End Dark Intersections

Spartan ISBFS

Sentinel Transportation Systems, LLC

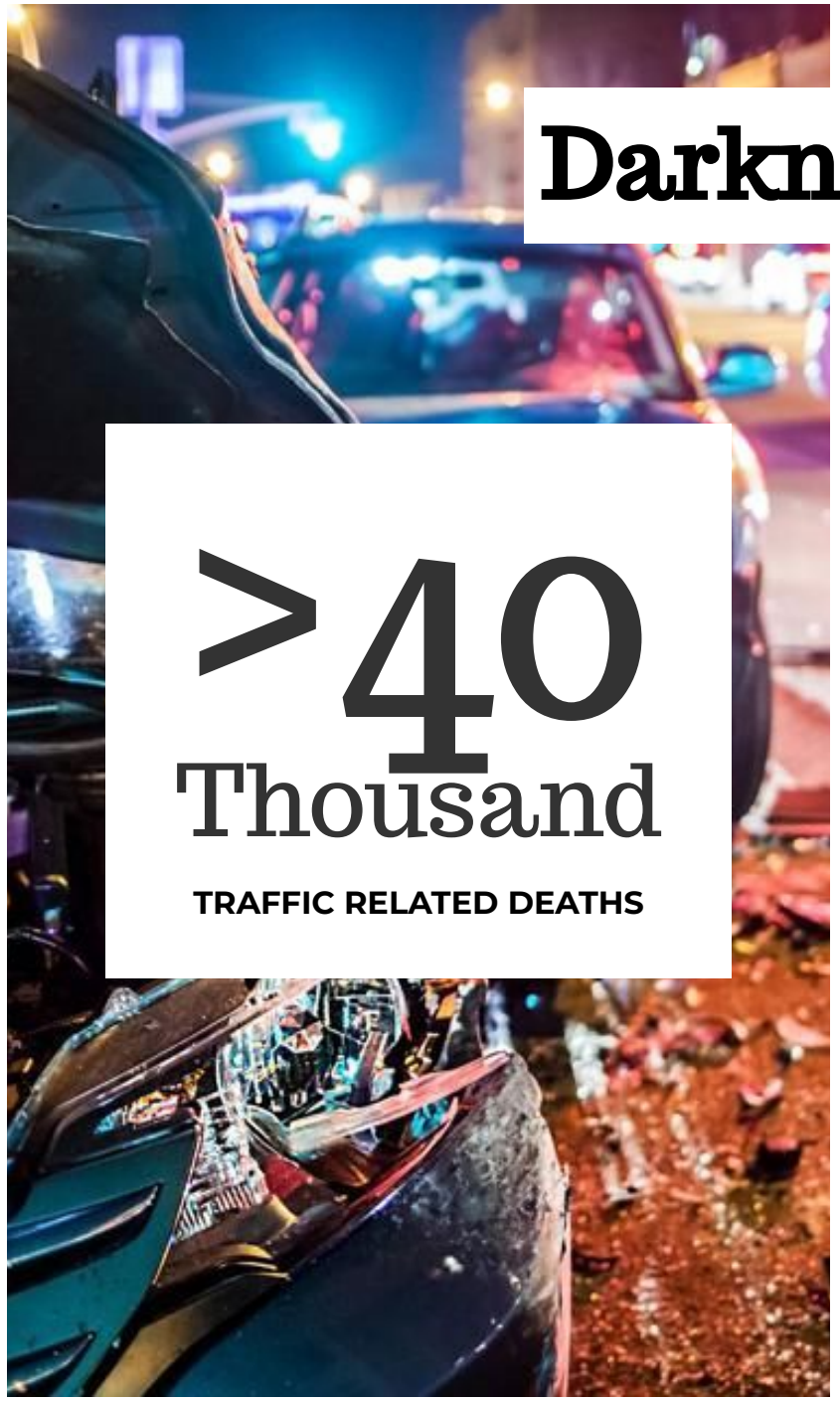
The Situation

Dark intersections are increasing in regularity for several reasons. Power grids are less reliable, infrastructure needs to be updated, and municipalities are faced with budget constraints. In addition, legacy systems are cost prohibitive for large scale deployment and lack the service life to impact safety. The Spartan In Signal Battery Backup System (ISBFS) addresses all these issues. Our Spartan system is cost effective for a citywide deployment, backup system attaches to existing infrastructure, and turns any signal into a smart signal.

What causes Dark intersections?

- -Wide spread area outages
- -Accidents that damage intersection infrastructure
- -Wire theft
- -Extreme weather events

Darkness Must Not Prevail

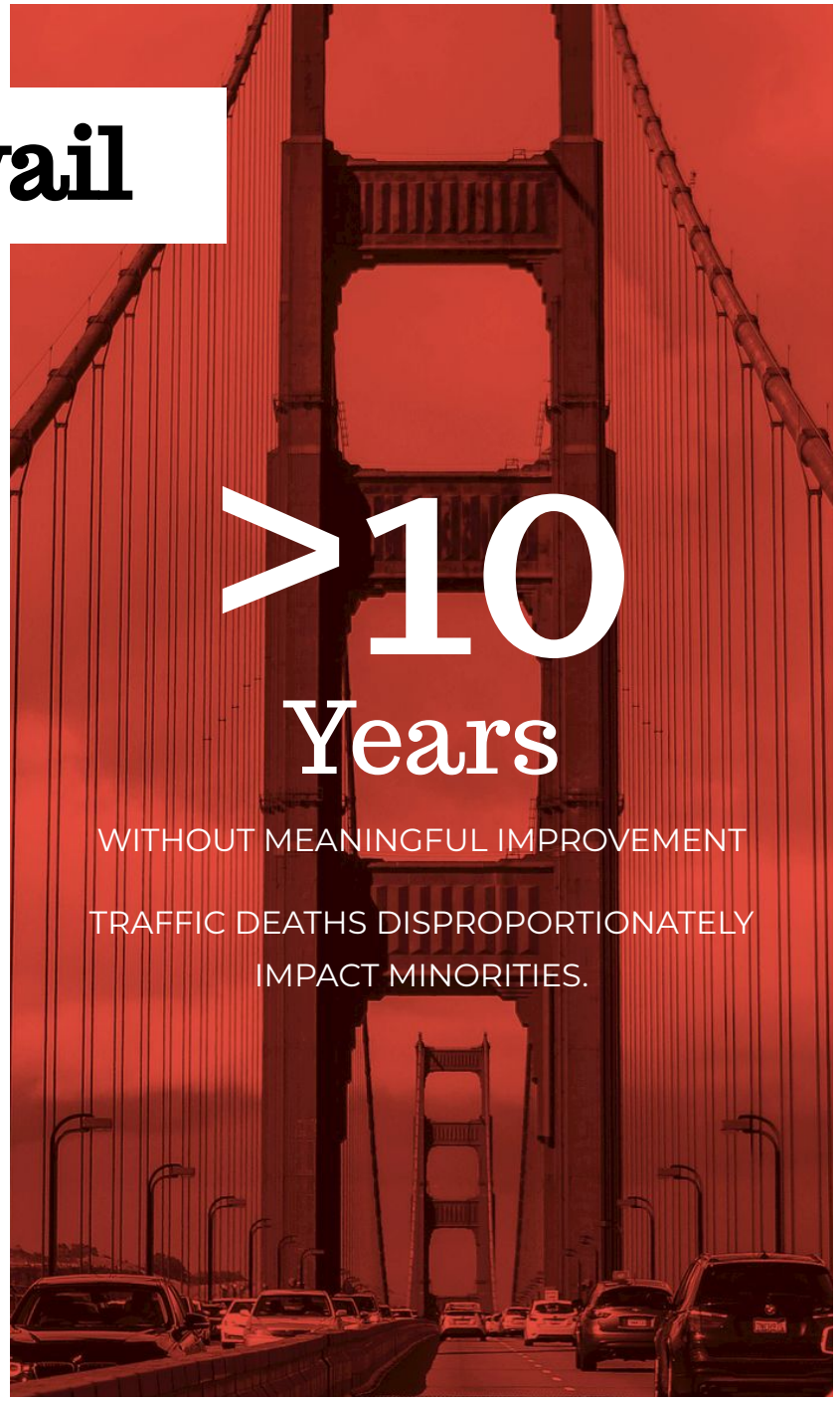


>40
Thousand

TRAFFIC RELATED DEATHS

~20
Percent

TRAFFIC RELATED DEATHS WERE PEDESTRIANS

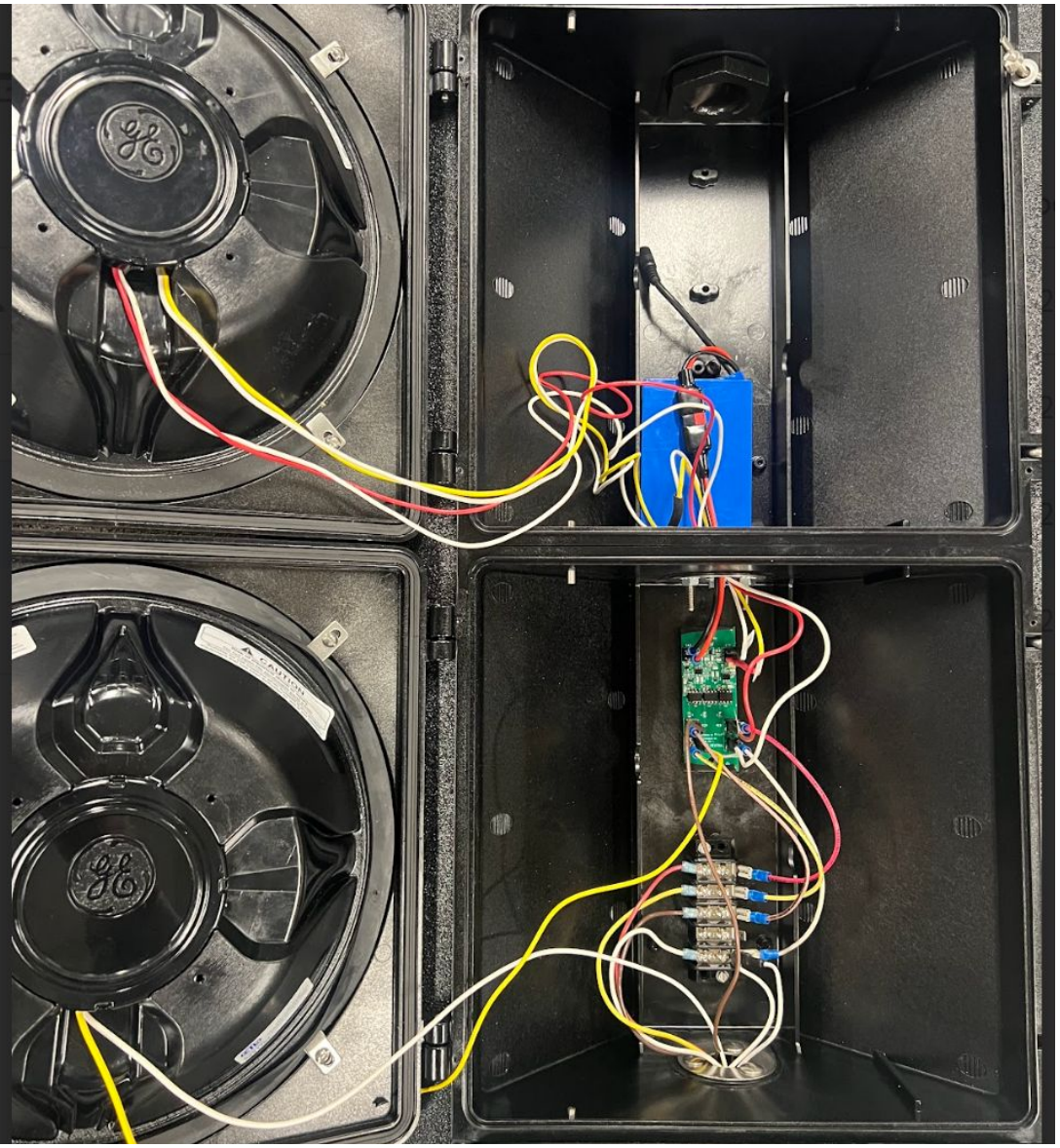


>10
Years

WITHOUT MEANINGFUL IMPROVEMENT

TRAFFIC DEATHS DISPROPORTIONATELY IMPACT MINORITIES.

End dark intersections with a solar compatible In-Signal Battery Backup Systems.



How Spartan Works

- Spartan Control Board monitors AC voltage to the signal head (red yellow green and spare)
- When AC voltage goes out at the signal head the control board activates and begins communicating with other units at the intersection and begins flashing the red traffic bulb.
- Spartan Flashes the red bulb for 16- 72 hrs depending on the selected battery.
- Flash pattern matches all MUTCD requirements and flash in sequence just like a normal hardware flash.
- Upon the return of AC power to the signal head the Spartan control board instantly ceases operation and returns to standby.
- Communication options available to alert when system is activated
- Solar charging option available to create indefinite system battery life

Spartan System Benefits

No wires, no problem	•If the field wires are stolen or damaged Spartan can still flash the intersection
Not controlled by a central point	•If the cabinet is destroyed or shorted out the system will STILL operate. Each signal can initiate safety flash sequence
Exponentially longer operation than legacy systems	•Spartan flashes for 16-72 hrs. while traditional BBS last for 3-5 hrs
Durable by design	•Spartans' battery system is guaranteed for up to 10 years, typical BBS last 3-4 years
Easy installation for rapid deployment	•Installation in under 15 min by a single Signal System Electrician
Reduces time and cost of responding to dark intersections	•No need for traffic control officers or sworn officers to direct traffic •Spartan instantly starts flashing when power is lost and instantly turns off when normal operation begins unlike stop sign deployments
A more equitable way to deliver intersection safety	•Legacy systems are only provided to “important” large intersections. Spartans lower price and longer life span allows cities to give smaller intersections the safety benefits of Battery backup.
Emergency Service Vehicles are safer when signals flash	•During a natural disaster when widespread power outages are common Emergency vehicles can get around the affected areas safer when the intersections have a safe flash operation.

How do you respond?

Traffic Control Officers

The most common response to a dark intersection is to send police or traffic control officers to the affected intersections. This unfortunately takes time for the units to deploy but also is expensive as the units are pulled from normal duty (ie ticketing revenue generation and serving public safety)

Traffic officers in a major US city on average write 40 street cleaning tickets a day. multiply that by $73 and two officers deployed for one day or protecting the affected intersection would equal the cost of a Spartan ISBBS. This figure is just for street cleaning tickets.

Deploying Stop Signs

City crews deploying stop signs to dark intersections takes time for deploying and then upon return of power its takes time to resume normal operation as the stop signs must be picked up before normal operation. This method has been abandoned by some major cities as failure to deploy stop signs to all affected intersections resulted in lawsuits to the city.

Funding Opportunities

SMART

SMART Grants Program

Strengthening Mobility and Revolutionizing Transportation (SMART)

Safe Streets and Roads for All (SS4A) Grant Program

Emissions

REDUCED UP TO 20% BY DISPATCH VS PATROLLING TSR UNITS

Equity

ALL NEIGHBORHOODS ARE TREATED WITH THE SAME RESPONSE WHETHER FIRST AND MAIN OR 85TH AND MLK.

Proactive vs Reactive

PUBLIC NOTIFICATION OF DANGEROUS CONDITIONS AVERAGES 12 DAYS FOR RESPONSE VS IMMEDIATE NOTIFICATION

"Our DOT proactively supports our community with the best technology and tools."

LAURIE R.

"Protecting our infrastructure is critical, we use it everyday and expect it to be fully operational."

KEITH B.

"Seeing a red flash at an intersection is an amazing advancement. A dark intersection almost always leads to a traffic incident."

NIEL L.

"Service vehicles being dispatched versus patrolling reduces emissions."

REBECCA B.

Thoughts? Questions?

909-967-6912 | info@sentinelts.net