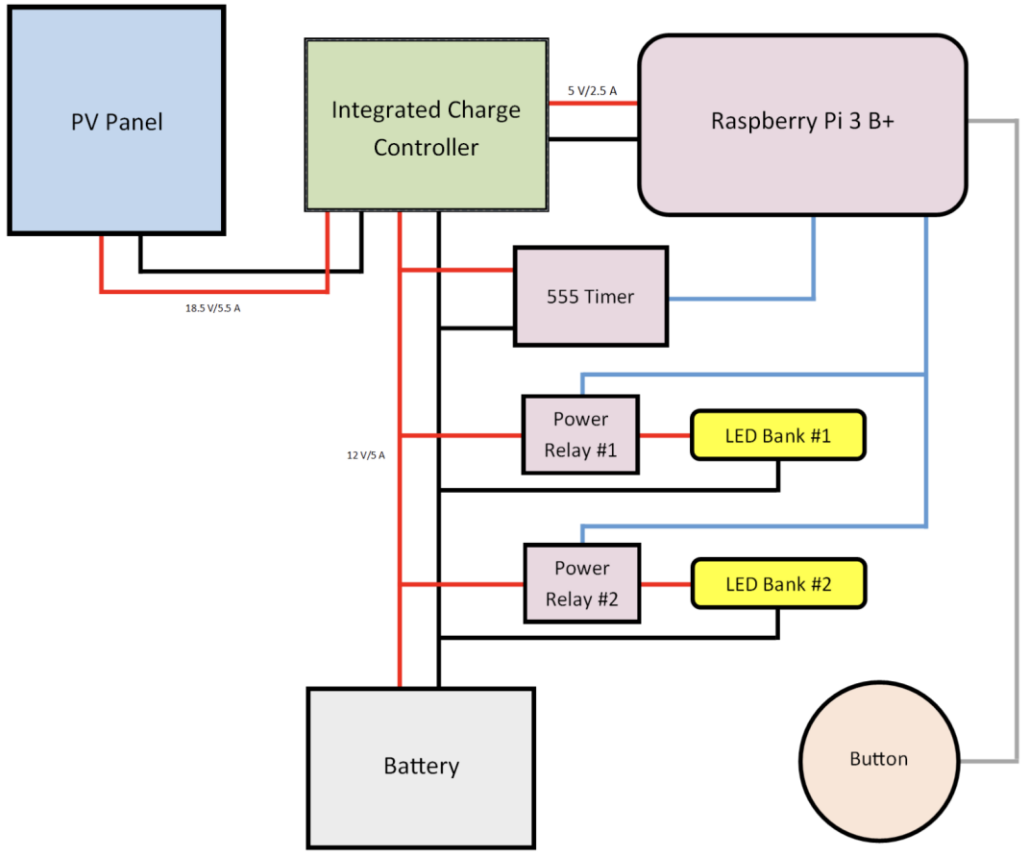
Why do we care?

System Design: I.R.R.I.S

Concept Sketch



Wiring Design

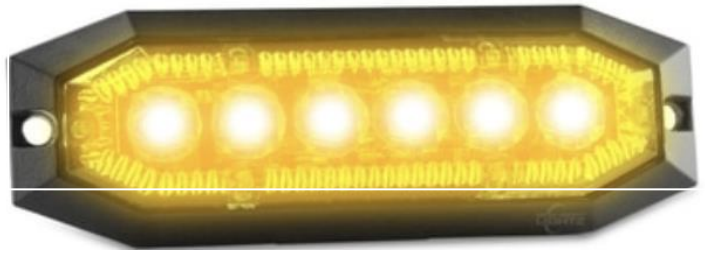


System Design: Signpost Attachments

- Enclosure
- Tabs for metal posts
- Rings for round poles

System Design: Lighting

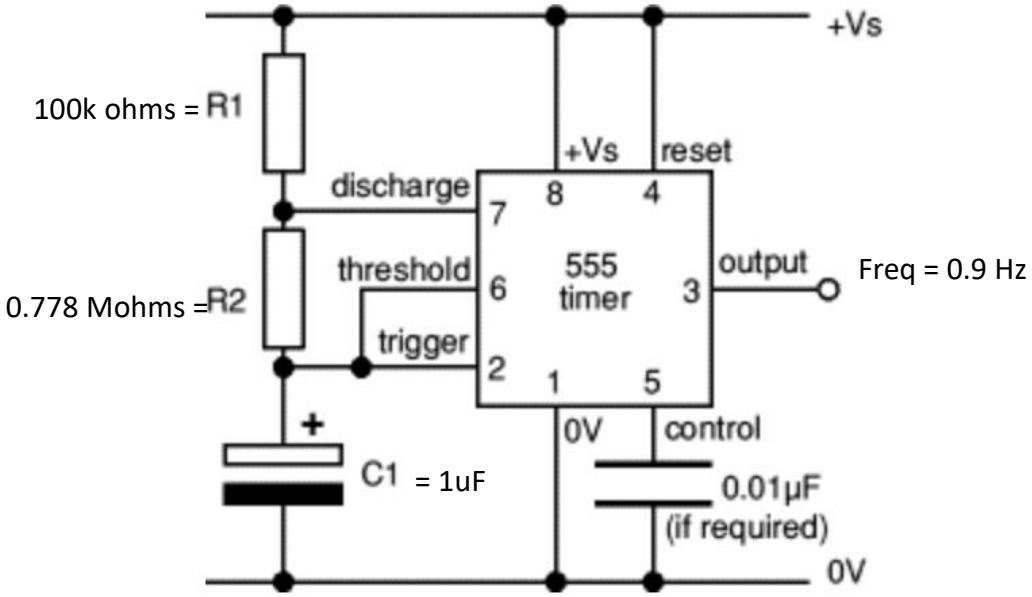
- LEDs



System Design: continued

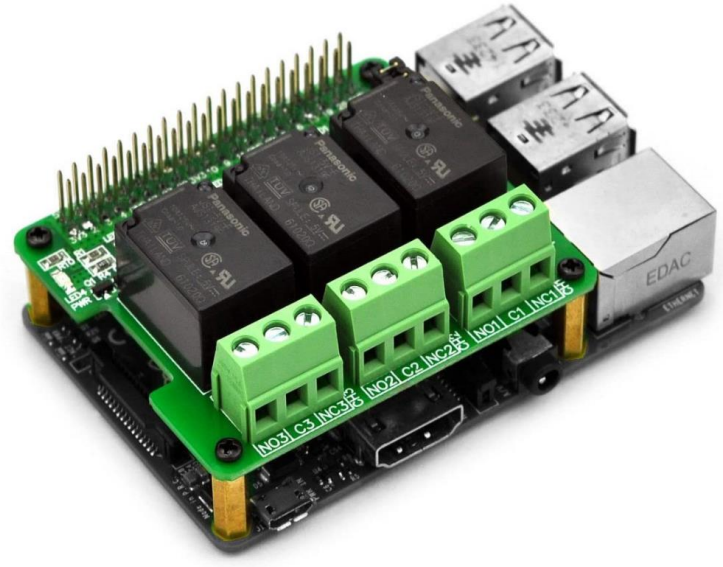
555 Timer

- Astable Mode



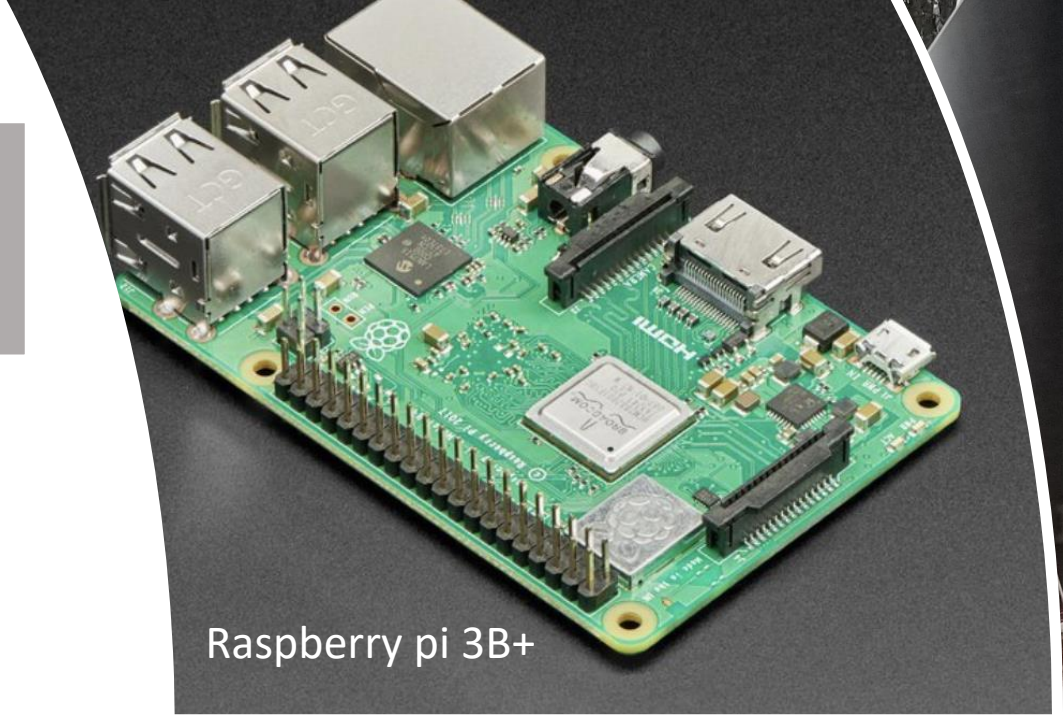
Power Relay

- Switch for the LEDs

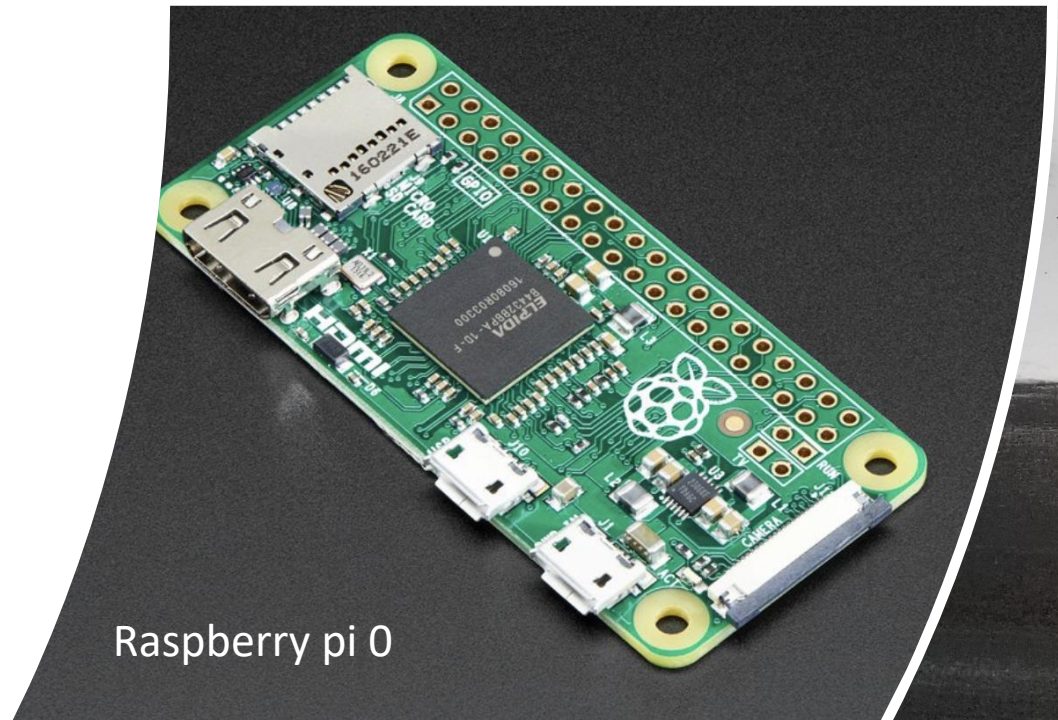


System Design: Signal Transmission

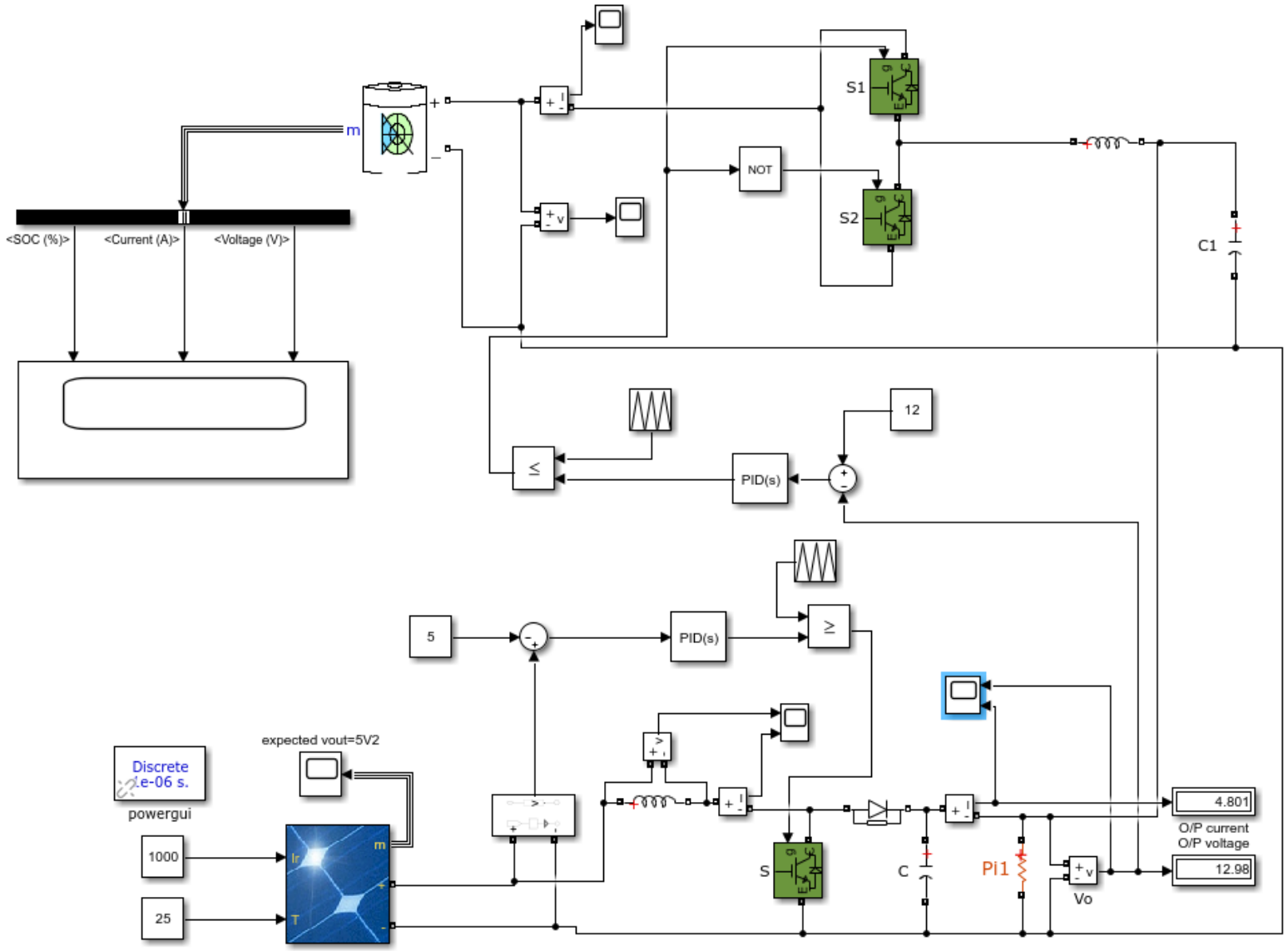
- Raspberry pi 3B+
- Raspberry pi 0
- Wifi



Raspberry pi 3B+



Raspberry pi 0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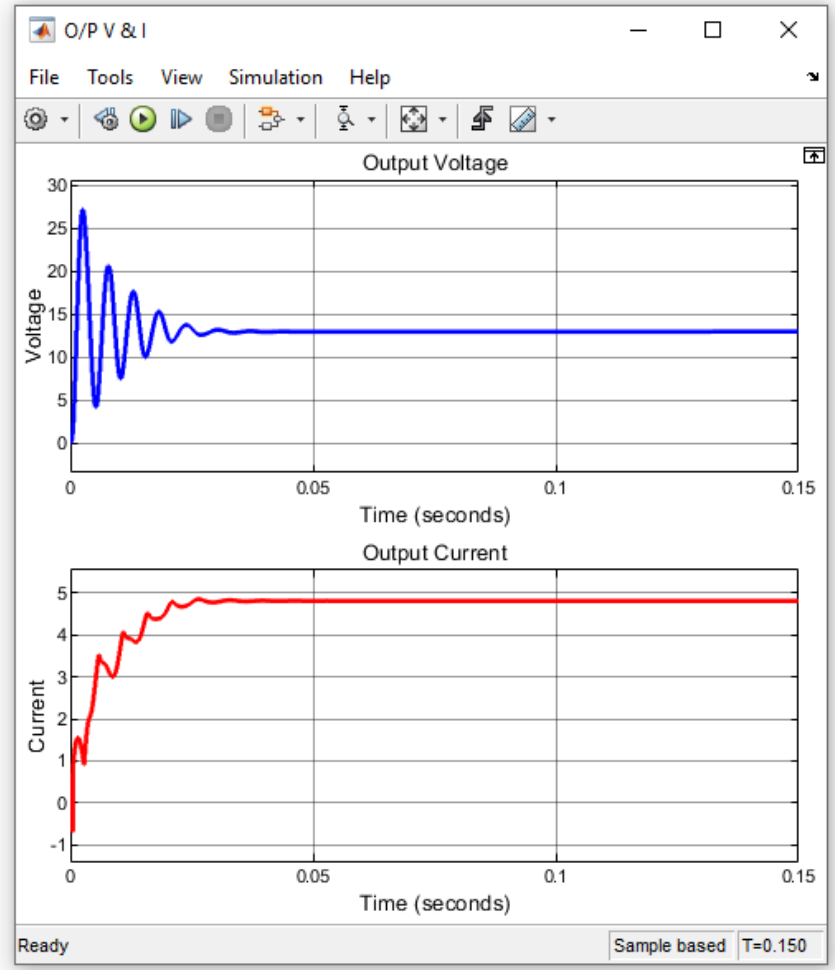
S1
S2
NOT
C1
12
PID(s)
5
PID(s)
expected vout=5V2
Discrete
e-06 s.
powergui
1000
25
lr
T
m
S
C
Pi1
Vo
4.801
O/P current
O/P voltage
12.98


O/P V & I
File
Tools
View
Simulation
Help
Output Voltage
Voltage
Time (seconds)
Output Current
Current
Time (seconds)
Ready
Sample based
T=0.150

What's Happening Now

- Make vs. Buy
- Location
- Costs

Bill of Materials

Team Light The Way				
Item	**Description**	**Purpose**	**Quantity**	**Cost**
Solar Panel	12V/24V PV Panel	Energy Generation	1	$35.22
Battery	12V/10 Li	Energy Storage	1	$79
LEDs	2 LEDs mounted to bar	Cautionary Flashing Lights	2	$50.40
Integrated Charge Controller (ICC)	Regulate PV output	Regulates PV Output	1	$15.99
Microcontoller	Raspberyy Pi 3B+	Broadcasting Unit for transceiving	1	$43
Microcontoller	Raspberyy Pi 0	Paired Unit for transceiving	1	$13
Button	Crosswalk Grade	Signals	1	$10
Enclosure + Mole Mount	NEMA 4x, IP66	Houses Controller, Battery, ICC	1	$116.06
Wiring			1	$50
Mounting Gear	Nuts, Bolts, Washers	Attach enclosure to square post	4	$10
555 Timer	Timers and support	Astable mode for our LED	1	$5.50
Power Relay	Switch	Turning LEDs on and off	2	$30

Total	$458.17

Design Validation Plan	Possible Risks
Simulations	Time / Schedule
Testing	Compatibility

Thank you for listening!

Questions?