

SMART CURVE WARNING SYSTEM





A pioneering force in the industry, TAPCO has been bringing cutting-edge traffic safety solutions to communities nationwide since 1956. We specialize in manufacturing, servicing and distributing an expansive portfolio of traffic and parking safety solutions, leading the way when it comes to expertise and innovation. Safety is at the heart of all TAPCO innovations — and our mission to save lives prospers in each of our products, from our LED-illuminated LegendViz® technology and Wrong-Way Alert Systems to our groundbreaking pedestrian safety solutions.

Unmatched Expertise

Our team has worked alongside transportation professionals for 70+ years, providing us with an exclusive, knowledgeable perspective on the needs of the traffic safety industry: past, present and future.

Innovative Technology

Traffic safety evolves — and so do we. We continue to be at the forefront of the industry by leading the way in cutting-edge advancements and tailoring our offerings to meet customer needs.

A North American Presence

Our reach spans all across the US and Canada, giving us valuable insight and an in-depth understanding of the varying roadway safety concerns and challenges throughout communities everywhere.

Award-Winning Culture

At TAPCO, we have cultivated a collaborative culture that fosters innovation and instills a sense of pride. Our commitment to excellence is evident in our recognition as a repeat recipient of the Top Workplaces award.



WHY TAPCO'S SMART CURVE TECHNOLOGY?

When a vehicle enters a curve, a lack of advance or in-curve warning can pose a severe risk to motorists. Horizontal curve segments experience crash rates three times higher than other roadways, signaling a need for dedicated safety measures (FHWA).

At TAPCO, we understand the unique safety challenges communities face and strive to provide industry-leading countermeasures — and that includes in-curve risks. Incidents like roadway departures and head-on collisions are common on curve segments, especially ones with higher posted speed limits and little to no roadway warnings.

To combat these dangerous road segments, we've engineered the Smart Curve Warning System. Through a combination of leading technology like LED-equipped chevron signs, radar detection and cloud connectivity, the system helps drivers anticipate a change of direction and reminds them to slow down as they navigate curves, with the ultimate goal of keeping motorists on the road.

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SYSTEM CONFIGURATION

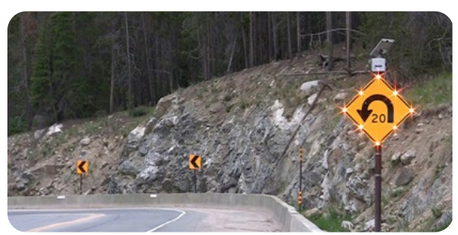
Designed to detect when drivers are approaching a curve, TAPCO's Smart Curve Warning System features wirelessly connected LED-enhanced signs that can be arranged to fit the unique layout of any horizontal curve segment.

The system's BlinkerChevron™ signs work in tandem with activation technology to effectively guide motorists through curve segments, reducing in-curve speeds and keeping them on the road. Systems can be configured to meet the needs of any curve, with customizable flash patterns and activation technology available.

Common applications of the Smart Curve Warning System include:

- Two-lane rural highway curves
- High-speed, multi-lane expressway curves
- Obstructed view highway curves
- Highway off and on-ramps with tight radii

Plus, enhance any Smart Curve Warning Systems further with integrable technology.



Advance Curve Warning Alerts



Message Boards

DID YOU KNOW?

The Smart Curve Warning System is proven to reduce horizontal curve crashes by 58%.

[According to Highways for Life: Evaluation of Sequential Dynamic Curve Warning Systems]



SYSTEM ACTIVATIONS

To maximize the effectiveness of its warning capabilities and elevate safety along hazardous curve segments, TAPCO's Smart Curve Warning Systems are equipped with state-of-the-art activation technology. Each system offers customizable activation options, allowing communities to select the technology that best fits the needs of their roadways.

Radar

Mounted on the first BlinkerChevron™ pole of the system, radar sensors detect vehicles and activate the system based on predetermined criteria. Available options include vehicle presence, speed activation and speed with classification activation.

Dusk-to-Dawn

With dusk-to-dawn activation, the system utilizes ambient light sensors to activate in the evening hours. Ideal for poorly lit horizontal curve segments, continual evening activation provides motorists with important context of upcoming curves.

24/7

Consistently elevate awareness of curve segments with 24/7 system activation. By flashing day and night, 24/7 activation enhances safety at all times, making it ideal for interstates and other highly trafficked curves.

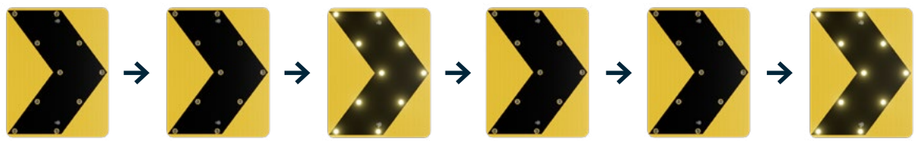
Time Clock

Schedule when any Smart Curve Warning System's BlinkerChevrons flash, with time clock activation. From peak traffic times to hours when incidents occur, agencies can easily program their system to activate during designated times.

FLASH PATTERN

Maximize awareness ahead of dangerous horizontal curves by selecting a flash pattern that fits the needs of any unique curve segments. TAPCO's Smart Curve Warning Systems offer two options when it comes to how accompanying BlinkerChevron™ signs flash:

Sequential



Designed to deliver a pull-through effect, the sequential flash pattern guides motorists through the length of the curve — ideal for long, extensive curves.

Simultaneous



With the simultaneous flash pattern, all BlinkerChevrons flash in unison upon system activation, making it ideal for quick, sharp horizontal curve segments.



CURVE WARNING ALERTS

When implementing a Smart Curve Warning System, one of the most important elements of the system is enhanced visibility of curve segments. TAPCO's Smart Curve Warning Systems feature a set of BlinkerChevron™ signs to draw attention to upcoming changes in roadway trajectory, safely guiding approaching motorists through the length of the curve. BlinkerChevrons are edge-lit around the chevron symbol for optimal awareness, elevating visibility day and night.

- MUTCD-compliant
- Made in the USA
- Variable dimming
- Made with 3M DG3 reflective sheeting

DID YOU KNOW?

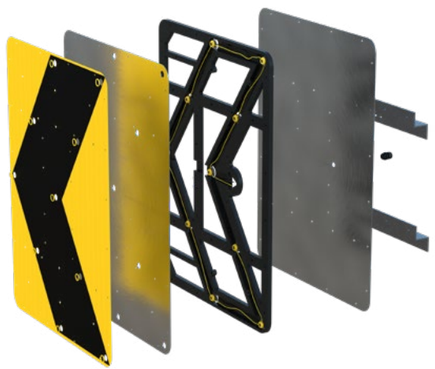
BlinkerChevron™ signs offer double-sided arrangements to enhance awareness and visibility on two-lane roads.



RUGGEDIZED BLINKERSIGN®

Reinforced with two additional layers of material, the ruggedized BlinkerSign® is engineered to withstand harsh environments where heavy winds, falling debris, impacts and plowed or blowing snow are common. Ruggedized BlinkerSigns are recommended for applications including:

- Coastal regions
- Hurricane-impacted regions
- High-speed curves
- Mountain passes
- Valley roads



Ruggedized BlinkerSigns are reinforced with an extra-thick aluminum front plate and high-density polyethylene substrate.

ADDITIONAL ENHANCEMENTS

In some horizontal curve applications, additional safety measures are necessary to create the safest environment possible for road users. When horizontal curve segments pose unique challenges, supplemental measures can be added to enhance any curve warning setup.



Advance Curve Warning Alerts

Warn motorists in advance of upcoming changes in road trajectory. Advance alerts can be programmed to flash at preferred times or activate via the system's radar detection technology.



RWIS

Tailor any system's radar activation further with precipitation sensors. When unfavorable conditions are present, the sensors adjust speed thresholds based on predetermined specifications.



Blank Out Signs

When motorists are traveling too fast ahead of an upcoming curve, blank out signs are designed to display simple warning messages, such as "TOO FAST FOR CURVE".



Dynamic Message Boards

Ideal for multi-lane expressway curves, dynamic message boards provide motorists with en-route warning messages when they're traveling too fast for a curve.

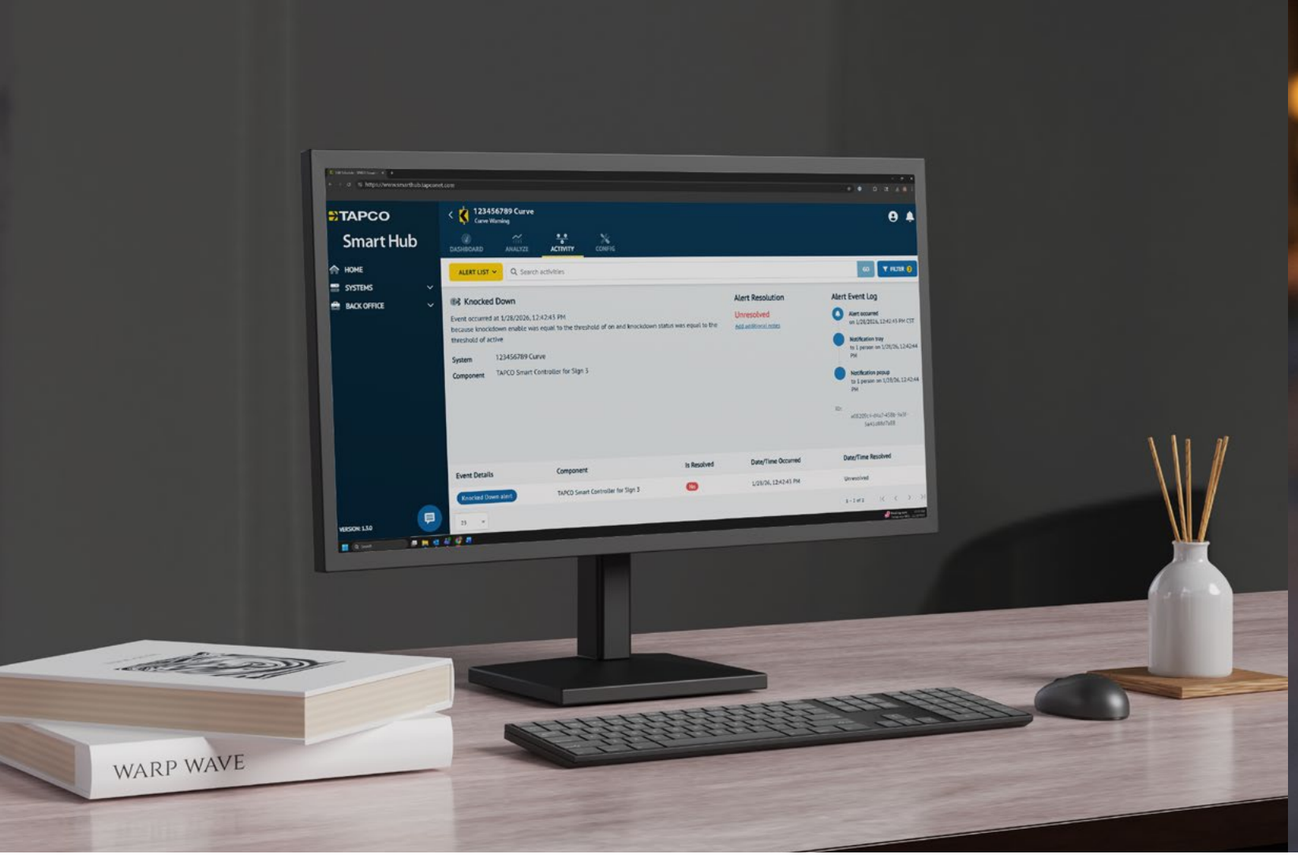
CONNECTED VEHICLE INTERFACE (CVI)

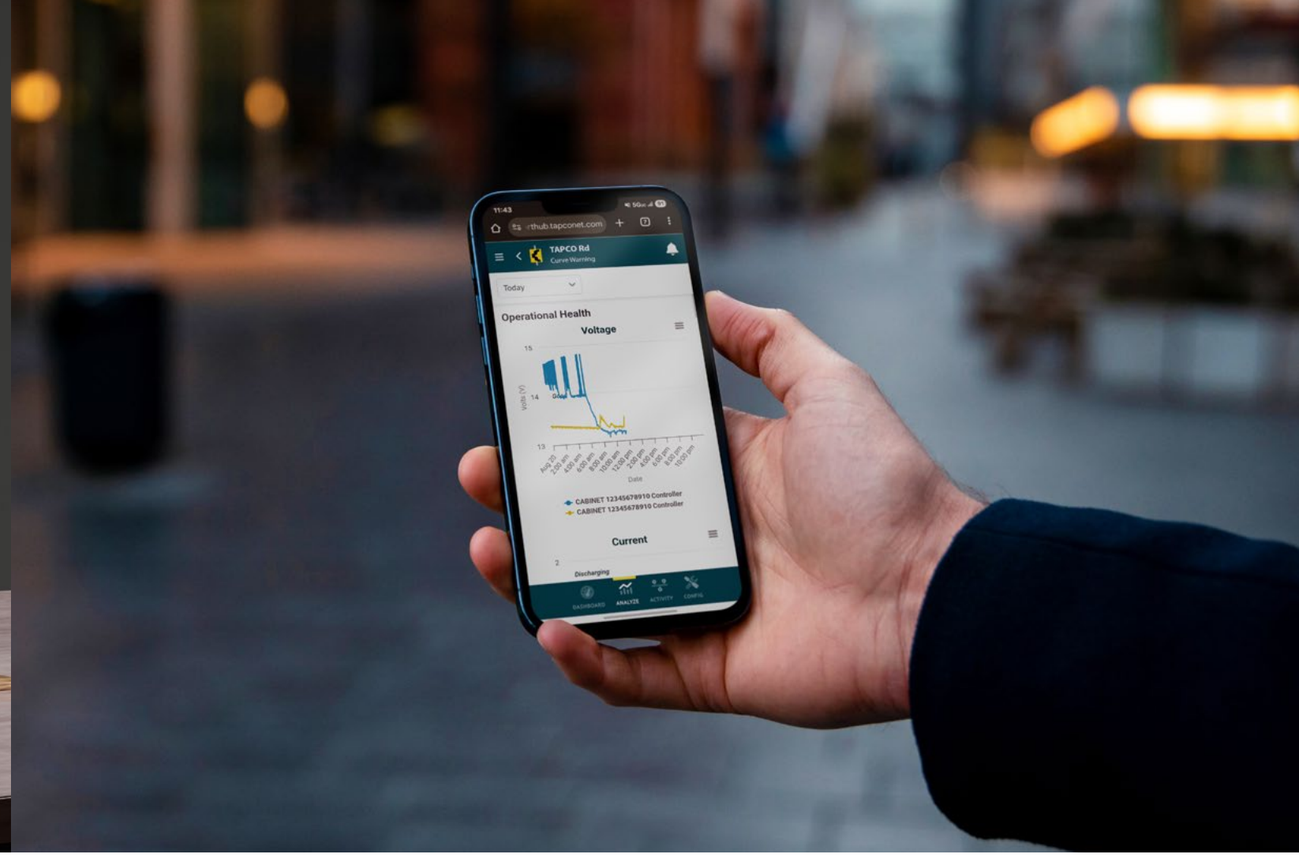
TAPCO's Connected Vehicle Interface (CVI) is designed to seamlessly connect with any Smart Curve Warning System to deploy in-vehicle alerts. Once the system is triggered, the CVI establishes communication between the warning system, the road-side unit (RSU) and the vehicle's on-board unit (OBU) to activate the approaching motorist's in-vehicle alert. By providing another level of warning, TAPCO's CVI elevates situational awareness and driver response to create a safer roadway experience for all.

DID YOU KNOW?

TAPCO's CVI won the 2019 New Products Innovation Award, presented by American Traffic Safety Services Association (ATSSA)

Video





SMART HUB
A SMART CITY PLATFORM

Managing an ITS network can be a drain on time and resources.

Platforms like TAPCO's Smart Hub streamlines system management, providing agencies with remote, system-wide visibility in one central place. Smart Hub eliminates the guesswork by allowing its users to seamlessly view and manage systems from anywhere, providing a variety of remote capabilities to take management to the next level:

- System-wide visibility
- Alert scheduling
- System reporting and diagnostics
- Real-time event alerts

With advanced dashboards to keep users up to speed on system status, TAPCO Smart Hub takes system management to the next level. The platform empowers users to speed up response times in the face of an event or system downtime — all without the hassle of time-consuming site visits. And with real-time data available from activation trends, Smart Hub makes it possible for users to maximize system performance and make proactive changes to enhance safety on any roadway.

DID YOU KNOW?

Smart Hub can send notifications to designated personnel in the event of a system knockdown.





PREVENTATIVE MAINTENANCE

Caring for a Smart Curve Warning System extends beyond procurement and installation. Servicing a system can optimize performance and extend lifespan, making it a vital step in maintaining any community's warning measures. TAPCO offers service agreements to accompany any curve installation or supplement existing deployments.

TAPCO's preventative maintenance plans provide continued care of any traffic system, including scheduled visits, warranty extensions and record-keeping. Once a system is installed, TAPCO customers can "set it and forget it," with experienced service technicians available to provide next-level service for years to come

Video

Preventative maintenance packages are available for any TAPCO system. Additionally, TAPCO offers customized packages to supplement resources for non-TAPCO traffic systems and equipment, ensuring peace of mind for any deployed system. Standard services include scheduled visits to perform inspections and/or testing, plus complete system updates, with comprehensive documentation provided after each visit.

Other benefits of a TAPCO service agreement include:

- Discounted cloud connectivity subscription
- Discounted equipment packages
- Maintenance contractor technical support
- Customizable service agreements





PROCUREMENT

Contracts

By offering purchase agreements, TAPCO ensures that communities nationwide can access high-quality curve warning technology at an affordable price — while creating an easy and fair buying experience.

Purchase agreements and contracts offered by TAPCO include national cooperative contracts through Omnia Partners and federal contracts through GSA. These partnerships are designed to streamline the purchasing process, allowing transportation officials to obtain their desired measures. Not only do purchase agreements save time and money, but they also provide transparency and peace of mind throughout the buying process.

Additionally, TAPCO has partnered with select programs to provide contracts on a state level. By offering measures that adhere to regional standards, these programs also simplify the procurement process for state agencies.

CONSULTATIVE HELP

Contact Us

Each community's roads are set up differently — and it can sometimes be difficult to identify the right fit for horizontal curve segments. TAPCO offers consultative help to communities seeking the best setup for their curve safety concerns. During the consultation process, TAPCO's experts gather information about specific concerns, infrastructure characteristics and available resources to assess needs and recommend right-fit configurations.

TAPCO understands that the one-size-fits-all approach isn't always suitable, which is why right-sized offerings are available to address specific curve concerns. TAPCO's deep understanding of the industry paired with 70+ years of experience working to enhance roadway safety ensures our team of experts is equipped with the knowledge to select the optimal measures for any setup, carefully considering factors such as reliability and compatibility for the best possible fit.



TAPCO Safe travels. | TRAFFICLOGIX | ALL TRAFFIC SOLUTIONS | Parking LOGIX

(800) 236-0112 TAPCOnet.com

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