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H.E.L.P.™

Hazard Enhanced Location Protocol
Primer Information

www.ess-help.com



NMSDC

National Minority Supplier
Development Council

OUR MISSION:



To reduce the preventable deaths and injuries – globally – from crashes involving Disabled & Vulnerable Vehicles



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THE PROBLEM:



Every 7 minutes in America, someone is involved in a *disabled vehicle* crash



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72,000 People Affected/year

15,000 Killed or Injured

+10% per year



Today's Hazard Warning System:

- Invented in 1951 – ZERO Science
- No improvement in 70 years
- Woefully inadequate lighting communication
- No digital communication with other drivers



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THE SOLUTION – H.E.L.P.™



Capture Oncoming Driver Attention:

LIFE-SAVING EMERGENCY MODE

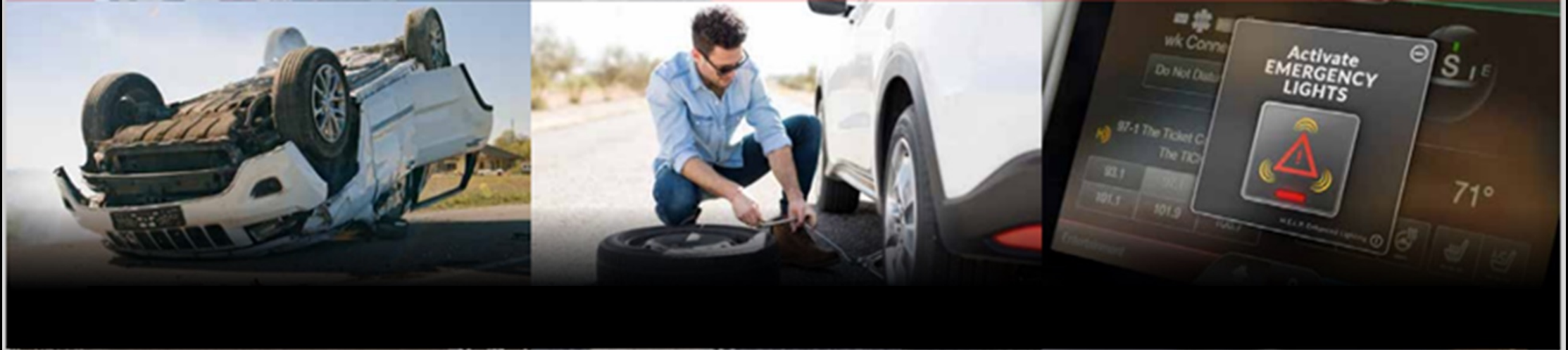
LIGHTING

- + 4.0 – 6.0Hz Emergency Flash Rate
- + Red or Amber LED
- + Software Controlled

DIGITAL

- + Advanced Warnings to Oncoming Motorists
- + Platform and Hardware Agnostic

H.E.L.P. - Intelligent Activation



Auto Deployment

ESS H.E.L.P. Emergency Mode auto-deploys when conditions indicate a safety need:

- **Collision** or **Airbag** sensor
- **Rollover, Tire Blowout**, etc.
- Automated Driving System **"Takeover"**

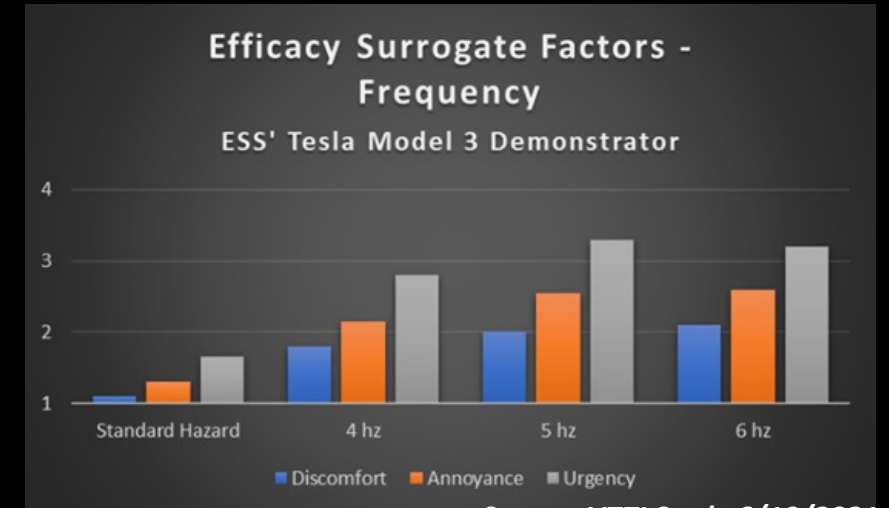
Manual Control

Drivers can also activate Emergency Mode manually if the vehicle is in Park or has the Parking Brake engaged.

- **Smart Screen** Control
- **Button** Near Hazard Lights

Lighting Implementation

- Current Hazard Lamps do not signal “Urgency”
- Software Controlled
 - Auto activation triggers
 - Manual activation switch (soft or hard)
 - Nuisance controls
- New production: BCM / LCM software updated by automakers / tiered suppliers to H.E.L.P.TM specification
- Post production: In-line module implementation

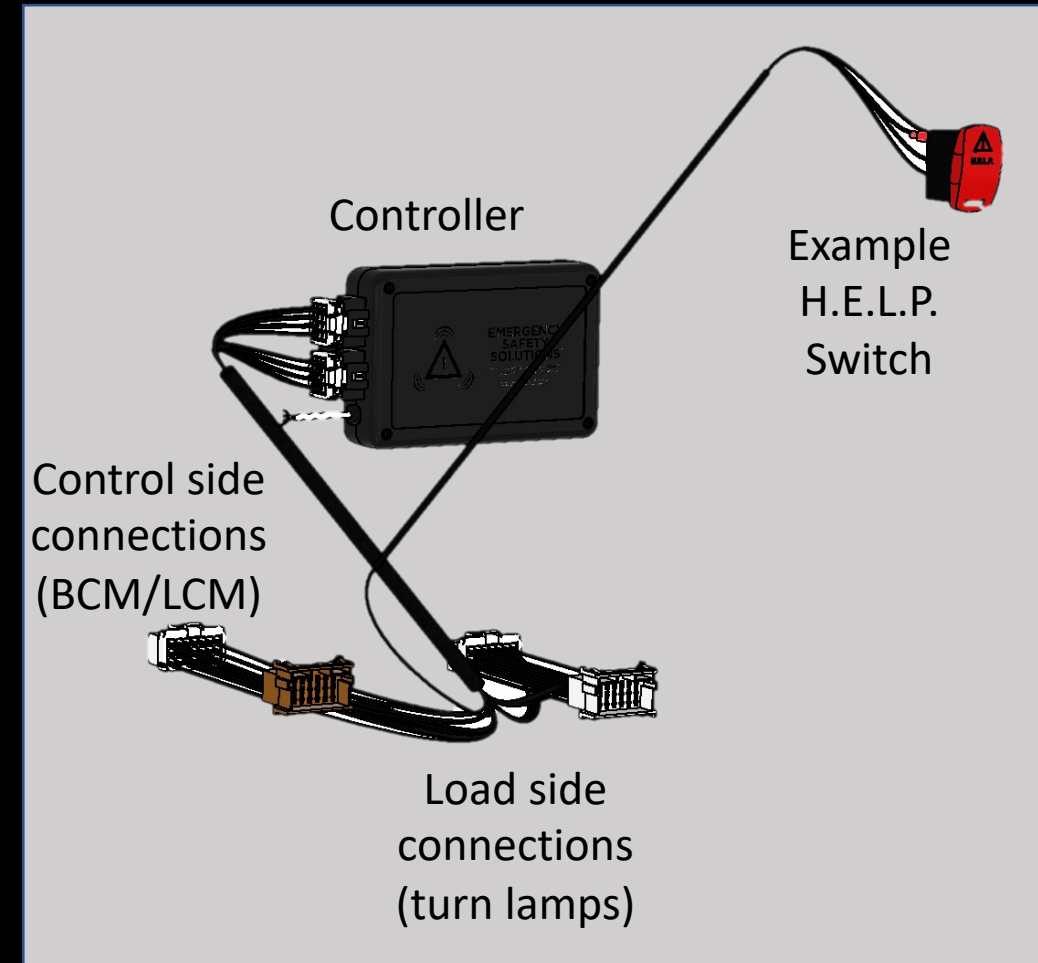


Source: VTTI Study 6/10/2021



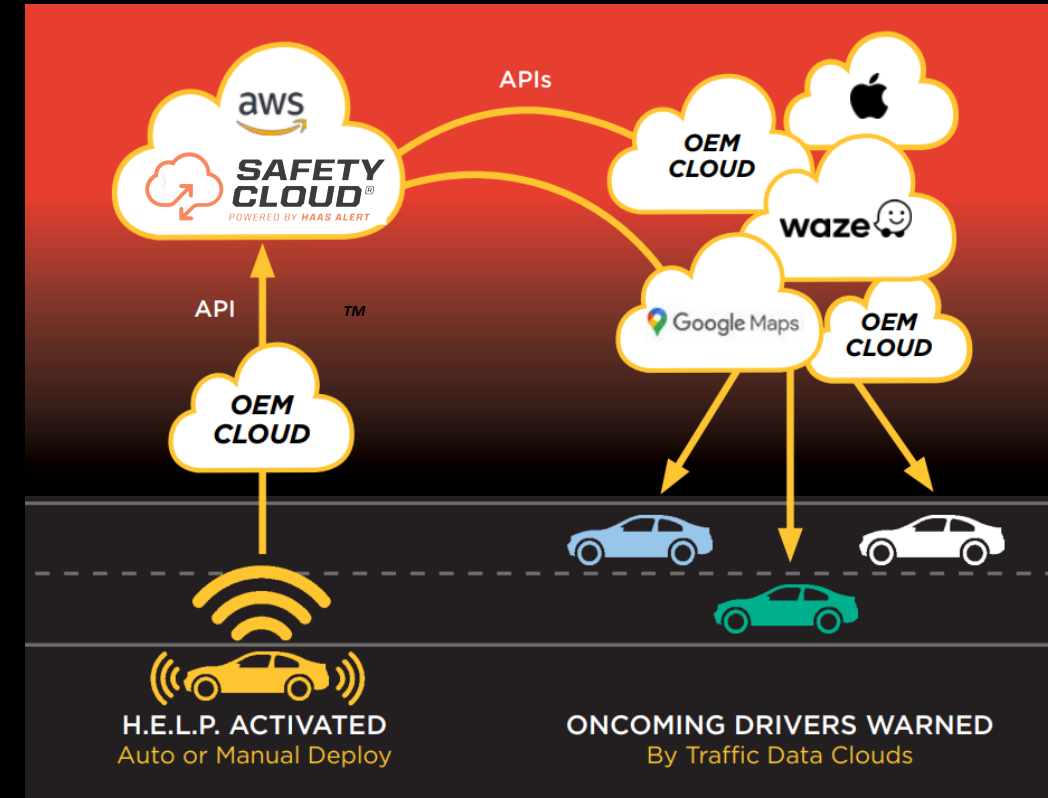
Post Production / Accessory Controller

- Interfaces to vehicle OEM controls (BCM/LCM) via 'T' harness
- Plug-N-Play Install
- Monitors vehicle status for permissive conditions
- Interrupts wiring connection to turn lamps
- Takes control and powers turn lamps during H.E.L.P. mode
- Built with automotive grade components
- Built in 'fail safe' design to maintain all OEM lighting function



Digital Alert Implementation

1. H.E.L.P. activation triggers “disabled vehicle” event from vehicle to OEM Cloud
2. OEM Cloud publishes “disabled vehicle” event to digital alerting platform (e.g., HAAS Alert’s Safety Cloud®)
3. Digital alerting platform notifies approaching vehicles via nav apps and connected infotainment systems
4. Optional: Digital alerting platform sends “disabled vehicle” alerts and other roadway hazard alerts* back to OEM Cloud to trigger alerts in your connected vehicles



* E.g., emergency vehicles, roadside workers

Benefits

- Customers - improved conspicuity when in a vulnerable location
- All roadway users – advanced notification of dangers ahead
- Innovation - ***Proactive Safety*** ahead of regulations
- Integrated Digital Alerts
 - ✓ Less distracting than map app alerts
 - ✓ Precise location
- Cost effective - low application cost with significant safety improvement



Video Demonstration



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Proprietary & Confidential

*The **H.E.L.P.** drivers need until **HELP** arrives™*

Business Model

Automakers

- OEM integration - License of ESS H.E.L.P. technology specification
 - Consistent implementation across all makes and models
 - Optimized for human factors
 - Validated regulatory compliance
 - Protected by robust patent portfolio in 43 countries
 - H.E.L.P. license includes disabled vehicle digital alerting subscription
- Accessory Solution

Commercial Fleets

Aftermarket



The **H.E.L.P.** drivers need until **HELP** arrives™

Other relevant information

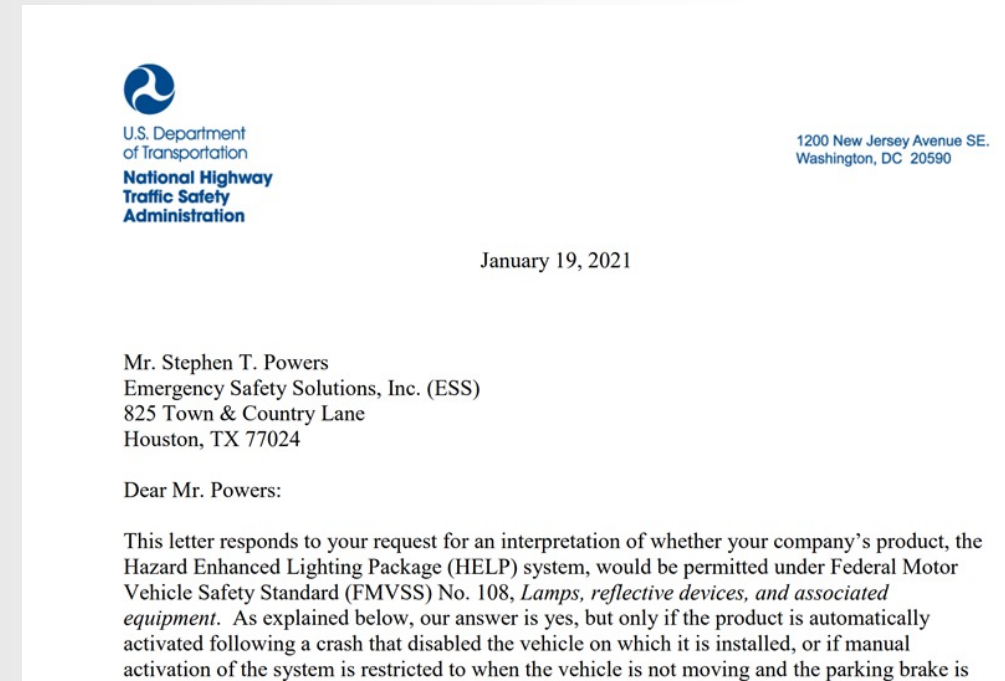
- Regulatory approval is secured in USA
- Consumer study by JD Power validates strong consumer demand



Lighting solution Compliant with Federal & State Regulations



- Highly favorable Interpretation from NHTSA Jan. 2021
 - ✓ Process expedited on basis of fatality/injury study results
 - ✓ Key contents of NHTSA Interpretation:
 - High Flash rates of 2-6 Hz allowed
 - Auto-deployment allowed – crash and other scenario
 - Manual Activation allowed – in park or parking brake applied
 - Switch to be separate from Hazard – Soft or hard switch OK



- HELP's lighting pattern complies with state traffic laws when deployed as designed for license by ESS

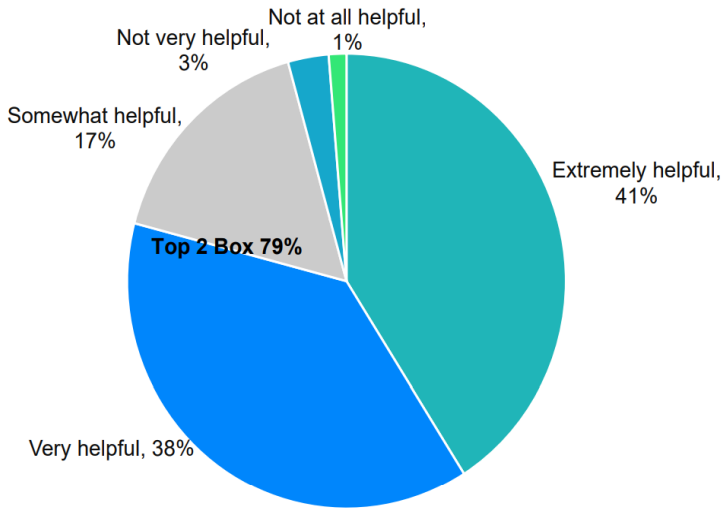


Consumer study fielded by JD Power:

- General Population who own a vehicle; Ages 18-75
- October 13-16, 2020
- 1,023 respondents; Online
- 12 questions on topics of:
 - ✓ Opinion of the technology
 - ✓ Experience with disabled vehicle
 - ✓ Interest in the Technology
 - ✓ Price willing to pay
 - ✓ Interest as Dealer-installed option
 - ✓ Digital notification of disabled vehicle



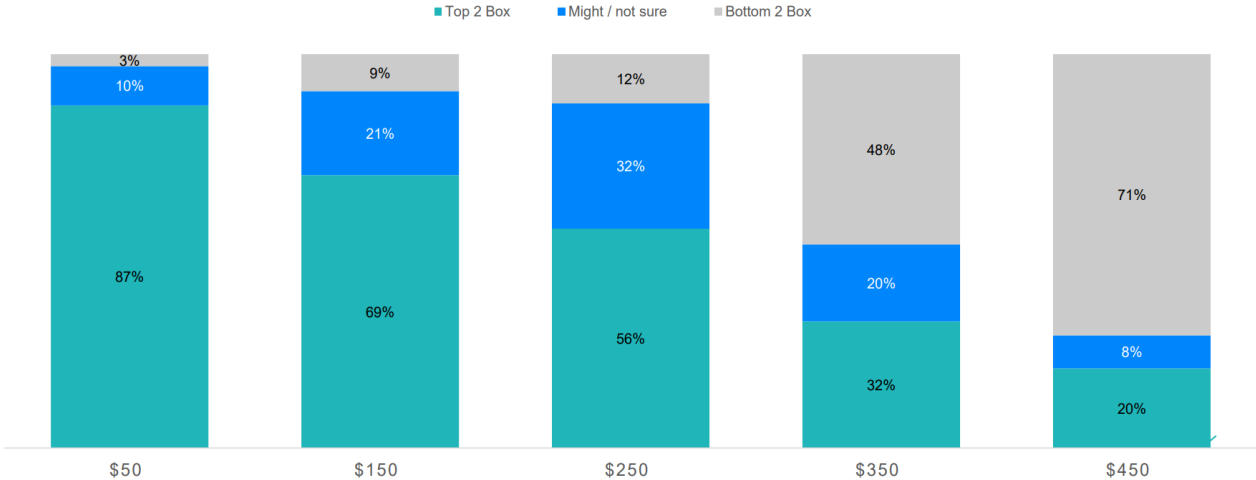
Initial Reaction to the Enhanced Emergency Lighting Technology in Terms of Helpfulness in Preventing / Reducing Accidents
By Total Sample



Please watch this video and tell us your first reaction to the Enhanced Emergency Lighting feature in terms of being helpful in preventing / reducing accidents caused by distracted drivers.

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Purchase Consideration for Enhanced Emergency Lighting at Price Points
By Intenders (Q5 Top 3 Box – N=926)



Q6-Q10. If offered as an available factory installed option, how likely would you be to purchase the Enhanced Emergency Lighting feature on your next vehicle if it costs \$250 (Other tested prices include \$350, \$450 or \$150 and \$50)?
Scale: 1 = Definitely would, 2 = Probably would, 3 = Might / not sure, 4 = Probably would not, and 5 = Definitely would not
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Strong Consumer Interest: J.D. Power Survey

Key Research Findings:

- 96% felt the H.E.L.P. solution would help prevent / reduce the number of low-conspicuity crashes
- 90% felt H.E.L.P. is more effective than today's standard hazard lights
- 91% expressed interest in having H.E.L.P. equipped on their next vehicle
- Among acceptors ("very interested" or "extremely interested"):
 - 80% would strongly consider purchasing H.E.L.P. if priced at \$150
- 96% felt advanced digital warnings would help prevent collisions with disabled vehicles



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