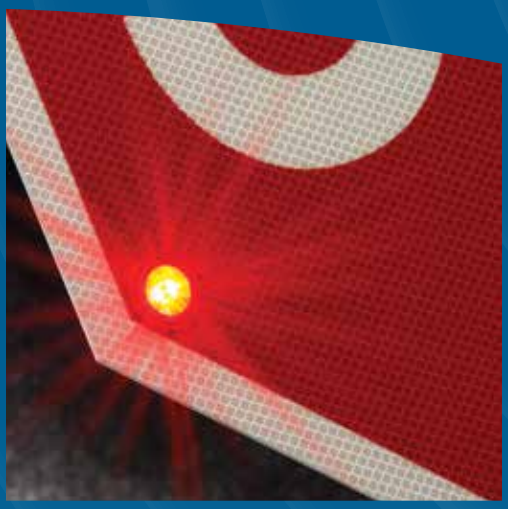
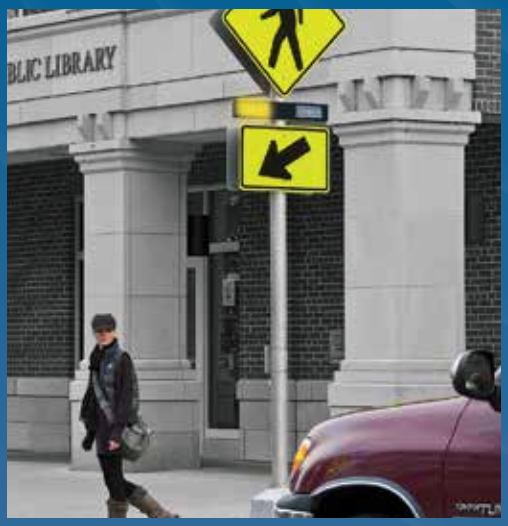
ATSSA
INNOVATION
AWARD WINNING
SYSTEMS

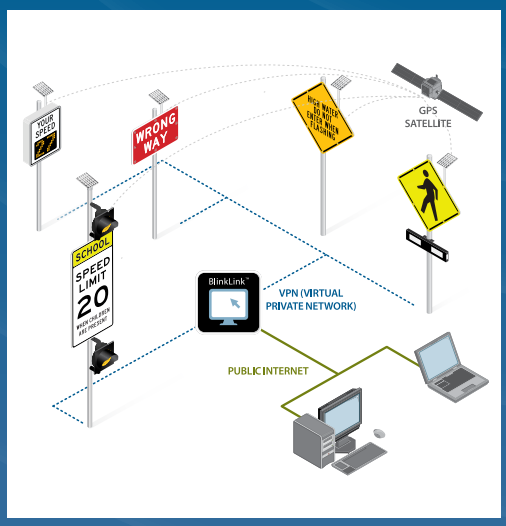
pages 18-19

TAPCO®

Intelligent Warning Systems







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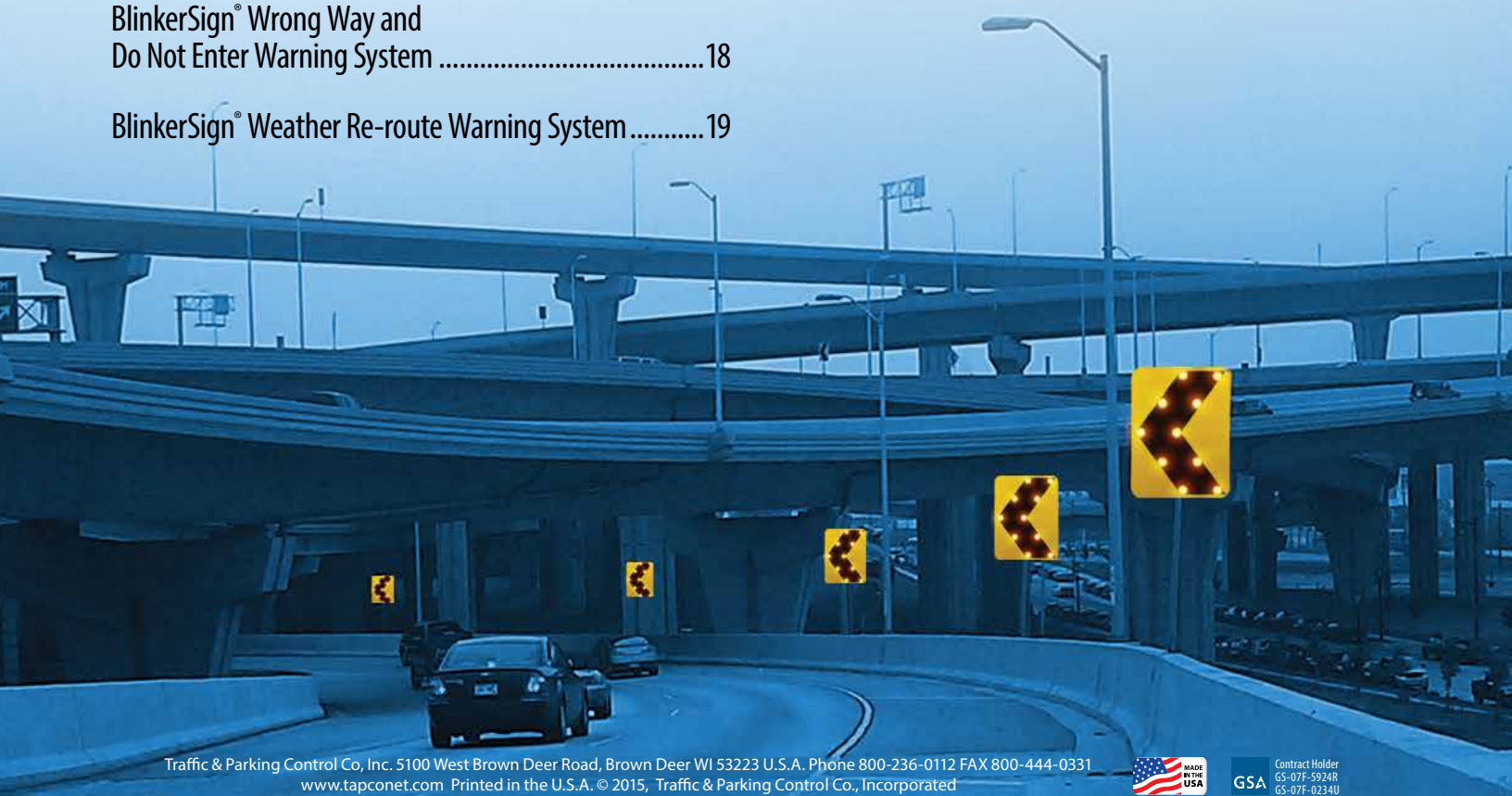


Traffic & Parking Control Co, Inc. 5100 West Brown Deer Road, Brown Deer WI 53223 U.S.A. Phone 800-236-0112 FAX 800-444-0331
www.tapconet.com

MADE IN THE USA

GSA Contract Holder GS-07F-5924R GS-07F-0234U

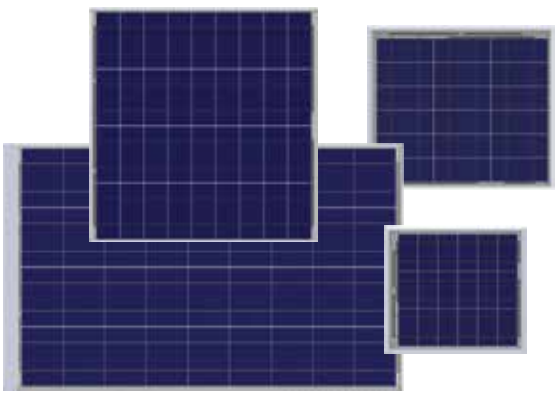
A TAPCO patented LED BlinkerSign® combines flashing LEDs and 3M DG³ reflective sheeting, resulting in the most visible signage available. Powered by an eco-friendly solar panel, BlinkerSign® LED signs deliver their message day and night. Ideal for high-incident areas or where new traffic conditions exist. The TAPCO patented AutoBright™ circuitry measures the available light every 15 minutes and adjusts the LED flash brightness accordingly. Installs easily onto new or existing sign posts and poles.

- Can be integrated into an ITS (Intelligent Transportation System)
- Can be programmed to operate 'round-the-clock, off time clocks, push buttons and/or vehicle motion detectors
- Multiple signs can be synchronized
- Heightens driver awareness
- Anti-graffiti film overlay and anti-vandalism hardware
- Easy installation
- Proprietary AutoBright™ circuitry
- LEDs Surrounding Border offer greater square footage of light for driver & provides symbol awareness
- Unlimited Activation capabilities

PATENTS #6,943,698 AND #6,693,556 (OTHER PATENTS PENDING)

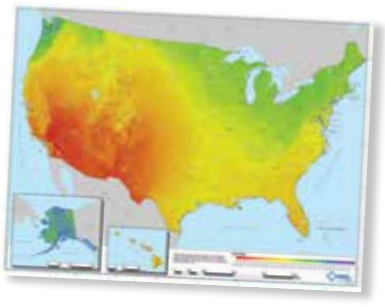
Custom BlinkerSign®

BlinkerSign® LED signs can be fabricated with any MUTCD legend, but sometimes a non-standard sign is necessary to convey your message. TAPCO will custom tailor the right sign, activation and power system to suit the application. We have years of custom sign and system design and our in-house technical team is there for you after installation–we stand behind our systems.



The right solar panel for your location and application

By combining site-specific shading data with published global weather data, TAPCO creates an accurate solar site analysis. This data can then be applied to your BlinkerSign® system or other solar applications.



BlinkerBeam® wireless traffic control systems add simple, reliable and versatile tools to ITS applications

When used on highway/roadway applications, BlinkerBeam wireless transmitters can activate pedestrian crosswalk signage, including BlinkerSign® LED Signs, detection devices and many other traffic control devices. It can also be an integral part of critical warning systems for alerting bikers, joggers and pedestrians to the presence of vehicle traffic and vice versa. Thousands of all-weather, reliable BlinkerBeam® systems are in operation across North America.

1 System activation
(pedestrian push-button shown)

2 Activated BlinkerBeam® transceiver radio sends wireless signal to nodes

3 BlinkerBeam® triggered nodes activate BlinkerSigns®, RRFB, in-pavement lighting or other devices

BlinkerSign® LED sign

Rectangular Rapid-Flash Beacon (RRFB)

BlinkerBeam® Radio

- Operates license-free on 902-928 MHz Spread Spectrum
- Stand-alone operation
- Solar Powered or 110 VAC operation, or optional two-year battery
- Fully programmable outputs
- Range up to 900 feet with internal antenna, optional antenna for extended line of sight distance

The advantages of solar power versus 110v AC

- Lower installation and operating costs
- Compact, clean appearance
- Self contained
- Easy to install
- Reduced labor
- No concrete cutting
- No electrician required
- No trenching
- Not affected by local grid power outages

110V AC POWER AVAILABLE

110V AC grid-powered systems are available

BlinkLink™ Web-based Traffic Device Monitor & Control

Monitor BlinkerSign® and other device status from any web-enabled computer. Comprehensive management of all device settings, schedules and messages. Up-to-date information allows you to respond immediately to changing situations.

User-identified E-mail & Text Alerts

Select recipients for automated e-mail or text alerts based on battery levels dropping below pre-set thresholds.

Automated Data Analysis & Reporting

- Automatic data sort provides comprehensive reports
- Easily identify positive and negative trends for actions
- Prioritize your resources with instant information
- Quickly review histories of equipment and events

Traffic Data Retrieval & Management

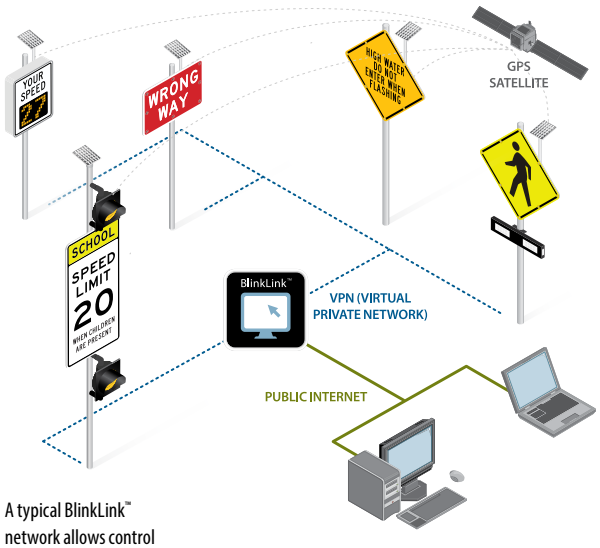
- Automatically upload data for recall and subsequent reporting
- Systematic data organization for convenient review

Mapping

- View your equipment on an interactive map
- Review device status, reports and modify settings

TAPCOCare Support

- Remote startup & training
- Up-to-date status monitoring and notification of problems



A typical BlinkLink™ network allows control and monitoring of multiple devices in multiple locations

Dashboard

- Each device's cell status, battery voltage, temperature, solar voltage and current
- Historic data by day, week, month and year

Map

- Zoomable overview of all your devices
- Mouse over locations for pop-up status
- Select devices from list

Alerts

- Shows device status
- Set alert levels for automated e-mail and/or text notifications
- Choose recipient(s) and notification mode

Usage Data

- View device's current events and status

Events

- Calendar-based event programming (8 different day types and 16 events per day)

PATENTS #6,943,698 AND #6,693,556 (OTHER PATENTS PENDING)

Push Button

- Activated with less than 2 lbs. force
- Provides two-tone audible confirmation as well as visual confirmation
- Cannot be jammed or stuck in "on" position
- Wind, hail and vibration have no effect
- Superior grade pre-treatment and powder coat
- Stainless steel button cap
- Meets ADA, MUTCD and TAC requirements
- Transient protection that meets and exceeds NEMA specifications
- Remote mounting available

Standard push button

Audible push button

Toggle Switch

- ON/OFF Switch
- Black

Key Switch

- Post or cabinet mount
- ON/OFF 2 position

Time Clock Controller and Software

- Windows-based program running from a laptop or PC (software and cable sold separately)
- Simple solution for single BlinkerSign® management
- Based on the calendar with the ability to program in holidays and daylight savings time
- Choose from 8 different day types and 16 events per day
- Ideal for school, business and industrial facility work schedules

Hand Held Transmitter/Receiver

TAPCO's 433MHz digital receiver and transmitters guarantee you reliable, efficient operation and easy installation for multiple applications.

- Operates with a unique rolling code each time the switch is activated
- Multiple applications with delay or no delay programming
- 100 transmitters can be programmed to activate a single receiver
- Up to 4 separate wireless receivers can be activated by a single transmitter (i.e. 4-button)
- Up to 750' range

Climate

- Climate (fog, snow, ice, wind, etc.)

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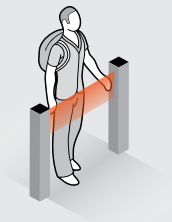
Overheight Vehicle Detection

Provides secondary warning beyond existing signage. Detects overheight vehicles and warns drivers of an impending problem by triggering a BlinkerSign® warning system.

- Bridges
- Airport overhangs and walkways
- Equipment yards
- Logging trucks
- Tunnels
- Railroads
- Overpasses
- Parking structures

Wireless Bollard

Pedestrians and bicyclists can passively trigger flashing BlinkerSign® LED signs, RRFB, BlinkerBeacon™ LED Beacons, in-pavement LEDs, and other ITS devices. Actuators are housed in anodized aluminum cabinets that can be secured to concrete or asphalt.



- Install virtually anywhere, utilizing wireless control if needed
- Designed to interface with ITS devices
- Battery operated: no grid wiring required

Vehicle Speed Sensor

A low power draw Digital Signal Processing (DSP) based K-band radar for ITS sign activation and traffic calming. It is the premier product in its class.

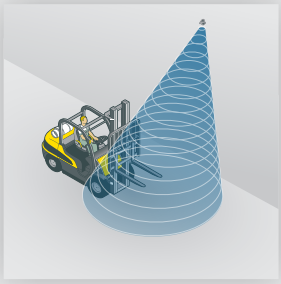
Water Level Sensor

- Detects rising water levels which triggers BlinkerSign® LED Signs warning drivers of flood conditions
- Works independently of power grid, effective even during power outages
- Adjustable water level activation
- Works in saltwater as well as freshwater applications
- Applications include frequently flooded areas, tidal zones, underpasses, hurricane zones

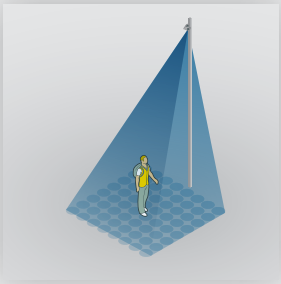
Vehicle and Pedestrian Motion and Presence Detector

Active infrared and microwave technologies work together to provide precise presence and accurate motion detection.

- Mountable between 8' and 16'
- Impervious to light, sun rain and snow
- Housing is rated NEMA-4

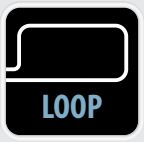


Motion detection
detects objects at rest



Presence detection
detects objects in motion

Loop Vehicle Detection



- In-ground inductive loop vehicle detection
- Can be hardwired or solar powered

Pedestrian and Wildlife Detection

- Infrared thermal imaging cameras for pedestrian and wildlife detection

Do you have a unique problem requiring a custom activated BlinkerSign® system? For years TAPCO has been providing custom stand-alone solar solutions. These electrical grid independent systems provide reliable warning when needed most–in harsh environments, dangerous areas and remote locations.

FREE QUOTE
1-800-236-0112
http://gotap.co/0bbc

BlinkerSign® Pedestrian Crosswalk LED Warning Systems

In some scenarios, mid-block crossings have shown to be very dangerous when not properly drawn out and made visible to drivers. Standard signage might not be entirely effective in new and high-use crossings, cluttered or visually challenging crossings, or crossings within higher speed, higher traffic volume areas. In the past there have been few options, and enhancing the area with a signalized intersection is not an option.

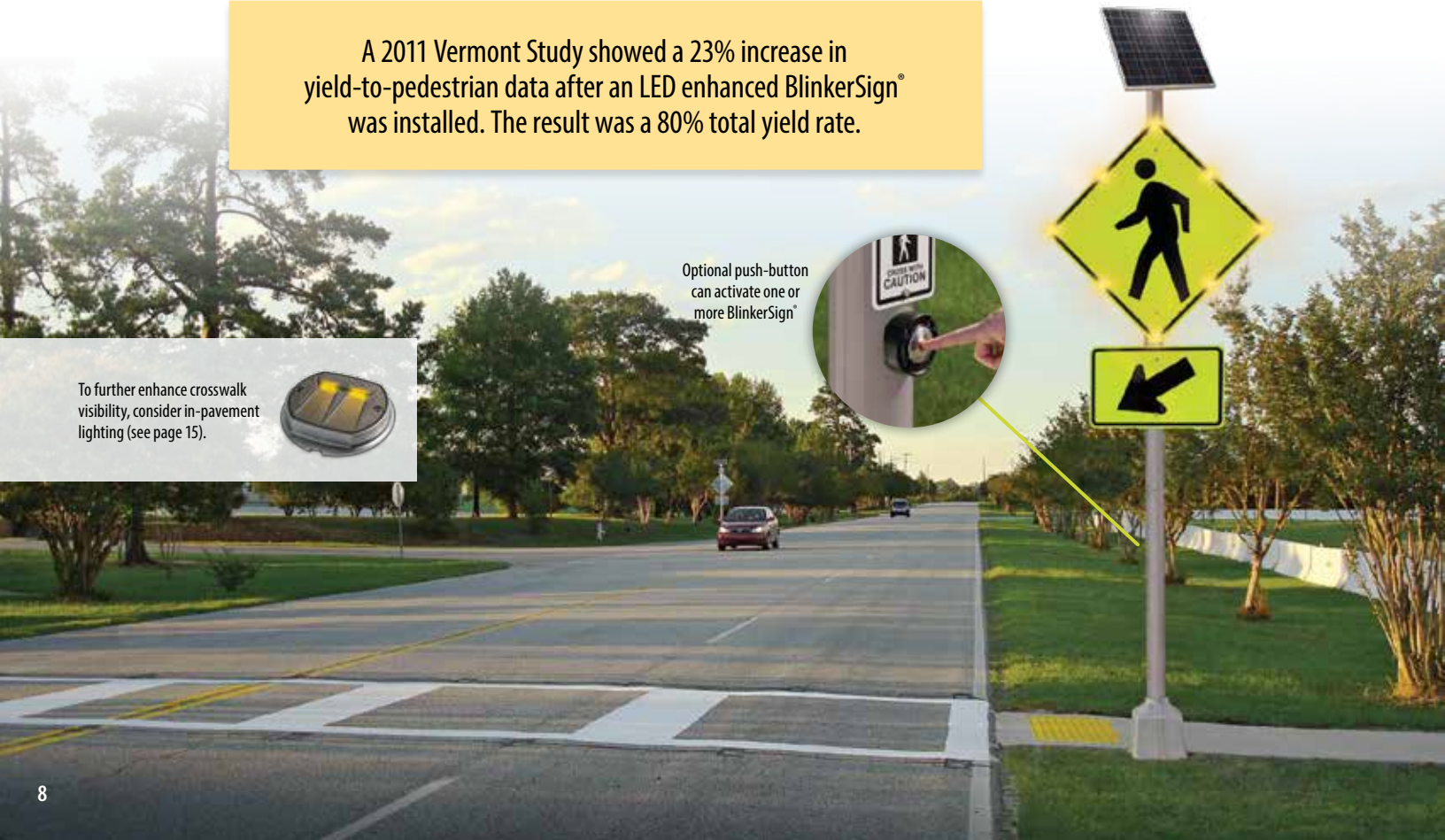
For these situations, TAPCO offers systems that provide a high-visibility, real-time warning that pedestrians, crossing guards and/or schoolchildren are in or about to enter the crosswalk. TAPCO BlinkerSigns provide an inexpensive actuated system that will give the pedestrians the comfort they need and the visibility that drivers deserve.

- Pedestrian BlinkerSign Systems can be activated by unlimited options using solar power and wireless technology offering a low cost, low labor option for customers
- Great option for dangerous school routes or busy roundabouts.
- Federal funding is available if crossing is a school route location (please see page 15)
- Call TAPCO with your location drawn out and amount of traffic known and TAPCO can help customize your crossing

Smaller solar BlinkerSigns offer portability not found in 110 volt wired systems

BlinkerSign® LEDs can be triggered actively or passively by your choice of activation device, including wired or wireless push-buttons, infrared bollards and motion detectors.

A 2011 Vermont Study showed a 23% increase in yield-to-pedestrian data after an LED enhanced BlinkerSign® was installed. The result was a 80% total yield rate.



Optional push-button can activate one or more BlinkerSign®

To further enhance crosswalk visibility, consider in-pavement lighting (see page 15).

BlinkerSign® Bike Path LED Warning System

Recreational paths used by bikers and joggers inevitably end up crossing paths with traffic. TAPCO's Bike Path systems detect vehicles approaching these intersections, then trigger flashing LED BlinkerSigns® at the intersection. Drivers and cyclists are alerted simultaneously. Optional push-button activation, motion detecting bollards or other activations can be configured. Either way, the warning LEDs flash only when activated–and more importantly, only when the intersection may have a potential conflict. The systems are an easy-to-install solar safety solution for your city or state park trails.

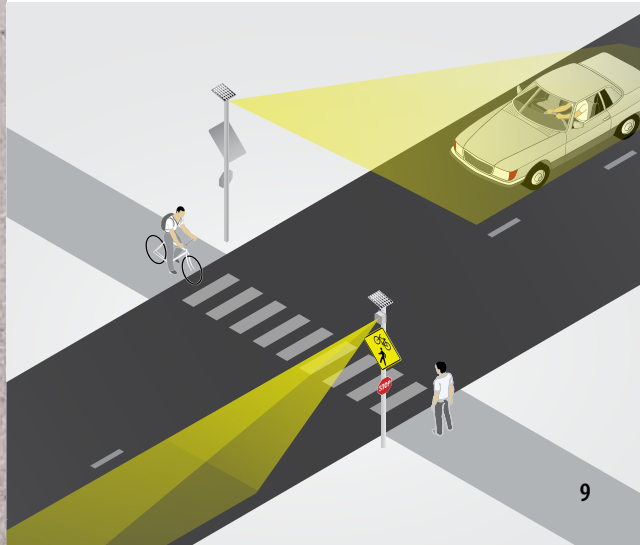
- New bike/jogging path locations
- High incident intersections
- Rural roads
- Advance bike/jogging path warnings

Improved safety for bike path users and motorists. Vehicle motion detectors trigger the system, warning path users and drivers simultaneously

1 Choose either vehicle radar detectors or pedestrian presence detectors (located above each BlinkerSign®)

2 Triggered BlinkerSigns warn drivers in both directions of a path crossing

3 Path-facing Stop signs warn the cyclist to be alert of cross traffic



Rectangular Rapid Flash Beacon (RRFB) LED Crosswalk Warning System

RRFBs are user-actuated amber LEDs that supplement warning signs at intersections without signals or mid-block crosswalks. Two arrays of alternately flashing LEDs use an irregular flash pattern (similar to emergency flashers on police vehicles), commanding the attention of drivers day and night. The RRFB has been shown to provide an 80% reduction to Yield-to-Pedestrian traffic, exceeding that of standard beacons. As a low cost alternative to traffic signals, it's no wonder why RRFB systems are taking the country by storm! The RRFB units install easily onto new or existing signal poles, and TAPCO can provide completed systems with poles and hardware. The FHWA requires that RRFB systems are solely for use in pedestrian or school crossings, and must be pedestrian activated (actively or passively).

- TAPCO RRFB LEDs are the brightest and most durable on the market
- Wireless Synchronized Control
- Longest Range of Communication
- 3-Year Warranty; Dedicated Support
- Lowest Power Consumption
- SAE Certified, Steerable LED Arrays
- Solar, 110VAC or 12VDC
- Efficient Energy Management System
- Active or Passive Wireless Activation
- Pushbutton or Bollard or Infrared
- Individually Maintained Components
- ITS Compatible
- Signs & Anti-vandal Hardware
- RRFB LEDs can flash on front and sides, alerting drivers and pedestrians simultaneously. Compatible with Intelligent Transportation Systems (ITS)
- MUTCD interim approval

TAPCO RRFB Advantages

- ✔ TAPCO RRFB LED arrays are SAE J595 Class 1 certified and FHWA compliant.
- ✔ TAPCO RRFB-XL™'s extra-large LED arrays exceed FHWA requirements (ideal for daylight visibility and multi-lane roads).
- ✔ State-of-the-art lens performs to the highest standards, with the best viewing angle and brightest LEDs on the market.
- ✔ TAPCO's modular RRFB assemblies are designed to allow for component-level replacements, saving you time and money.
- ✔ Compatible with pedestrian activation devices, including wireless push-button and infrared bollards.
- ✔ TAPCO's optional BlinkLink® application allows you to monitor RRFBs and other ITS systems, with any device linked to the internet.
- ✔ TAPCO manufactures signage of the highest quality, and we carry all of the hardware to complement RRFB assemblies.
- ✔ Solar power eliminates electrical installation labor and maintenance costs

3

RRFB LED arrays flash synchronously

80% reduction to Yield to Pedestrian traffic!*

* "An Analysis of the Efficacy of Rectangular-shaped Rapid-Flash LED Beacons to Increase Yielding to Pedestrians Using Crosswalks on Multilane Roadways in the City of St. Petersburg, FL", Center for Education and Research in Safety

School Zone Applications

Protecting children on route to school is a high priority. Across the country high speed roads surround schools making it increasingly important drivers are aware of pedestrian activity. BlinkerSign flashing LED signs boost awareness with bright flashing LEDs. Add the time clock controller option and signs can be programmed to flash a specified times, typically during morning student drop-offs, afternoon student pickups, and during special events. Running signs only when most necessary increases driver response (over 24/7 flashing systems) and the neighborhood residents will appreciate it.

- School zone BlinkerSign systems can be activated by unlimited options using solar power and wireless technology offering a low cost, low labor option for customers
- Great option for dangerous school routes or busy roundabouts.
- Federal funding is available if crossing is a school route location.
- Call TAPCO with your location drawn out and amount of traffic known and TAPCO can help customize your crossing

The Time Clock controller is a simple software scheduling solution for single BlinkerSign® flash management. Choose from 8 different day types (including holidays) and 16 events per day. Automatically adjusts for daylight savings.

BlinkerPaddle® Flashing LED Paddles

Flashing LED paddles deliver a bright warning to help protect children, crossing guards and road/emergency personnel. Eight bright LEDs on each face flash in unison, commanding the attention of oncoming motorists in all weather conditions. Thumb switch turns LEDs on for either (or both) sign faces. LEDs automatically shut off when paddle lowered below horizontal. Light-weight design minimizes arm and wrist stress (18" paddle weighs less than 2 pounds)

- School zones, temporary traffic control, emergency scenes
- Will operate for over 20 hours continuously on (3) AA rechargeable NiMH batteries
- Includes (1) BlinkerPaddle® LED paddle, (3) rechargeable NiMH batteries, (1) 120v AC wall charger , (1) 12v DC car charger

DirecTime™ Retrofit

Web-enabled Time Clock Controller for ITS Devices

This internet-enabled time clock operation management device gives you advanced capabilities to monitor and control your school zone beacons, BlinkerSign® LED signs and other traffic control devices. Once activated, all ITS devices within your system are accessible with BlinkLink™ (page 5) via a web connection.

The DirecTime™ Retrofit Controller replaces manual or pager-based time clocks simply by plugging your existing circular connector into the new DirecTime™ Retrofit Controller, hanging it and then mounting the attached antenna outside the cabinet.

DirecTime™ uses cellular-based communication and requires no additional infrastructure such as radio repeaters, Ethernet connections, local radios, local wireless connections or local networks.

- Web-based functionality
- One-step installation
- No local software required
- 2-year warranty
- Powder-coated aluminum
- Size: 4 ⅜" W x 8 ¼" H x 1 ⅞" D

DirecTime™ Retrofits and Direct Connect options available for a wide variety of ITS Devices

1 Eliminate driving to each sign location to schedule and reprogram your manual time clocks

2 Installation is as easy as opening the cabinet and swapping the DirecTime Retrofit with the existing time clock.

Outdated timeclock

DirecTime™ Retrofit

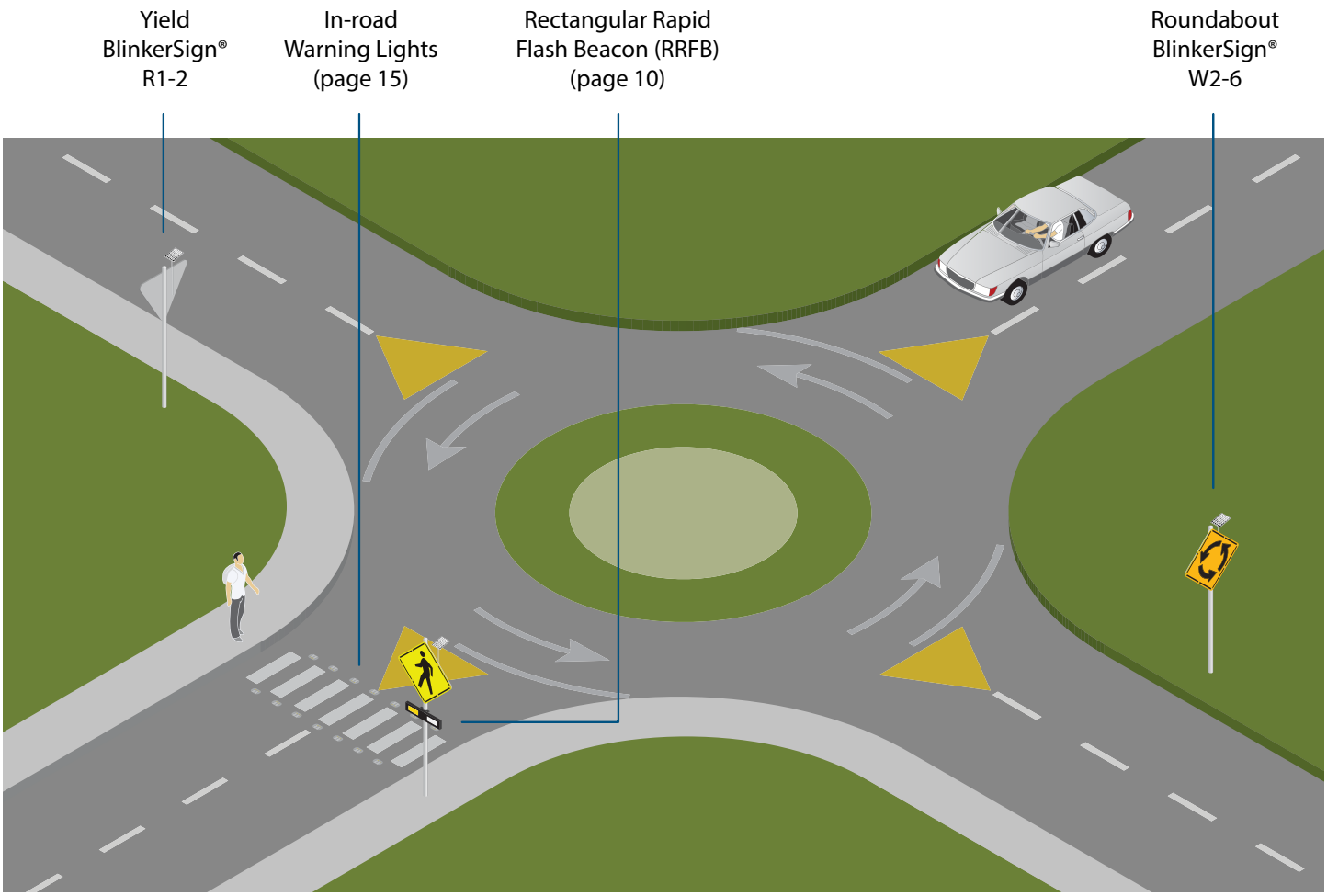
BlinkerSign®
Roundabout Applications

Roundabouts provide safe and efficient traffic flow and make use of extensive safety and traffic research conducted over the past 25 years in other countries. Over 1,000 roundabouts are operational in the United States and, according to the Federal Highway Administration, 150 to 200 new roundabouts are being constructed each year.

Roundabouts can move traffic safely through an intersection because they reduce the speeds of vehicles and reduce the number of conflict points. Studies by the Insurance Institute for Highway Safety (IIHS) have shown that roundabouts reduce fatal crashes by 90 percent, injury crashes by 76 percent, pedestrian crashes by 30-40 percent, and bicycle crashes by 10 percent. Studies have shown that roundabouts can also reduce intersection delay significantly, saving time and reducing fuel consumption and vehicle emissions.

- BlinkerSign® LED Signs provide drivers prior warning of roundabouts as well as pedestrian crosswalks within the roundabout.
- Solar Powered/ Energy Efficient - Low cost

BlinkerSign® Roundabout applications provide drivers more time to make decisions prior to entering the roundabout



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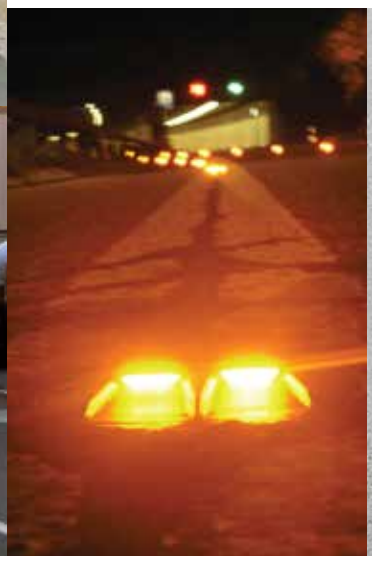
TAPCO Lane Light In-road Warning Lights

In-pavement lights alert motorists to the presence of a pedestrian crossing or preparing to cross the street. The amber lights are embedded in the pavement on both sides of the crosswalk and oriented to face oncoming traffic. In-road LED markers produce a bright, daytime-visible light focused directly in the driver's line of sight clearly indicating the curve, hazard, crosswalk, variable lane, or lane edge. This requires no interpretation by the driver resulting in increased visibility.

When the pedestrian activates the system, either by using a push-button or through detection from an automated device, the lights begin to flash in unison, warning the motorist that a pedestrian is in the vicinity of the crosswalk ahead. The flashing LEDs shut off after a set period of time, i.e., the time required for a pedestrian to safely cross the street.

Industry leading 3 million candela/m^2 LED output for full daytime visibility

- In-road flat profile is Snowplow-safe and bike-safe
- Viewable range of 1,000 ft
- Maintenance-free design
- Automatic night dimming
- Standard or enhanced flash
- Variety of activation devices and methods
- Environmentally friendly
- Low power consumption
- Solar-power option
- Economical
- Ideal for mid-block locations
- MUTCD compliant



BlinkerSign® Intersection Conflict Applications

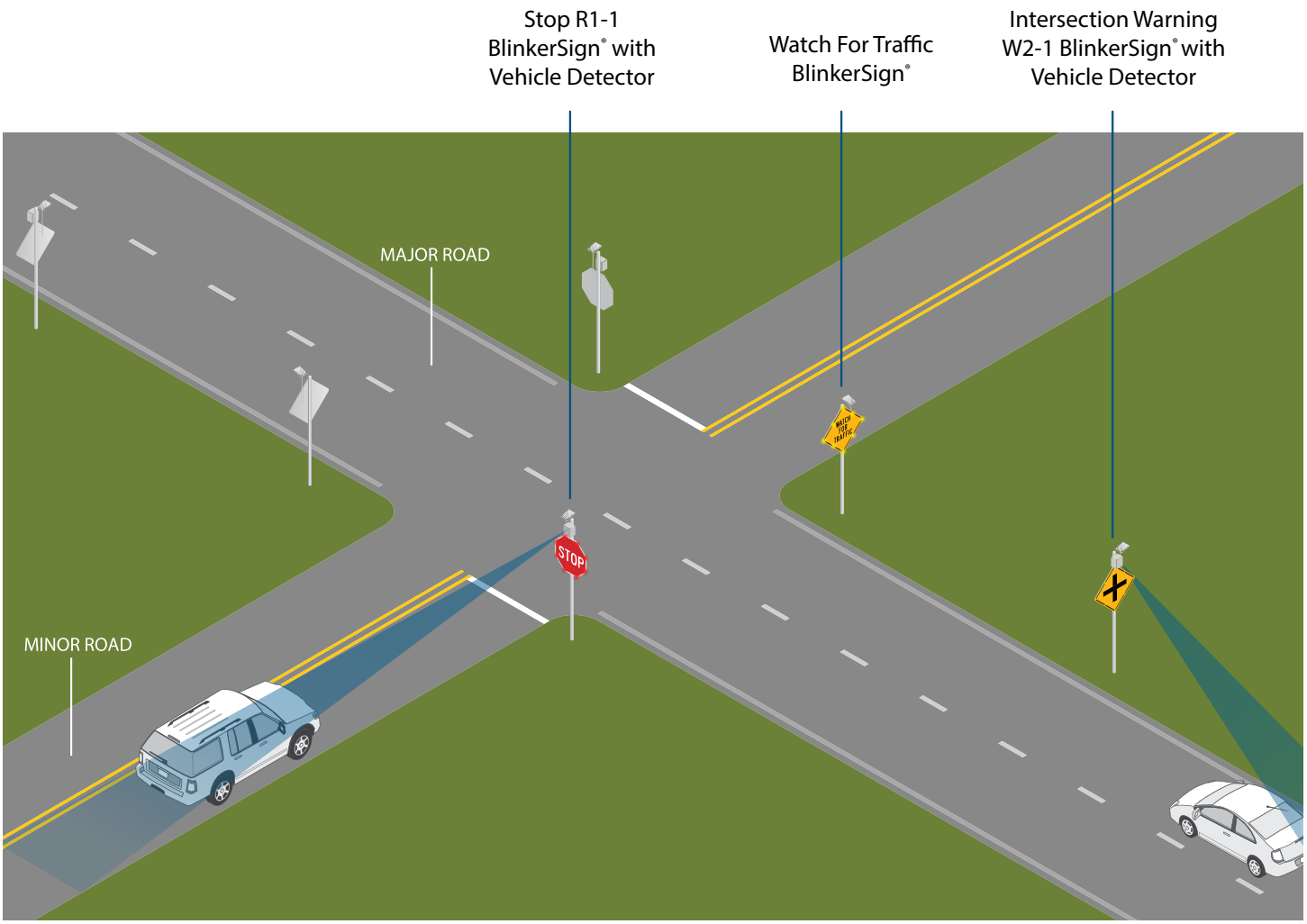
BlinkerSign® Intersection Conflict Applications address conflicts at 2-way stop intersections by providing drivers (on both the major and minor roads) with real-time dynamic warnings of other vehicles approaching the intersection.

These systems consist of Vehicle Detectors on both roads triggered by approaching vehicles. Wirelessly triggered BlinkerSign® LED signs or BlinkerBeacon™ LED beacons then flash a real-time warning to signs visible by the drivers of the vehicles on both roads.

Major road traffic is warned with a flashing BlinkerSign® or BlinkerBeacon® indicating the potential for cross traffic (typically "Entering Traffic When Flashing" or "Watch For Traffic"). Motorists on the minor road are alerted with flashing LEDs on BlinkerSign® R1-1 "STOP" signs.

- Solar Powered/ Energy Efficient - Low cost
- Combined effect of warnings to drivers on both roads provides drivers advance warning, reducing conflicts resulting in serious injuries or fatalities

Ideal for stop-controlled intersections of a minor road and a major road



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BlinkerSign® Advance Traffic Control Signs

A majority of intersection-related fatal crashes occur at rural crossings where high-speed major highways intersect lower-speed secondary roads. Vertical and horizontal curves can make it difficult for drivers to identify safe gaps in the oncoming traffic when crossing or turning onto the high-speed road. Realigning intersection approaches and other methods can be time-consuming and expensive, and may lack justification at low-volume rural intersections where local agencies have limited budgets.

BlinkerSign® Speed Limit signs will bring traffic calming to areas where speeding is an issue. Adding vehicle radar detection provides drivers instant awareness that they are breaking the set speed limit threshold. Provides savings over traditional driver feedbacks with similar results.

- BlinkerStop® LED STOP signs and BlinkerSign® Stop Ahead signs provide greater conspicuity for new, high-risk and high-incidence intersections where static signs are ineffective
- BlinkerSign® LED signs are typically solar-powered so they can be easily deployed in any location with adequate sunlight
- They can be programmed to flash 24/7, dusk-to-dawn or during any desired intervals
- BlinkerSign® LED signs can be wirelessly linked to other ITS devices including radar/vehicle detectors. These detectors can pick up vehicles exceeding the set speed threshold from up to 300 ft, triggering a BlinkerSign® to flash for a set amount of time.

Day-Viz® Daylight Visible LEDs cut through fog and stand out in sunlight

BlinkerSign® flashing LED signs are highly visible, day and night, and especially during adverse weather conditions

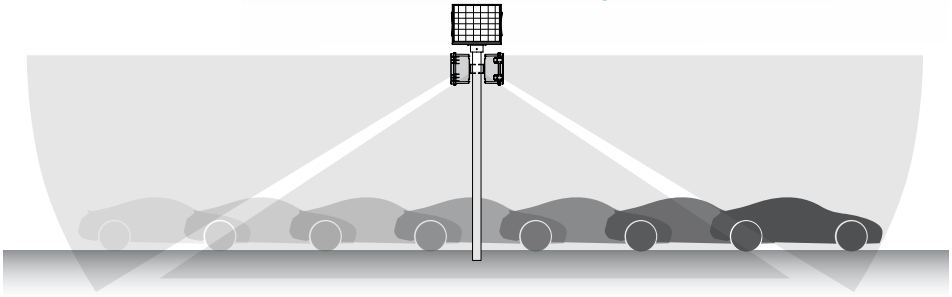
BlinkerSign® Wrong Way and Do Not Enter Warning System

Wrong-way driving often leads to the most feared of traffic incidents, the head-on collision. Wrong-way crashes are more likely to produce serious injuries and fatalities. Most of the time the offenders are confused, distracted or intoxicated drivers, so one might think there's little that can be done to prevent wrong-way driving. Intoxicated drivers tend to keep their eyes down on the road directly in front of them, trying to keep their vehicle between the lines, often not seeing standard traffic signs.

Installing DO NOT ENTER and WRONG WAY BlinkerSign® LED signs can deter drivers from making wrong-way movements onto freeways and other restricted roads. By providing the extra visible warning cues standard traffic signs lack. The solar-powered BlinkerSign® is directional and activated only by vehicles traveling in the wrong direction (speed threshold is adjustable).When the Confirmation Radar detector verifies vehicle traveling the wrong direction an alert can be provided to highway authorities using TAPCO's BlinkLink™. An optional Confirmation Camera can also be triggered to capture photos of the offending vehicle. Additionally, signs facing the opposite direction can be added to warn drivers of the wrong way traveling vehicle.

Options range from dual radar with camera to economy Time Clock/dusk till dawn models for nighttime use.

Dual Radar Detection and Dispatch Alert



Driving the wrong way in one-way traffic or wrong side of road factored into 3.1 percent of all fatal crashes in the U.S.* there was a 30% reduction in San Antonio after installment of BlinkerSign® wrong way and do not enter warning systems

Wrong Way Driver Caught on Camera

The confirmation camera located on the wrong way BlinkerSign® provides a third form of confirmation through visual snap shot uploads of wrong way drivers.

* The National Highway Transportation Safety Administration's 2009 report

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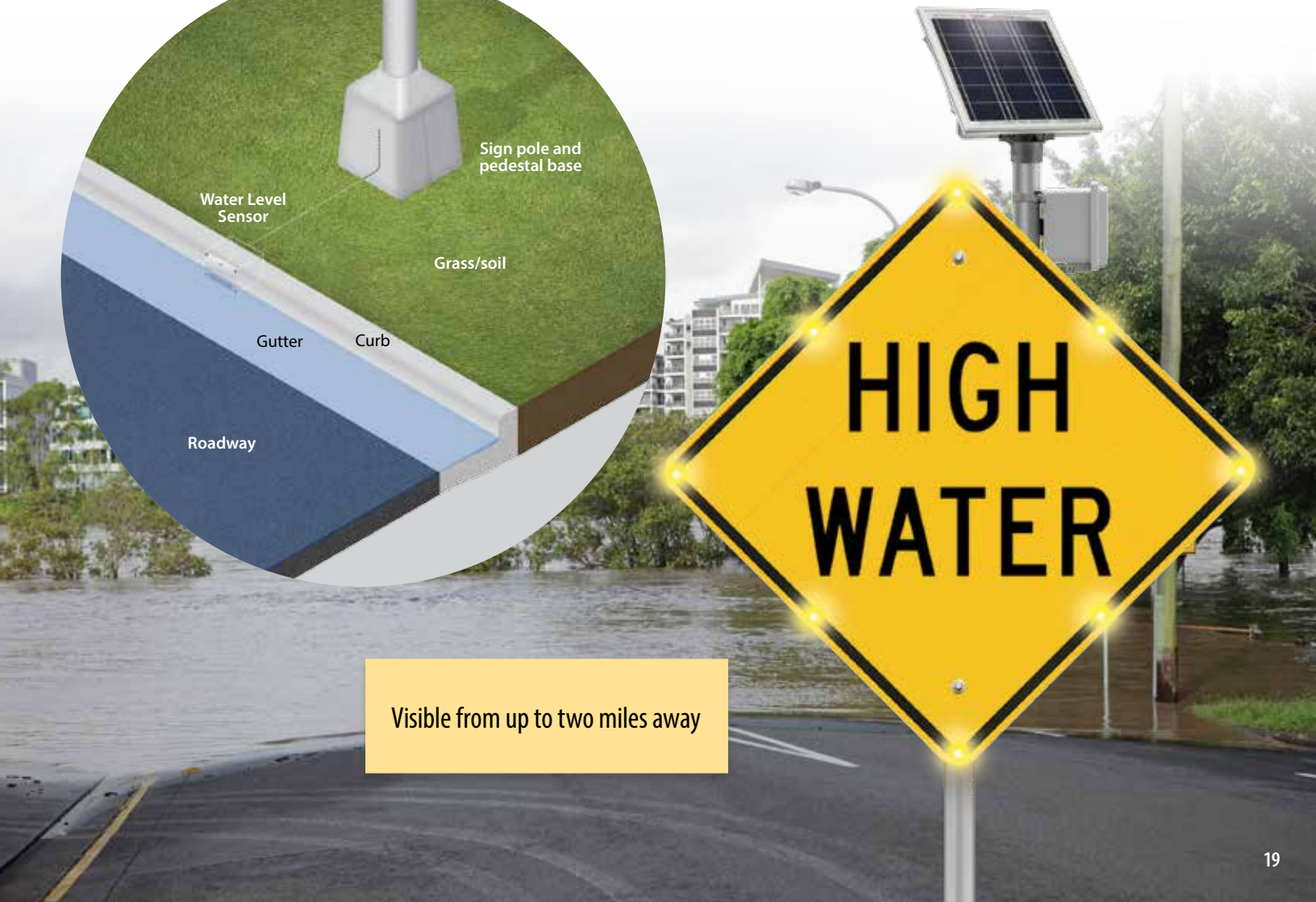
BlinkerSign® Weather Re-route Warning System

Inclement weather and disasters often leave little time to warn drivers of the proper routes to shelters or safety. These weather conditions often obscure visibility of standard signage. TAPCO BlinkerSign® LED signs give advanced warning to allow drivers to turn around and take alternate routes preventing backups. Each BlinkerSign® LED sign is built to weather harsh conditions, stand out and guide the way.

- Works independently of power grid, effective even during power outages
- Detects rising water levels then triggers BlinkerSign® LED signs to warn drivers
- Adjustable water level activation
- Works in saltwater as well as freshwater applications
- Applications include frequently flooded areas, tidal zones, underpasses, hurricane zones
- Can be activated at the site, or remotely through a key fob or central PC

2013 ATSSA INNOVATION AWARD WINNER

Sensor detects rising water levels then triggers BlinkerSign®

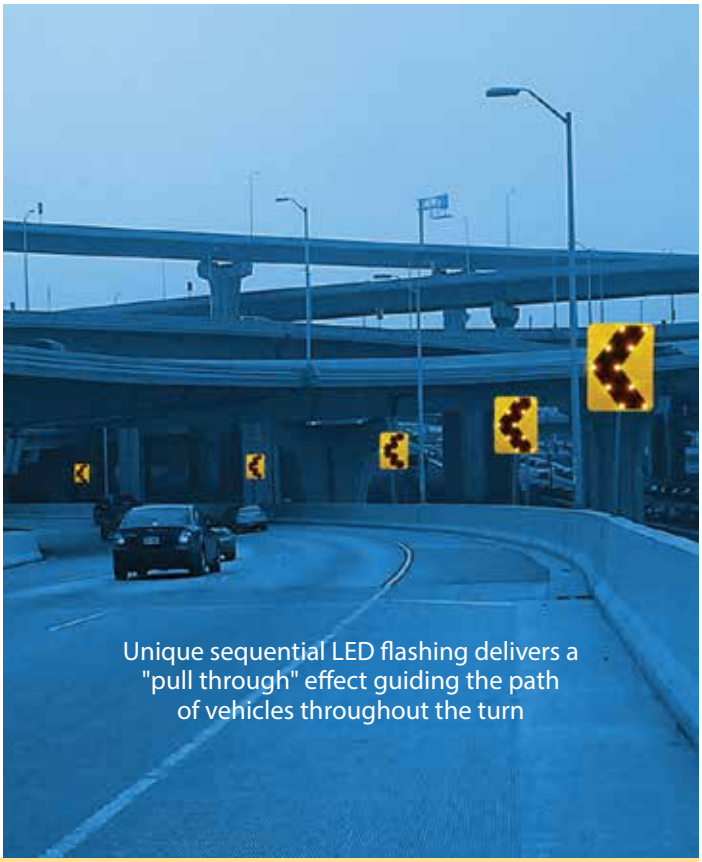


Visible from up to two miles away

BlinkerChevron™ Dynamic Curve Warning and Guidance Systems

BlinkerBeam® wireless communication, BlinkSync™ synchronization & BlinkerChevron™ LED Signs function dynamically to warn and guide motorists through a dangerous curve once activated; by directing the chevrons to flash sequentially - delivering the "Pull-through" effect. The system flash pattern and timing is easily programmed wirelessly from the Windows-based software using a PC or laptop, enabling the user to tailor the flash sequence to match the speed of traffic and the size of the curve. BlinkerChevron™ Dynamic Curve Warning & Guidance Systems:

- Reduce speed-related crashes
- Reduce head-on and cross-median crashes
- Prevent/mitigate roadway departure crashes
- Federal funding available through the "High Risk Rural Roads Program"



Unique sequential LED flashing delivers a "pull through" effect guiding the path of vehicles throughout the turn

The day and night curve warning/guidance solution

Phone 800-236-0112 FAX 800-444-0331 www.tapconet.com

BlinkerSign® LED Wildlife Warning Signs and Beacons

Nationally, there are more than a million wildlife-vehicle collisions every year, according to Washington-based Defenders of Wildlife. More than 200 of those accidents result in human fatalities.

- Flashing LED lights warn drivers in areas where large animal crossing is heavy and prevalent
- LED lights are extremely bright, properly alerting drivers during the day and at night
- BlinkerSign® Wildlife Warning systems can be designed with sensors to sense movement from any large animal, such as bears, deer, elk, caribou and moose
- The signs can flash 24 hours a day, can be turned on manually via a toggle switch or key fob, set for dusk-to-dawn or desired intervals, including migration periods
- Can be programmed with BlinkLink™ Web-based Traffic Device Monitor & Control (see page 5), saving trips to the system location for diagnostics or programming

Wildlife-Vehicle Collisions

According to the 2008 *Wildlife-Vehicle Collision Reduction Study: Report To Congress* the increase in wildlife vehicle-collisions (WVCs) is associated with an increase in vehicle miles traveled (VMT) and an increase in deer population sizes in most regions in the United States.

- More than 98 percent of WVCs are single-vehicle crashes.
- 89 percent of WVCs occur on two-lane roads.
- WVCs occur more frequently on low-volume roads.
- Compared to all motor vehicle collisions, WVCs occur more frequently on straight roads with dry road surfaces.
- The vast majority (as high as 90 percent in some states) of reported WVCs involve deer.
- WVCs occur more frequently in the early morning (5–9 a.m.) and evening (4 p.m.–12 a.m.), when deer are more active and traffic volume is relatively high.
- WVCs occur more frequently in spring and especially in fall, when animals move around more due to migration, mating, or hunting seasons.
- White-tailed deer-vehicle collisions are associated with diverse landscapes with abundant edge habitat (transitions from cover to more open habitat) and riparian habitat.

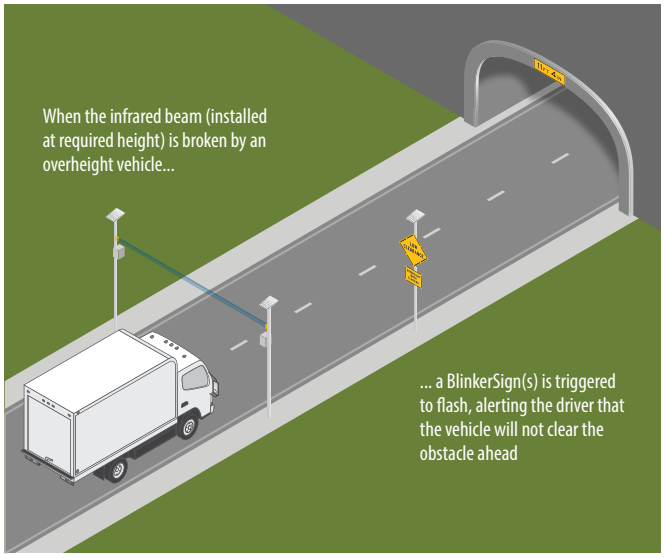
Wildlife-Vehicle Collision Reduction Study: Report To Congress, August 2008, Publication Number: FHWA-HRT-08-034

BlinkerSign® Low-Speed Overheight Warning System

- Prevent overheight truck accidents (and resulting traffic blocks) with advanced notice BlinkerSign® LED Enhanced Flashing Signs
- For low speed roads 25 MPH or less (call for high speed system options).

Infrared Photocell Sensors

- Powder coated steel hoods help protect from damage
- Transmitter and receiver are mounted in line of site at a distance of up to 65 feet
- When the infrared beam is broken the sensor produces a detection signal



Ideal for low bridges and tunnels

BlinkerSign® Emergency Vehicle Warning System

Emergency crews deserve safe, ready access to streets adjacent to their fire house or emergency vehicle location.

Emergency vehicle Flashing BlinkerSigns® provide a high-visibility advance warning to drivers approaching the emergency vehicle station egress or ingress. The BlinkerSign® can be wirelessly activated from multiple methods, including a push-button in the vehicle station or remote activation key fobs in emergency vehicles.

- Ideal for poorly lit approaches, and those with visibility challenges
- Saves lives, reduces injuries and accidents
- Solar powered systems are independent of grid power outages
- Integrates with Emergency Vehicle Preemption (EVP) systems

1 Activate the control box before vehicle(s) depart station

2 Driver activates system via remote when returning to station

Optional Opticom™ Emergency Vehicle Preemption

Brilliant, real-time alerting of departing and returning emergency vehicles

BlinkerSign® Flashing LED Enhanced Speed Limit Driver Feedback Signs

A TAPCO LED-enhanced BlinkerSign® advances the concept of driver feedback to a new level of effectiveness. At the core of each unit lies a 7-Segment or Full Matrix LED Radar Driver Feedback Sign (character height options of 9" or 12") with two LED enhanced signface options to choose from:

- "SPEED LIMIT XX, YOUR SPEED" enhanced with 6 white LEDs around signface perimeter. The white LED's flash 24/7.
- "SCHOOL, SPEED LIMIT XX WHEN FLASHING, YOUR SPEED" enhanced with 6 white LEDs around signface perimeter, and 4 amber LEDs surrounding "SCHOOL". An added programmable Time Clock allows scheduling for the amber LEDs (typically set to flash continually during times when school children are present or during school functions).

Both signface options increase the overall visibility to over 1 mile (line of sight). With the added benefit of solar power, this sign can be easily installed and deployed in minutes without the need for expensive trenching and electrical work. Extremely effective and easy to set up and program.

9" 7-Segment Economy Solar model includes: Driver Feedback sign, lockable mounting plate (for 2" square post, 2" U-channel post, or 2¼" OD round pole), IR handheld programming remote control, 60 Watt 12VDC solar panel, high efficiency power tracking solar charge controller, Solar panel mount bar, all required cabling, 20 AHr NiMH 10 year battery

9" Character 7-Segment Economy BlinkerSign®, 6 white LEDs, 30"W x 48"H signface, 60W Solar Panel	2180-DFBSL9E
9" Character 7-Segment Economy BlinkerSign®, 4 amber LEDs and 6 white LEDs, programmable Time Clock, 10 LED enhanced 30"W x 54"H signface, 60W Solar Panel	2180-DFBBSN9E

9" Full Matrix Solar model includes: Driver Feedback sign, mounting bracket, insulated battery box w/charge controller, 85W solar panel with mounting bracket, 12V 99AH battery, and conduit/wiring (to connect box, sign & panel), BlinkerRadar™ Configuration and Collection Software

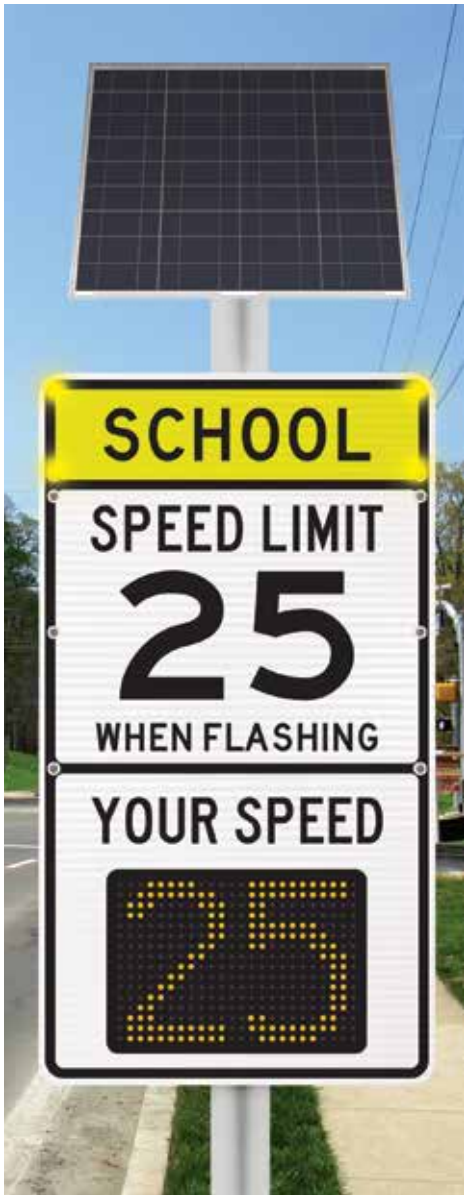
9" Character Full Matrix BlinkerSign® Speed Limit Sign, 6 white LEDs, 30"W x 48"H signface, 90W Solar Panel	2180-DFBSL9
9" Character Full Matrix BlinkerSign® School Speed Limit Sign, 4 amber LEDs and 6 white LEDs, programmable Time Clock, 10 LED enhanced 30"W x 54"H signface, 90W Solar Panel	2180-DFBBSN9

12" 7-Segment Economy Solar model includes: Driver Feedback sign, lockable mounting plate (for 2" square post, 2" U-channel post, or 2¼" OD round pole), IR handheld programming remote control, 55 Watt 12VDC solar panel, high efficiency power tracking solar charge controller, Solar panel mount bar, all required cabling, 20 AHr NiMH 10 year battery

12" Character 7-Segment Economy BlinkerSign®, 6 white LEDs, 30"W x 48"H signface, 60W Solar Panel	2180-DFBSL12E
12" Character 7-Segment Economy BlinkerSign®, 4 amber LEDs and 6 white LEDs, programmable Time Clock, 10 LED enhanced 30"W x 54"H signface, 60W Solar Panel	2180-DFBBSN12E

12" Solar model includes: Driver Feedback sign, mounting bracket, insulated battery box w/charge controller, 90W solar panel with mounting bracket, 12V 99AH battery, and conduit/wiring (to connect box, sign & panel), BlinkerRadar™ Configuration and Collection Software

12" Character Full Matrix BlinkerSign® Speed Limit Sign, 6 white LEDs, 30"W x 48"H signface, 90W Solar Panel	2180-DFBSL12
12" Character Full Matrix BlinkerSign® School Speed Limit Sign, 4 amber LEDs and 6 white LEDs, programmable Time Clock, 10 LED enhanced 30"W x 54"H signface, 90W Solar Panel	2180-DFBBSN12



2180-DFBBSN12E

2180-DFBBSN12

2180-DFBSL12

Two LED enhanced signface options to choose from. 12" BlinkerSign® models shown here.

BlinkerBeacon™ Solar Flashing LED Beacon Enhanced Radar Driver Feedback Signs

- BlinkerSign® Driver Feedback Sign with 9", 12" or 15" Character Height Display
- "SPEED LIMIT XX WHEN FLASHING, YOUR SPEED" or "SCHOOL ZONE SPEED LIMIT XX WHEN FLASHING, YOUR SPEED" signface
- Horizontally aligned (side-by-side) dual head BlinkerBeacon™ with two 12" amber LEDs, polycarbonate yellow housing
- 60W or 90W solar panel
- SPEED LIMIT signface models come with standard 24/7 flashing
- SCHOOL ZONE SPEED LIMIT signface models come with programmable Time Clock activation
- 4 ½" OD poles sold separately

Choice of 24/7 or Time Clock programmable BlinkerBeacon flashing

9" 7-Segment Economy BlinkerSign®, "SPEED LIMIT XX WHEN FLASHING, YOUR SPEED" signface, BlinkerBeacon™ with (2X) 12" amber LED and yellow housing, 60W solar panel, 24/7 flashing	2180-DFBBBSL9E
9" 7-Segment Economy BlinkerSign®, "SCHOOL ZONE SPEED LIMIT XX WHEN FLASHING, YOUR SPEED" signface, BlinkerBeacon™ with (2X) 12" amber LED and yellow housing, 60W solar panel, programmable Time Clock	2180-DFBBBD9E
9" Full Matrix BlinkerSign®, "SPEED LIMIT XX WHEN FLASHING, YOUR SPEED" signface, BlinkerBeacon™ with (2X) 12" amber LED and yellow housing, 90W solar panel, 24/7 flashing	2180-DFBBBSL9
9" Full Matrix BlinkerSign®, "SCHOOL ZONE SPEED LIMIT XX WHEN FLASHING, YOUR SPEED" signface, BlinkerBeacon™ with (2X) 12" amber LED and yellow housing, 90W solar panel, programmable Time Clock	2180-DFBBBD9
12" 7-Segment Economy BlinkerSign®, "SPEED LIMIT XX WHEN FLASHING, YOUR SPEED" signface, BlinkerBeacon™ with (2X) 12" amber LED and yellow housing, 60W solar panel, 24/7 flashing	2180-DFBBBSL12E
12" 7-Segment Economy BlinkerSign®, "SCHOOL ZONE SPEED LIMIT XX WHEN FLASHING, YOUR SPEED" signface, BlinkerBeacon™ with (2X) 12" amber LED and yellow housing, 60W solar panel, programmable Time Clock	2180-DFBBBD12E
12" Full Matrix BlinkerSign®, "SPEED LIMIT XX WHEN FLASHING, YOUR SPEED" signface, BlinkerBeacon™ with (2X) 12" amber LED and yellow housing, 90W solar panel, 24/7 flashing	2180-DFBBBSL12
12" Full Matrix BlinkerSign®, "SCHOOL ZONE SPEED LIMIT XX WHEN FLASHING, YOUR SPEED" signface, BlinkerBeacon™ with (2X) 12" amber LED and yellow housing, 90W solar panel, programmable Time Clock	2180-DFBBBD12
15" 7-Segment BlinkerSign®, "SPEED LIMIT XX WHEN FLASHING, YOUR SPEED" signface, BlinkerBeacon™ with (2X) 12" amber LED and yellow housing, 90W solar panel, 24/7 flashing	2180-DFBBBSL15E
15" 7-Sement BlinkerSign®, "SCHOOL ZONE SPEED LIMIT XX WHEN FLASHING, YOUR SPEED" signface, BlinkerBeacon™ with (2X) 12" amber LED and yellow housing, 90W solar panel, programmable Time Clock	2180-DFBBBD15E

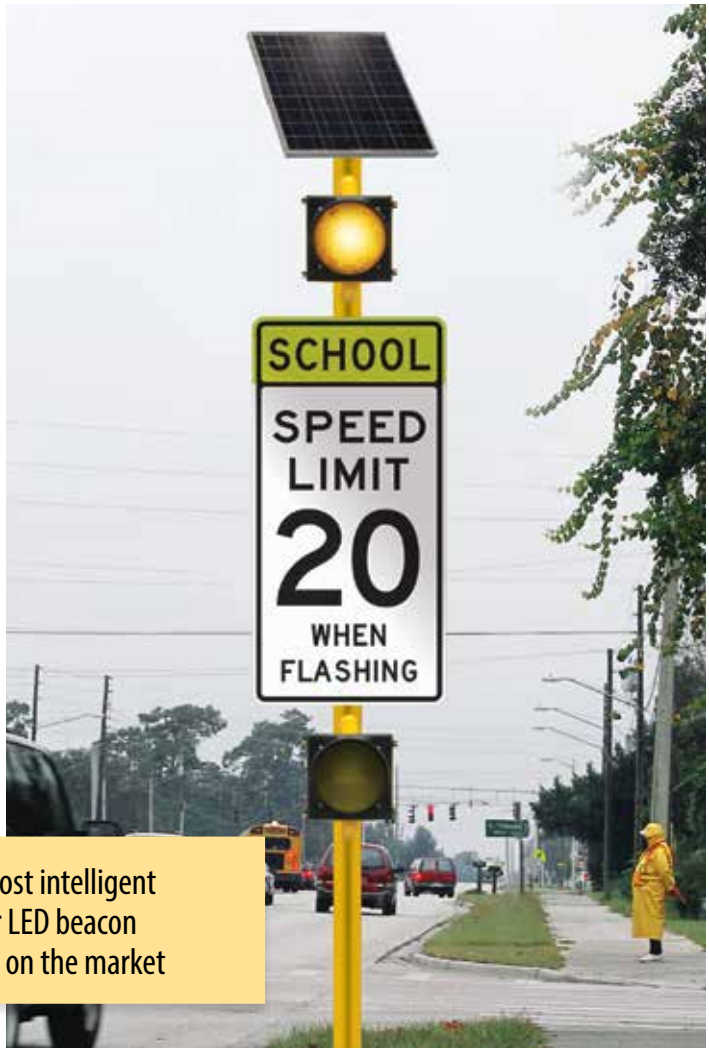
2180-DFBBBD12

Two signface configurations to choose from. 12" character BlinkerSign® models shown here.

BlinkerBeacon™ LED Beacons

For decades beacons have used as an enhancement or warning for busy crossings and heavy traffic areas. Recent LED improvement, new regulations for 12" lenses, and solar power have made this timeless device even more effective and more versatile. TAPCO's new BlinkerBeacon LED beacon incorporates these new features at a low cost-effective price. Available in single head or dual mount heads with various lens colors and bracket mounts. Black, yellow or raw polycarbonate housing is standard, and alternate materials (such as aluminum) are available. Choose from various activation methods ranging from 24/7 flashing to time clock activation and cellular notification.

- MUTCD Compliant
- Solar Powered
- Place in any location
- No electric bills
- Virtually maintenance free
- NEMA box on the back allows for timely maintenance
- Energy efficient 13 watt solar panel for single head and 26-55 watt for dual head beacons
- Call for various mounting methods
- Patented AutoBright™ circuitry automatically adjusts brightness levels, maintaining optimal LED output and extending battery life



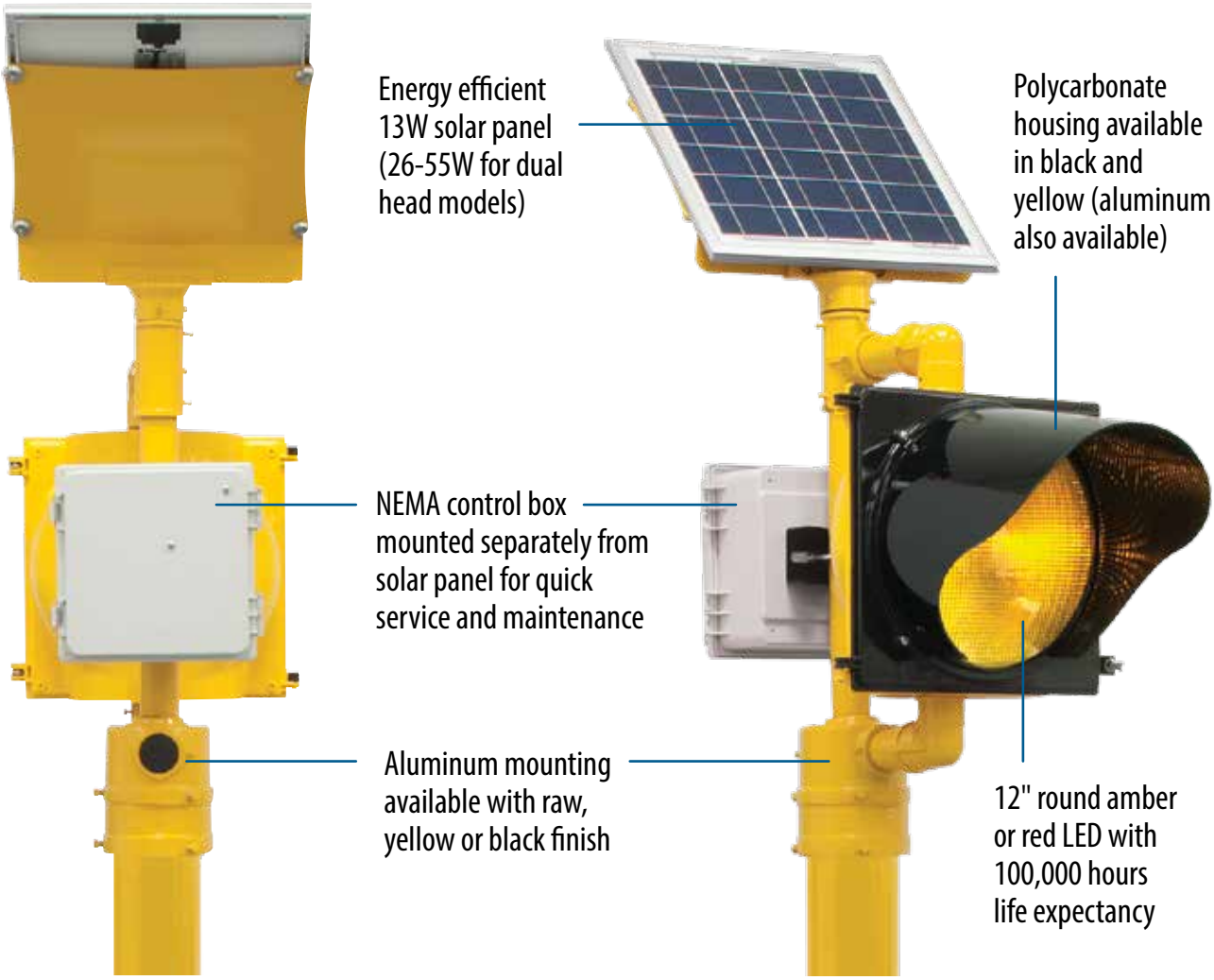
The most intelligent solar LED beacon system on the market

Dual Horizontal BlinkerBeacon™

Dual Vertical BlinkerBeacon™

Triple Vertical BlinkerBeacon™

BlinkerBeacon™ Features



BlinkerBeacon™ Highway Advisory Radio (HAR) systems

Utilizing AM or FM radio frequencies, HAR systems can broadcast messages to motorists about traffic conditions, construction project detours, emergency and evacuation information, or special event parking information. Information can be available to motorists around the clock, and battery backup keeps broadcasting messages through power outages. Attached BlinkerBeacon™ LED Beacons can be activated when an important message is being broadcast, catching the attention of motorists in heavy traffic.

BlinkerPaddle® Flashing LED Paddles

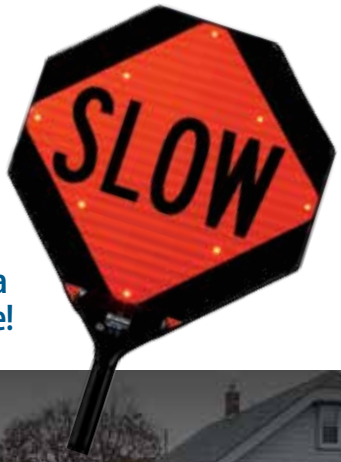
Flashing LED paddles deliver a bright warning to help protect children, crossing guards and road/emergency personnel. Eight bright LEDs on each face flash in unison, commanding the attention of oncoming motorists in all weather conditions. Thumb switch turns LEDs on for either (or both) sign faces. LEDs automatically shut off when paddle lowered below horizontal. Light-weight design minimizes arm and wrist stress (18" paddle weighs less than 2 pounds)

- School zones, temporary traffic control, emergency scenes
- Will operate for over 20 hours continuously on (3) AA rechargeable NiMH batteries
- Includes (1) BlinkerPaddle® LED paddle, (3) rechargeable NiMH batteries, (1) 120v AC wall charger , (1) 12v DC car charger

120v AC wall charger

Wrist strap

Rechargeable NiMH batteries



20 hrs. of flashing on a single charge!

Portable Base

- Rubber base holds staff vertically for BlinkerPaddle® LED paddle rotation

Nylon Carrying Bag

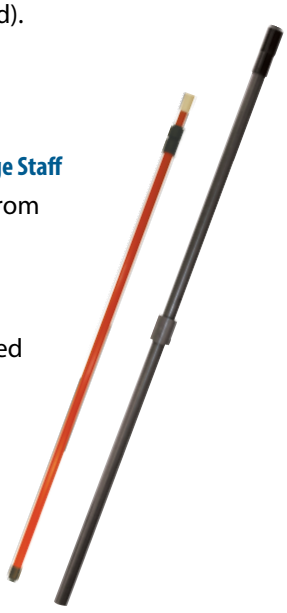
- Black Cordura nylon carrying case. Fits two 18" or 24" paddles and all accessories (not included).

Adjustable Orange Staff

- Adjustable from 54" to 84"

60" Gray Staff

- 60" assembled



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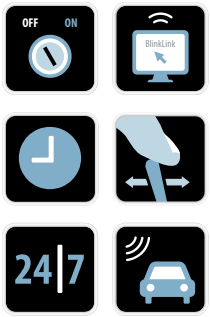
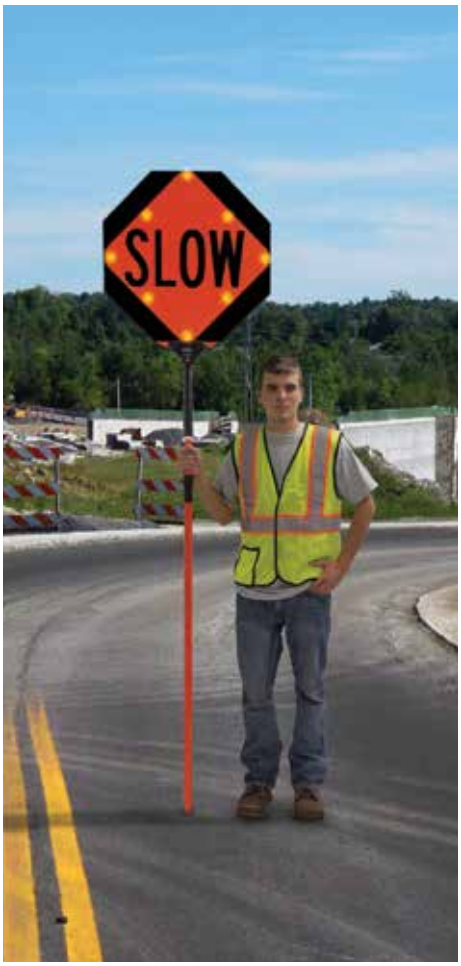
BlinkerSign® Work Zone Applications

- Cleaner look and lower cost than a standard dual beacon system or automated flagger
- More square footage of light than other systems
- LED (orange or amber) outline warns drivers of a workzone location.
- Provides on-the-job safety for contractors
- Solar recharge allows DOT or contractors to turn off or put away after job and sign will continue to recharge on its own
- Some DOTs starting to offer contractors incentives to switch over to this system
- Remote activation option to keep workers away from hit zone



Quick deploying, foldable BlinkerSign® models are available.

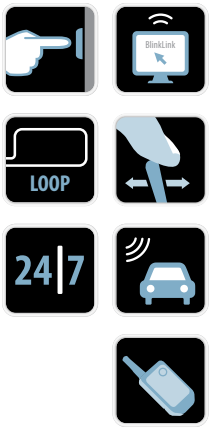
- Solar LED-enhanced foldable sign
- Collapsible sign frame and heavy duty stand allow for fast deployment and compact storage when not in use



BlinkerSign® and BlinkerBeacon® Rail Crossing Signs

Infrequently used railroad crossings can become virtually ignored by daily traffic, especially crossings on plant grounds or private property. A BlinkerSign® flashing LED railroad crossing sign grabs the attention of a driver with bright flashing LEDs. From LED Stop signs, Railroad Crossing crossbucks, advance warning W10-1 Railroad and Do Not Stop on Track signs, TAPCO BlinkerSign® LED Enhanced signs gives a dangerous railroad crossing the necessary warning it deserves.

- Tie into existing gate operators
- Solar powered,
- Wireless communication
- Patented AutoBright™ circuitry automatically adjusts brightness levels



BlinkerSign® & BlinkerBeacon® integrate with existing gate operators, loop detectors and vehicle sensors.

Parking & Indoor Applications

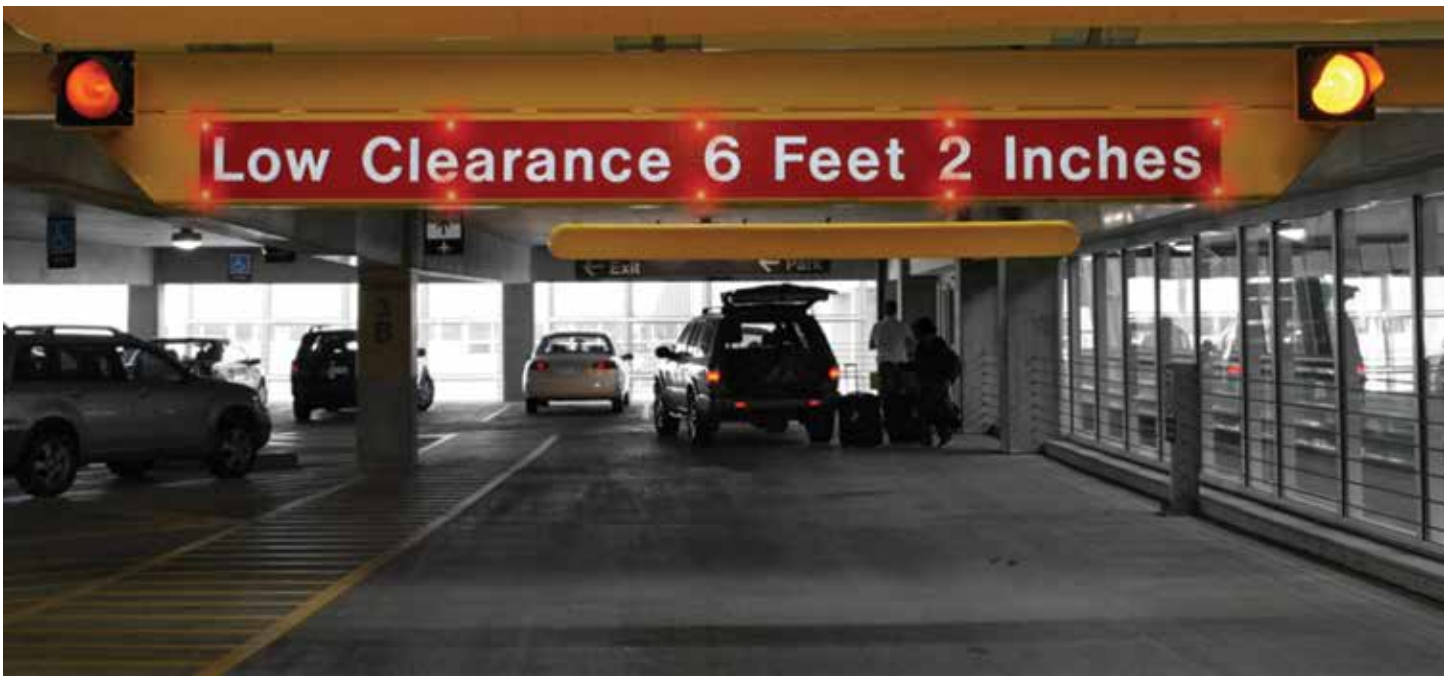
While parking structures are very convenient in areas where little street parking is available, they can be hazardous if not signed and highlighted effectively. People don't think of accidents when they think of parking structures but they can be the scene of many vehicle and pedestrian accidents.

It is important to warning both drivers and pedestrians of hidden dangerous exits as well as directional parking rows. In instances where the design can be extremely hazardous enhancing the signage is wise thing to do.

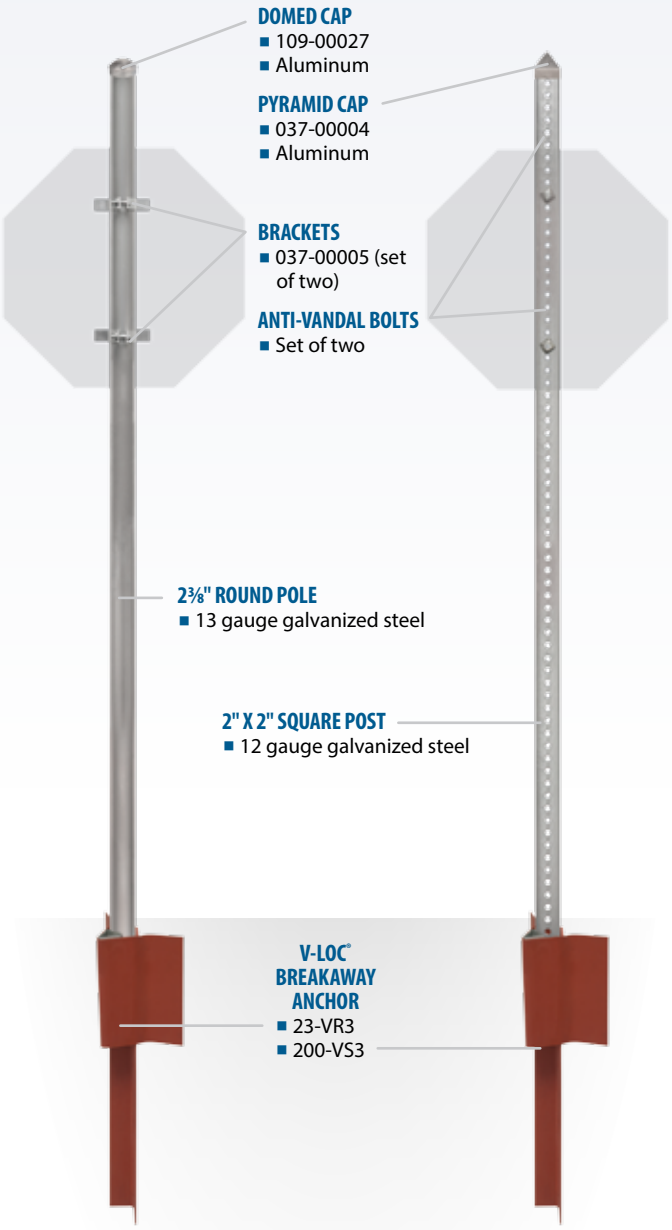
TAPCO's parking solutions can be designed for all parking situations such as blind exits, overhead/ clearance signage, row highlight designation of one way rows and many others. TAPCO can customize a solution to fit your needs.

- Parking applications can be integrated with existing gate operators and loop detectors

Keep pedestrians and drivers safe, while protecting yourself against pedestrian accident liability



Standard Pole Packages



Standard Breakaway Pole Packages

An economical standard breakaway pole for street signs or smaller BlinkerSign® LED signs

10' round pole package, V-Loc® breakaway anchor	373-90001
12' round pole package, V-Loc® breakaway anchor	373-90004
10' square post package, V-Loc® breakaway anchor	373-90002
12' square post package, V-Loc® breakaway anchor	373-90005

Decorative Pole Packages

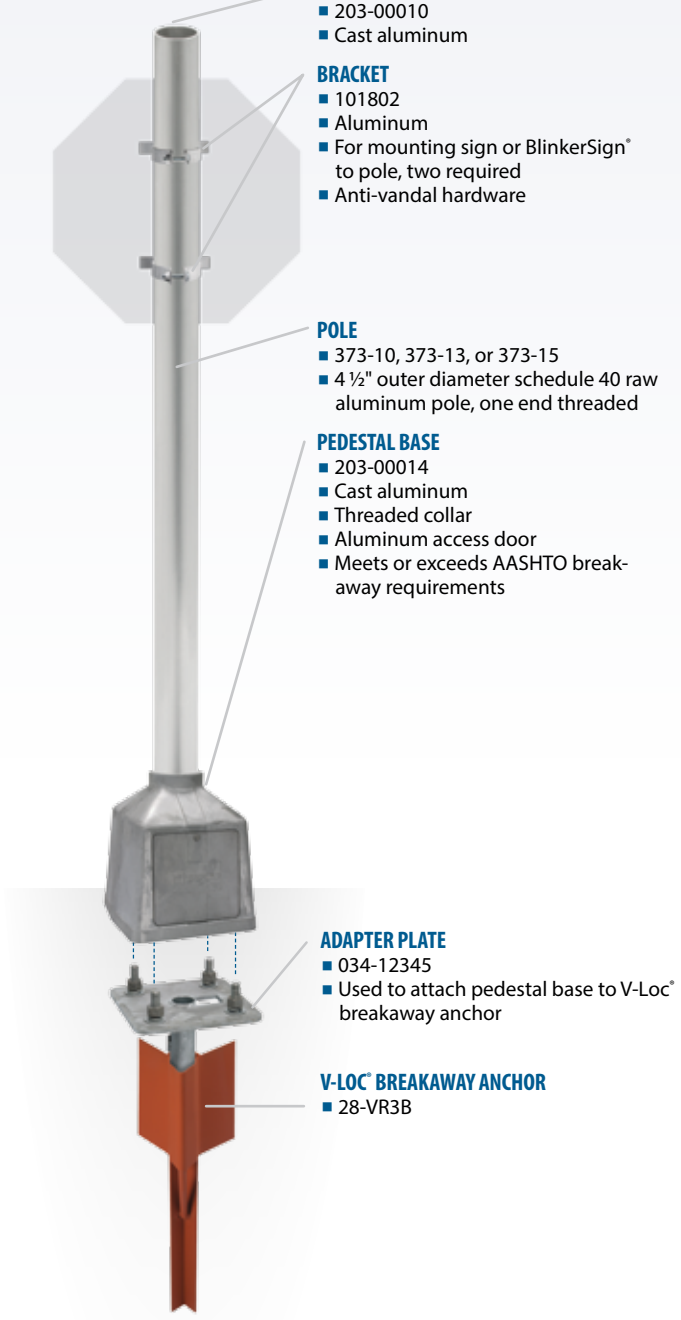
3" OD Pole packages shown here

Decorative Breakaway Pole Packages

Fluted decorative poles for decorative way finding signage, BlinkerSign® LED signs. 4" pole required for RRFB systems

12' x 3" OD decorative pole package, anchor bolts (for concrete)	203-00181
12' x 3" OD decorative pole package, V-Loc® anchor (for soil)	203-00182
12' x 4" OD decorative pole package, V-Loc® anchor (for soil)	203-00183
12' x 4" OD decorative pole package, anchor bolts (for concrete)	203-00184
15' x 4" OD decorative pole package, anchor bolts (for concrete)	203-00185

Heavy Duty Pole Packages



POLE CAP
- 203-00010
- Cast aluminum

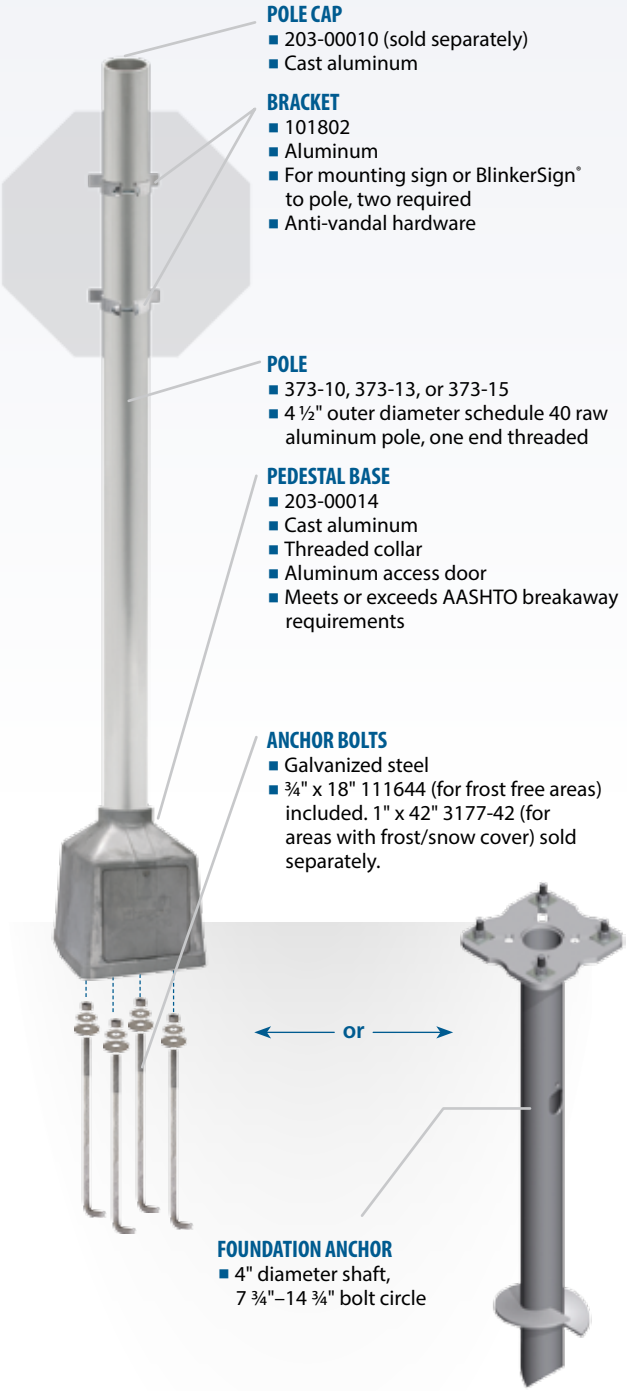
BRACKET
- 101802
- Aluminum
- For mounting sign or BlinkerSign® to pole, two required
- Anti-vandal hardware

POLE
- 373-10, 373-13, or 373-15
- 4 ½" outer diameter schedule 40 raw aluminum pole, one end threaded

PEDESTAL BASE
- 203-00014
- Cast aluminum
- Threaded collar
- Aluminum access door
- Meets or exceeds AASHTO break-away requirements

ADAPTER PLATE
- 034-12345
- Used to attach pedestal base to V-Loc® breakaway anchor

V-LOC® BREAKAWAY ANCHOR
- 28-VR3B



POLE CAP
- 203-00010 (sold separately)
- Cast aluminum

BRACKET
- 101802
- Aluminum
- For mounting sign or BlinkerSign® to pole, two required
- Anti-vandal hardware

POLE
- 373-10, 373-13, or 373-15
- 4 ½" outer diameter schedule 40 raw aluminum pole, one end threaded

PEDESTAL BASE
- 203-00014
- Cast aluminum
- Threaded collar
- Aluminum access door
- Meets or exceeds AASHTO breakaway requirements

ANCHOR BOLTS
- Galvanized steel
- ¾" x 18" 111644 (for frost free areas) included. 1" x 42" 3177-42 (for areas with frost/snow cover) sold separately.

or

FOUNDATION ANCHOR
- 4" diameter shaft, 7 ¾"–14 ¾" bolt circle

Heavy Duty Double Breakaway Pole Packages With V-Loc® Breakaway Anchor

A double breakaway system for large signage, BlinkerSign®, and BlinkerBeacon™. Soil installation.

10' heavy duty pole package, V-Loc® breakaway anchor	2180-00220
13' heavy duty pole package, V-Loc® breakaway anchor	2180-00221
15' heavy duty pole package, V-Loc® breakaway anchor	2180-00222

Heavy Duty Breakaway Pole Packages

For large hard wired or solar systems. Breakaway compliant. Poured concrete foundation (anchor bolts) or soil installation (foundation anchor).

10' heavy duty pole package, anchor bolts (for concrete)	107889
13' heavy duty pole package, anchor bolts (for concrete)	101919
15' heavy duty pole package, anchor bolts (for concrete)	101920
10' heavy duty pole package, foundation anchor (for soil)	109351
13' heavy duty pole package, foundation anchor (for soil)	109352
15' heavy duty pole package, foundation anchor (for soil)	109353

BlinkerSign® Features

BlinkerStop® LED STOP sign yielded 52.9% reduction in blow-throughs

Increase visibility at high-incident locations • Flashing LEDs get noticed day and night

Visible up to 2 miles at night • 30 day Autonomy (flashing 24 / 7)

PATENTS #6,943,698; #6,693,556

BlinkerSign® Funding and Resources

Funding Sources

- MAP 21 - Moving Ahead for Progress in the 21st Century Act
- "High Risk Rural Roads Program" for rural major or minor collectors, or rural local roads.
- "Highway Safety Improvement Program" - FHWA funding resource
- "Alcohol Traffic Safety and Drunk Driving Prevention Incentive Grants" - For States to adopt effective programs to reduce crashes resulting from persons driving while under the influence of alcohol
- "Work Zone Safety Grants" - Highway work zone safety training and guidelines to prevent and reduce work zone injuries and fatalities
- Bicycle Transportation Alliance (BTA) "Pedestrian Safety Enforcement Mini-grants"
- CMAQ - Congestion Mitigation and Air Quality

Guidelines and regulations

- MUTCD - Manual on Uniform Traffic Control Devices
- State Departments of Transportation (DOT's)
- AASHTO - American Association of State Highway and Transportation Official

Resources

- PEDSAFE - Planning, safety and mobility tool
- BIKESAFE - Planning, safety and mobility tool
- Walkinginfo.org - Walking basics, resources and solutions
- BicyclingInfo.org - Bicycling basics, resources and solutions
- Metropolitan Planning Organizations (MPO's) - Index of local MPO's throughout the nation

Traffic organizations

- ITE - Institute of Transportation Engineers
- ATSSA - American Traffic Safety Services Association
- IMSA - The International Municipal Signal Association
- APWA - American Public Works Association
- ITS America - Intelligent Transportation Society of America

TAPCO®

1-800-236-0112 • www.tapconet.com • blinkersales@tapconet.com

Traffic & Parking Control Co, Inc. 5100 West Brown Deer Road, Brown Deer WI 53223 U.S.A. Phone 800-236-0112
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