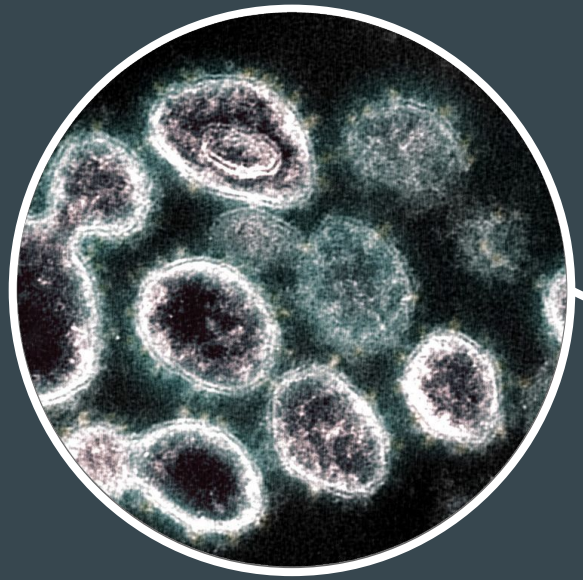
T.L-Aura

Traffic Light Cleanser

Surface Transmission

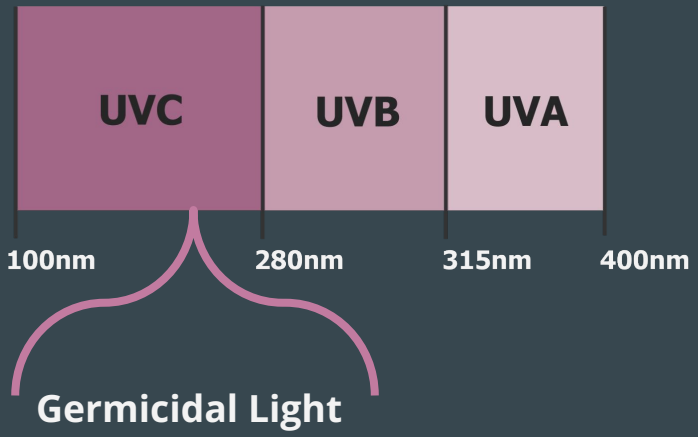
- High touch surfaces
- The effect of Covid-19
- Stainless steel: COVID typically survives 3 days
- No current effective cleaning solutions

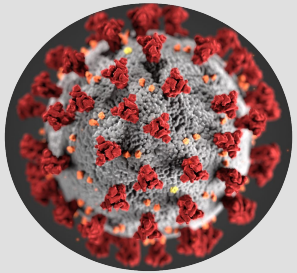


The Power of UV-C

UV-C is a part of the ultraviolet spectrum that can penetrate pathogen DNA - making it an effective germicide

Ultraviolet Spectrum

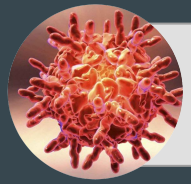




COVID-19:
99.7% of COVID-19 can be killed using a **5 mJ/cm^2** dose of UV-C light

Also Effective Against:

Bacteria



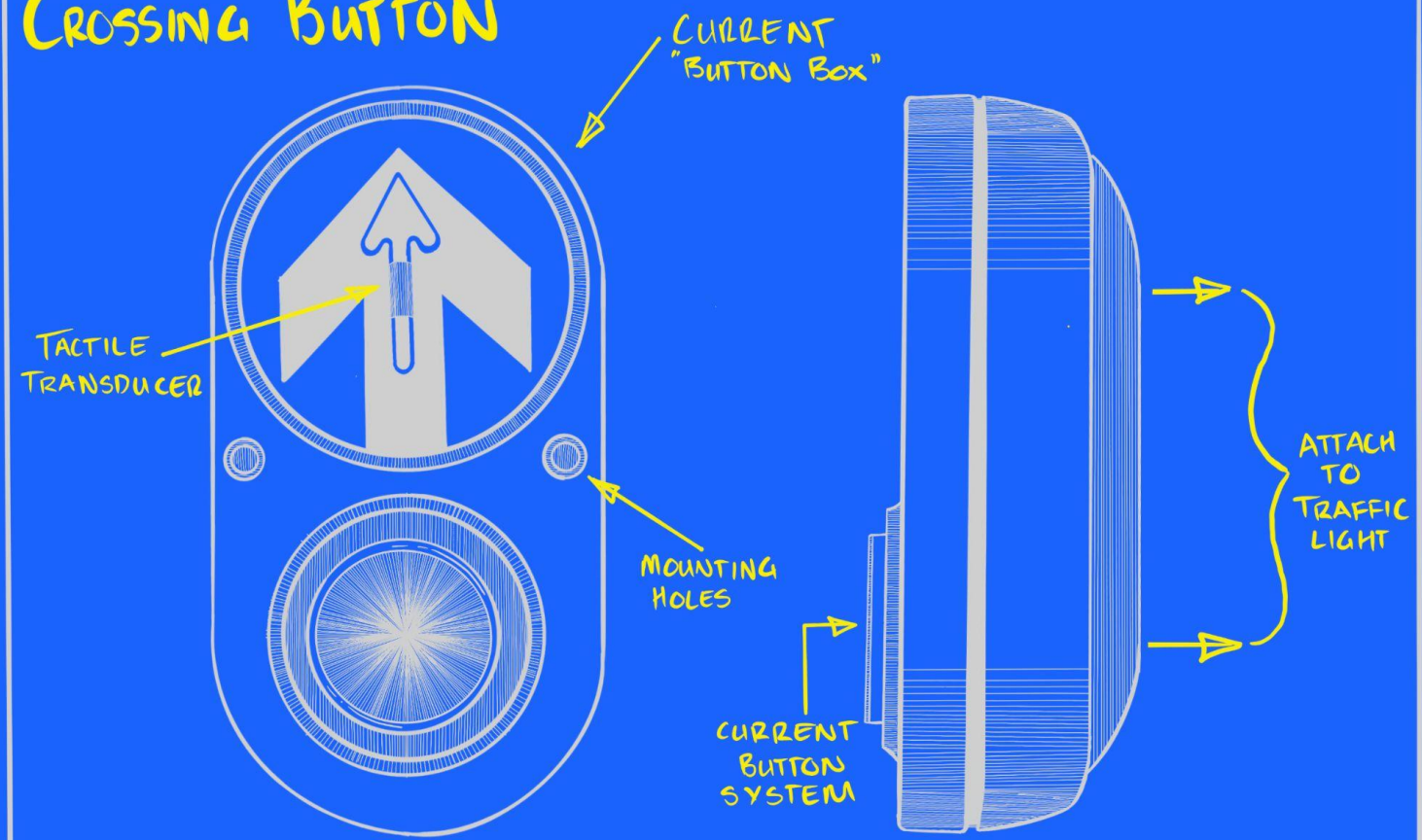
Other Viruses

Superbugs

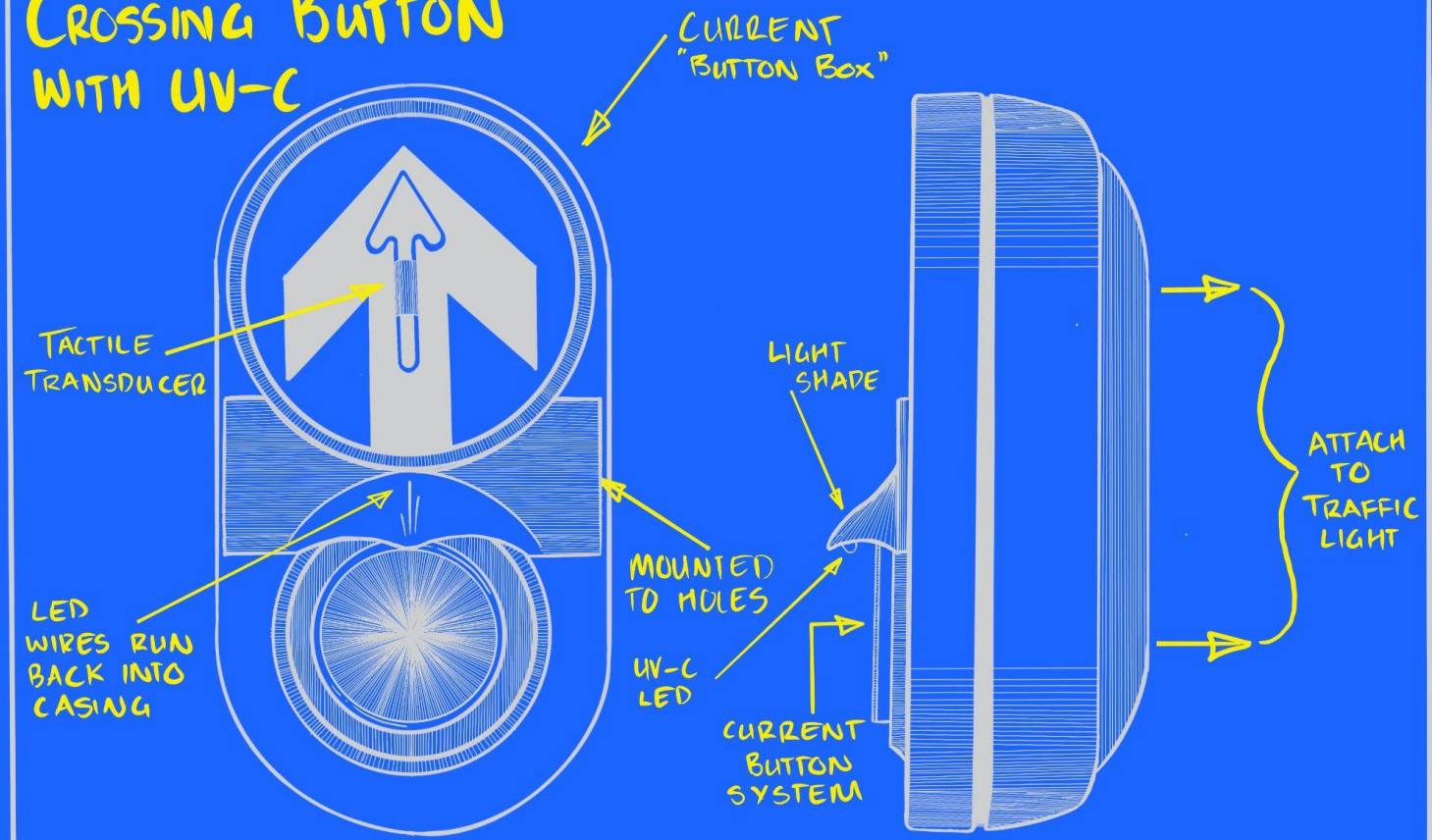
Solution to the Problem: T.L-Aura

- Shine UV-C over the button
  - The light will be activated when the walk cycle begins
  - The light is directed over the button itself. Its electronic components are hidden away inside the casing
  - The UV-C shines on the button killing almost all of COVID-19 and other bacteria.

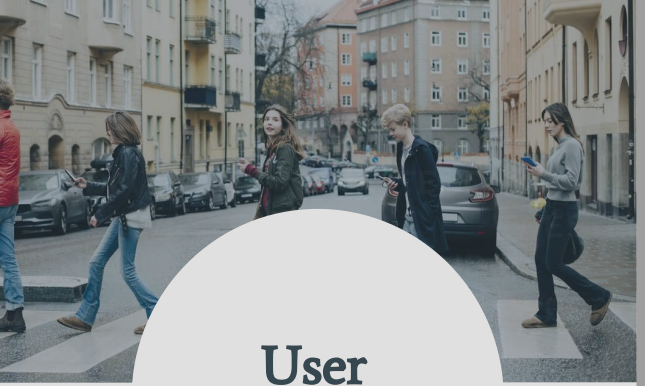
Crossing Button



Crossing Button with UV-C



Design Benefits



User Friendly

- Same user Experience
- Can press button lots (even out of frustration)
- Its like its not even there

Durabile

- Current buttons are tried and tested in robustness
- Solid Hood construction
- LED rated for 10,000 hrs

Cost Effective

- Simple retrofit
- Low Production Cost
- Low power
- Robustness of design promises low maintenance

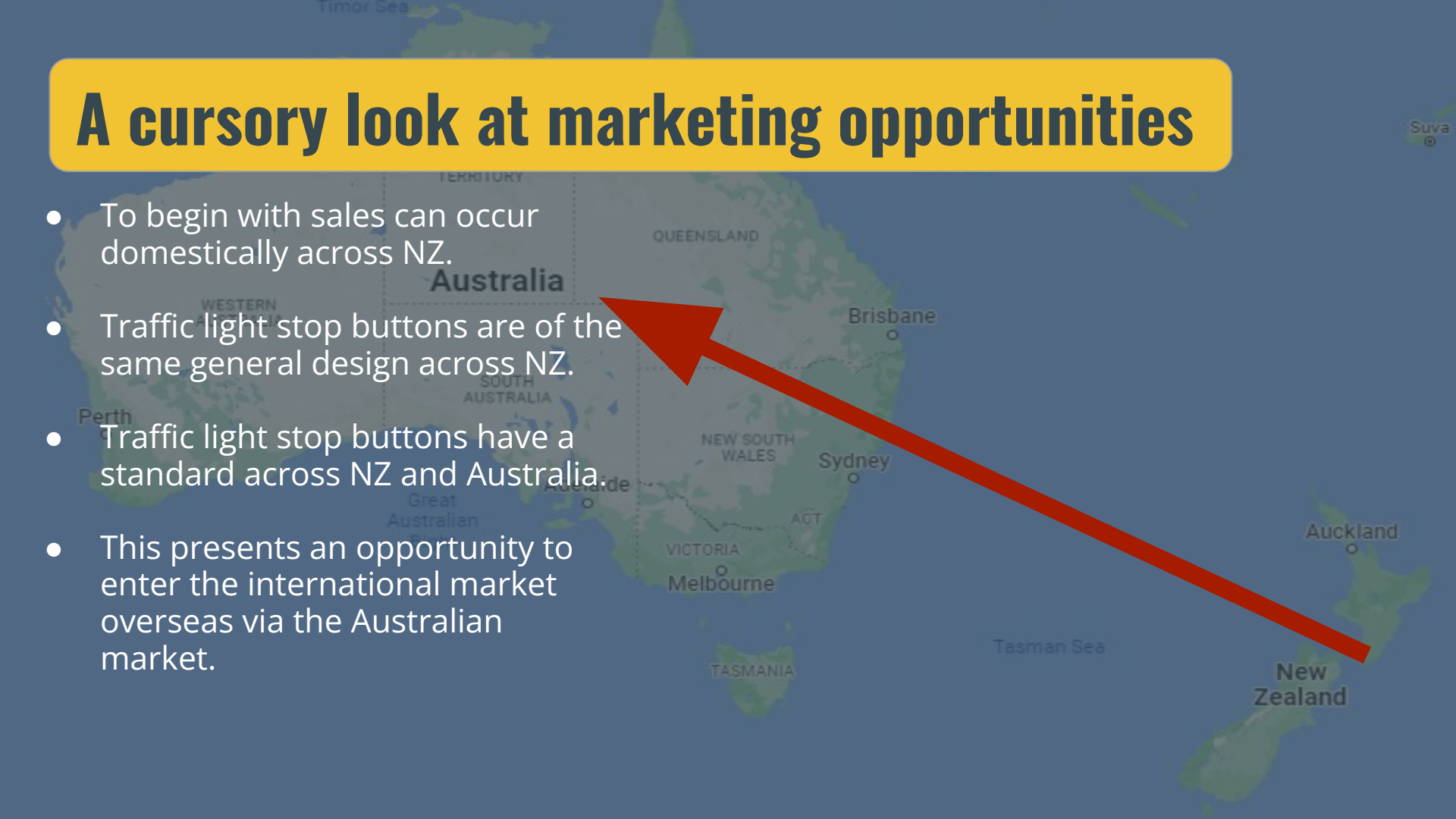
Target Customers

Regional and City Councils

- Traffic light buttons are a frequently touched public surface.
- The transmission of COVID-19 is a known risk to public health and safety.
- Reducing these risks in publicly owned spaces falls into council's responsibilities.

A cursory look at marketing opportunities

- To begin with sales can occur domestically across NZ.
- Traffic light stop buttons are of the same general design across NZ.
- Traffic light stop buttons have a standard across NZ and Australia.
- This presents an opportunity to enter the international market overseas via the Australian market.



Costs and Profit

Initial Estimate:

- Cost analysis is based on the price of the individual components needed to build a single T.L -Aura
- Bulk orders of each component will reduce the unit production cost for each device
- A more detailed cost analysis is possible further into market research and product design

Costs and Profit

Projected Costs Based on a Single T.L-Aura

	Wellington	Christchurch	Auckland	NZ	AUS
Traffic Light Operated Intersections	73	131	427	1748	11000
Number of Crossing (At least 1 crossing at 70% of Intersections)	51	91	298	1223	7700
Number of Buttons (2 per Crossing)	102	182	596	2446	15400
Unit Production Cost (NZD)	$35	$35	$35	$35	$35
Unit Sale Price (NZD)	$100	$100	$100	$100	$100
Total Production Cost (NZD)	**$3,570**	**$6,370**	**$20,860**	**$85,610**	**$539,000**
Total Revenue (NZD)	$10,200	$18,200	$59,600	$244,600	$1,540,000
Total Profit (NZD)	**$6,630**	**$11,830**	**$38,740**	**$158,990**	**$1,001,000**

Conclusion

- We believe our product addresses a significant opportunity in the post-COVID market.
- Hi-touch surfaces represent a biological hazard for people. This needs to be eliminated.
- We have a clear need and motivation to implement our product into public spaces.
- Our solution’s modular design will address this problem without needing to devote funding to replace existing units.

Design Safety

Key Facts:

- **5 mJ/cm^2** dose can kill 99.7% of COVID-19
- American Conference of Governmental Industrial Hygienists (ACGIH) guidelines state that UVC has no known adverse effects at a daily exposure rate of **6 mJ/cm^2**

T.L - Aura's Design:

- Features a **3mW** UV-C LED which radiates the **25cm^2** surface for **42 seconds** - providing a dose of **5.04 mJ/cm^2**
- Cleaning cycle begins 10 seconds after button release
- Cleaning cycle stops immediately and resets if button is pressed
- Estimated time between entering the cleaning zone and pressing the button: **4 seconds**
- Expected dose per interaction: **0 mJ/cm^2**
- Predicted maximum dose of **0.48 mJ/cm^2** per interaction

Unit Cost Estimate

Unit Cost	
UVC LED	$13
Microcontroller	$8
Metal Hood	$9
Additional Costs	$5
Total	$35