

Avoid as Many as Four Out of Five Accidents with an In-Roadway Warning Light System



The Problem

Thousands of Pedestrians are Killed or Injured Every Year

- Fatalities in 2002
 - 5,000
 - 71% in urban areas
 - 89% in normal weather
 - 65% at night
- Injuries in 2002
 - 71,000
 - One every 7 minutes

Source: US DOT HS Traffic Safety Facts 2002

Contributing Factors

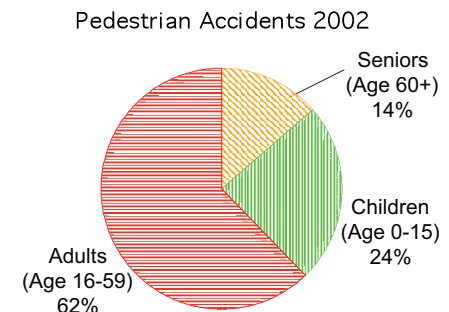
- Vehicle Speed
 - Roads designed to maximize traffic flow
 - Higher speeds increase fatality rates
 - When hit by a car traveling 40 mph, a pedestrian has only a 15% chance of survival
 - At 20 mph, this survival rate increases to 85%
- Visibility
 - Drivers don't see pedestrians because of:
 - Traffic (moving or stopped vehicles can hide pedestrians)
 - Parked cars
 - Weather conditions
 - Other visual obstructions
 - Foliage, curves in the road, etc.

Source: UK Dept. of Transportation "Killing Speed and Saving Lives."

Who is Most At Risk?

- Neighborhood Streets are the Most Dangerous
- Children and Seniors are Disproportionately at risk

Source: Mean Streets

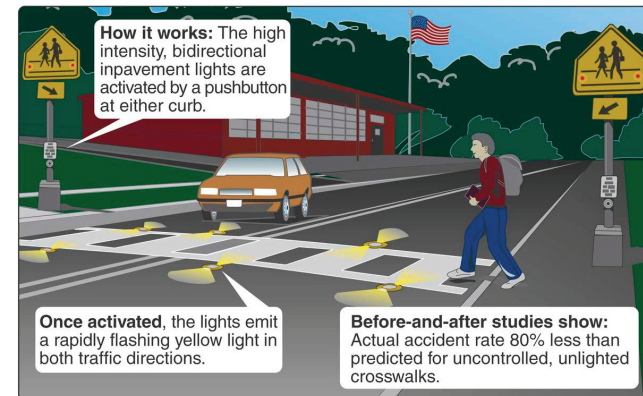


Children & Seniors Account for 38% of 76,000 Total Pedestrian Accidents in 2002
Source: US DOT HS Traffic Safety Facts 2002

Possible Solutions

- Enhanced law enforcement
- Speed bumps
- Bulb outs (Necked Intersections)
- Narrow traffic lanes
- Traffic education programs
- **Crosswalk In-Roadway Warning Light Systems (IRWLS)**

The Solution: IRWLS



Lighted Crosswalk Operating Basics

- Pedestrian activates system
- In-pavement fixtures along the edge of crosswalk emit flashing light
- Drivers see lights and are cautioned earlier – often before pedestrian enters crosswalk
- Drivers slow sooner
- Accidents become less frequent
- Everybody is safer!

Why Install an IRWLS at a Crosswalk?

- They Work – Up to Four Out of Five Accidents Avoided
- Approved by Federal Highway Administration
 - Manual on Uniform Traffic Control Devices (MUTCD)
 - Part 4L, added in Millennium Edition (year 2000)
- Advanced Warning Results In
 - = Slower speed
 - = Fewer accidents
 - = Fewer fatalities

Why Install an IRWLS at a Crosswalk?

- Before-and-after studies show dramatic results:
 - Decrease in driver approach speeds
 - Increase in yielding to pedestrians
 - Study of 100 lighted crosswalks
 - 427 million vehicle crossings
 - Actual accident rate 80% less than predicted for uncontrolled, unlighted crosswalks

Source: Miller, Rock "In-Pavement Flashing Crosswalks: State of the Art."

Why Install an IRWLS at a Crosswalk?

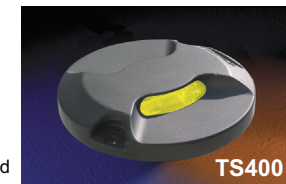
- Economical Benefits
 - A fraction of the cost of a traffic signal
- Easy to Use
 - Push button activated
- Easy to Understand
 - Standard FHWA caution signal flash rate
- Easy to Install and Maintain
 - Can be done by city personnel
 - 5 to 10 years between lamp/LED changes
- Exceptionally Bright Fixtures
 - 200 times brighter than California DOT minimum
 - Visible at 200 yards or more - day, night, or fog

IRWLS Crosswalk System Components

- In-pavement Fixtures
- Crosswalk Control System
- Pedestrian Activation Devices
- Pre-warning Flashing LED Signs
- Pre-warning In-pavement Fixtures

IRWLS Crosswalk Components Crosswalk In-pavement Fixtures

- TS400
 - Superior Brightness: 600,000 candela/m²
 - Selectable Optics (Wide and Narrow Beam)
 - Outstanding Durability: Corrosion resistant anodized aluminum
 - Low Maintenance: Self-cleaning, Pre-focused
 - Low Power: 12 volt LED light source (8.4 watts)
 - TSC's 5-Year Limited System Warranty



IRWLS Crosswalk Components Crosswalk In-pavement Fixtures

■ TS500

- Superior Brightness: 600,000 candela/m²
- Selectable Optics (Wide and Narrow Beam)
- Outstanding Durability: Corrosion resistant stainless steel
- Low Maintenance: Self-cleaning, Pre-focused
- Low Power: 12 volt LED light source (8.4 watts)
- TSC's 5-Year Limited System Warranty



IRWLS Crosswalk Components Crosswalk In-pavement Fixtures

■ TS600

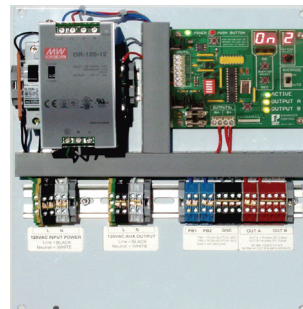
- Snowplow Proof: Fully Flush with Road Surface
- Superior Brightness: 600,000 candela/m²
- Outstanding Durability: Corrosion resistant anodized aluminum
- Low Maintenance: Self-cleaning, Pre-focused
- Low Power: 12 volt LED light source (8.4 watts)
- TSC's 5-Year Limited System Warranty



IRWLS Crosswalk Components Crosswalk Control System

■ TS1000

- AC and Integrated Solar Powered Operation
- Standard and Enhanced Flash Pattern Generation
- Auto Flash-Pattern Sequencing Mode
- Support for Distant Pre-warning Devices
- Digitally Adjustable Activation Period
- Continuous Activation Mode
- Activation Period Reset Mode
- Compatible with all Std. Activation devices (Control Card/Device Options)
- Easy Installation
- NEMA-4 (AC Model), MEMA-3R (SP Model) Enclosure
- TSC's 5-Year Limited System Warranty



IRWLS Crosswalk Components Pedestrian Activation Devices

■ Activation Options

- Standard Pedestrian Push Button Station
- Pedestrian Push Button Station W/Audio Message
- In-Pavement Pedestrian Detection Pad

IRWLS Crosswalk Components Pedestrian Activation Devices

■ AC-X2/XAV2 Pedestrian Push Button Station

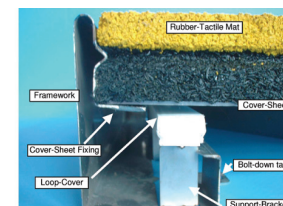
- Instructional Plate and ADA Push-button
- Field Adjustable Directional Arrow
- LED Model: Flashing Set of LEDs
- Talking Model: Provides Pre-recorded Voice Message (English, English & Spanish)
- Talking Model: Automatic Volume Gain Control
- Adjustable Message Repetition (1-3, Continuous)



IRWLS Crosswalk Components Pedestrian Activation Devices

■ AC-PEDXPAD In-Pavement Pedestrian Detection Pad

- Two or Four Pad System
- Includes Loop Detector
- Adjustable Activation Weight
- Simple one person installation
- Laser-cut Stainless Steel Construction
- Replaceable UV Stable Rubber Mat



IRWLS Crosswalk Components Pre-warning Flashing LED Signs

■ TS30 MUTCD Compliant Flashing LED Crossing Signs

- Pedestrian and School Crossing Models
- IRWL System or Stand-alone operation
- Bright, flashing LEDs visible from up to 200 yards away
- Fluorescent yellow-green diamond grade sheeting
- DC or AC Operation Options
- 30" and 36" Options

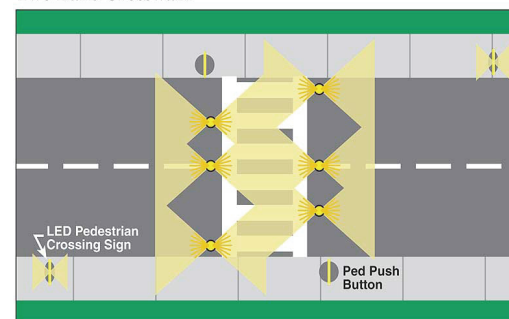


School Crossing (S11)

IRWLS Crosswalk Systems Typical Fixture Layout

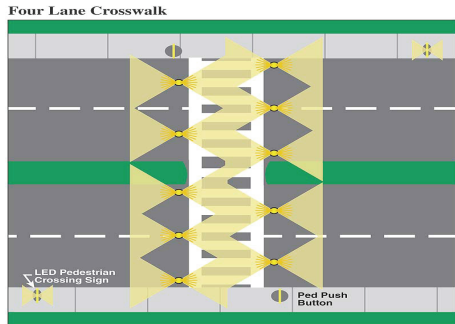
Two Lane Road Layout

Two Lane Crosswalk



IRWLS Crosswalk Systems Typical Fixture Layout

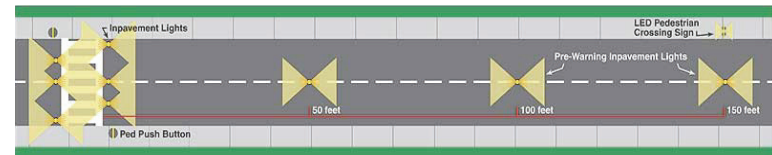
Four Lane Road Layout



IRWLS Systems

Crosswalk Application with Early Warning Lights

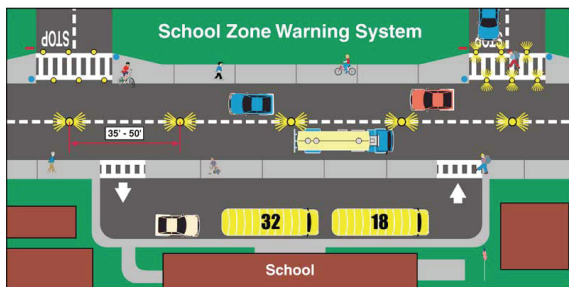
- Additional early warning helps reduce approach speeds
 - Three (3) lights preceding each side of crosswalk
 - Typical spacing: 50'



IRWLS Systems

School Zone Application

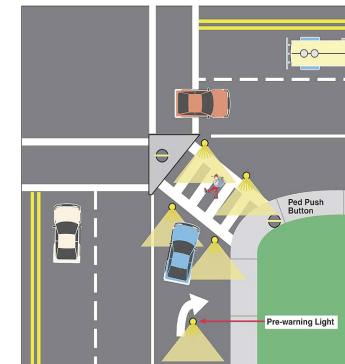
- In-pavement lights along entire school zone
- Lights flash during high-student traffic times – before and after school



IRWLS Systems

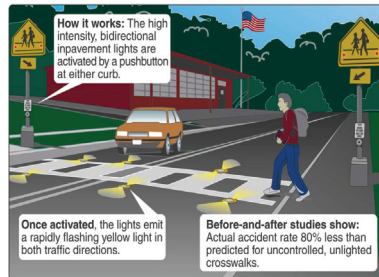
Free Right Turn Warning System Application

- Uni-directional Fixtures
- Push-button Pedestrian Station
- Short Duration



Conclusion

- Lighted Crosswalks Improve Pedestrian Safety!
- FHWA Approved Method
 - Improves Driver Ability to Detect Pedestrians
 - Slows Driver Approach Speeds
 - Reduces Pedestrian Injuries and Fatalities



Contact Information



Contact Traffic Safety
Corporation Today

1.888.446.9255

And Visit Us At

www.xwalk.com