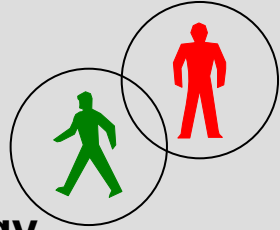


SNUG 2006



Puffin Crossings revisited and emerging pedestrian technology

PUFFIN, TOUCAN, PEGASUS
(a short history and overview)

In-pavement lights

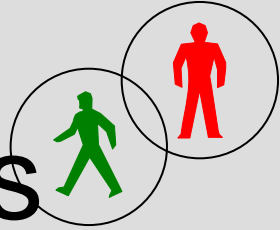
Controlled and non-controlled crossings

Pedestrian Detection

Pros & Cons, Direction of travel

Dynamic signage

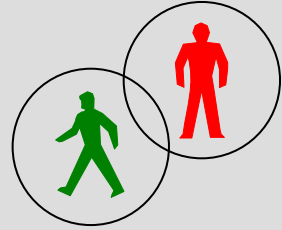
Basic PUFFIN Components



- Nearside signals
- Kerbside detection (call cancel)
- On Crossing detection (extension of cross phase)



Controlled intersections



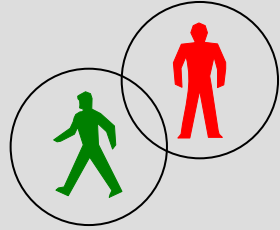
Pegasus - Horses



Toucan – Peds & Cycles



Methods of detection/activation (Non metallic bodies)



Surface

Push button

Light beam bollard

Piezo

Overhead

InfaRed

Microwave

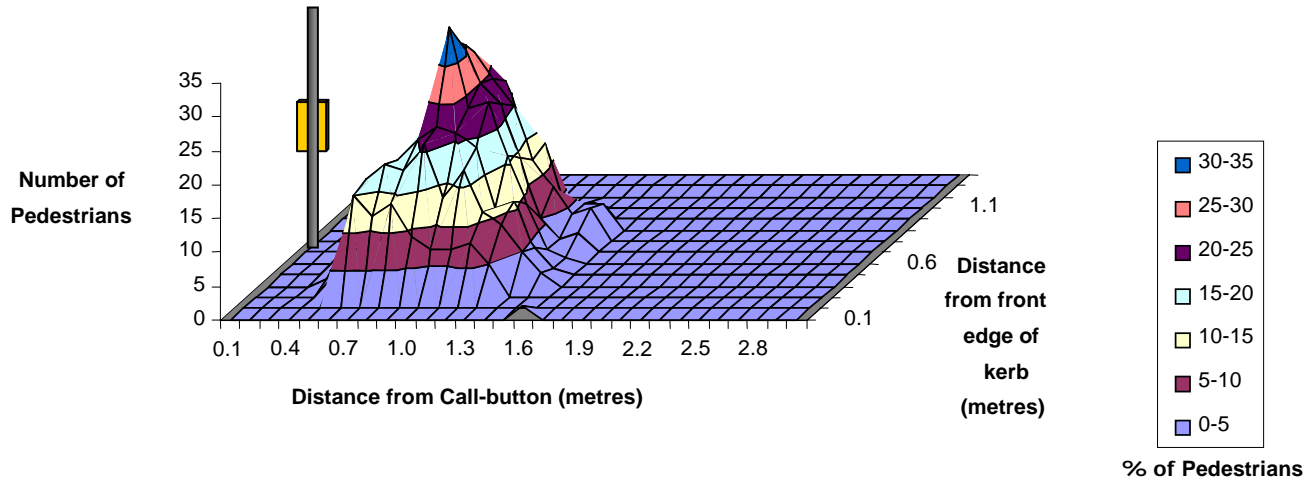
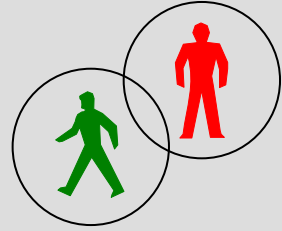
Video

Subsurface

Inductive Loop

Load cell

Pelican Crossing Pedestrian Wait Zone No Tactiles



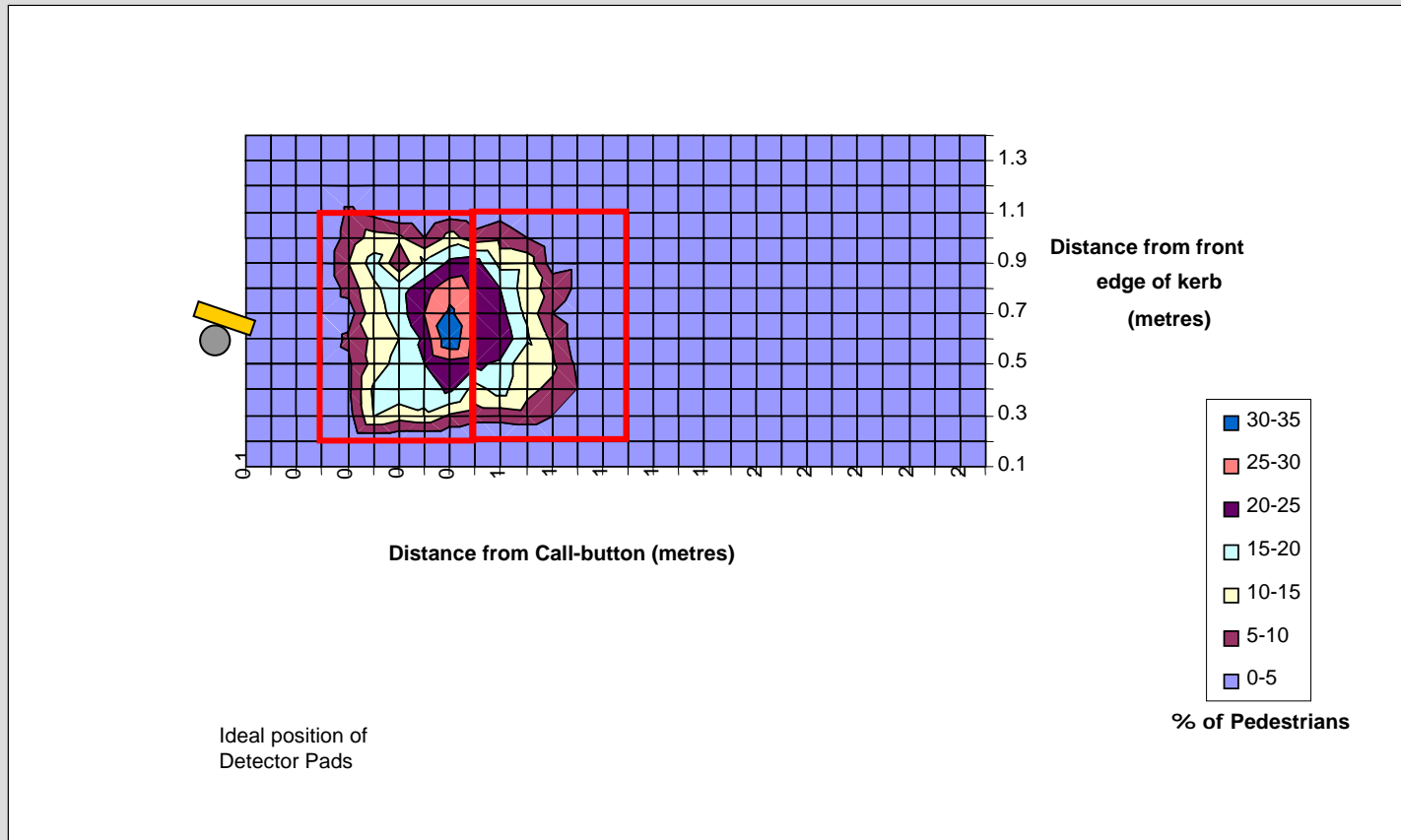
Maidenhead, Berkshire, UK

Pedestrian Wait Zone

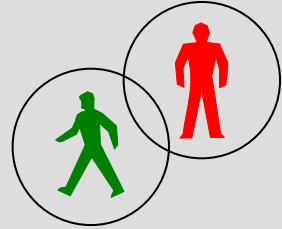
No Tactiles



Only pedestrians who pressed call-button and waited for cross signal.

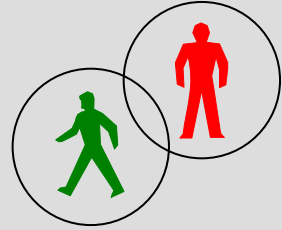


What to look for in a pedestrian detection system



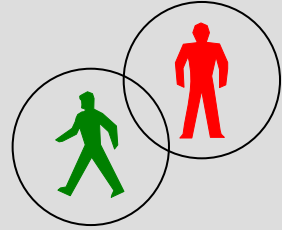
- Not affected by climatic conditions.
- Not affected by night time conditions.
- Not affected by vibration caused by passing vehicles.
- Not affected by thermal signature (exhaust and/or engine heat).
- Connects directly to legacy infrastructure.
- No poles or other street furniture required.
- Able to take vehicle loads if necessary.
- Easy installation - can be installed by semi skilled labour with minimum training.
- Able to be connected side by side - knockouts for cables.
- Are there connections within the unit that can fail due to moisture or corrosion.
- Easy connection - no polarity concerns.
- Easy servicing – only if needed
- No messy, sealant used during installation or servicing.
- The mat (if included) complies with international standards for “Tactiles”.

continued...



- Is the mat is replaceable?
- Is there an option to have flat mat for bicycle detection etc?.
- Option for graphics or lettering to be moulded into the mat?
- Mats available in a range of colours?
- When the mats and cover plate are removed for inspection, does the loop-wire remains in the framework? – no dangling leads to contend with.
- Can induction and sensitivity can be altered to suit particular applications where several units are used in series?
- Different options for installation – bolted to preset concrete pad or bedded into wet concrete.
- Can pavers etc can be laid right up to the outside edge without obstruction (95mm clear face)
- Tested to a standard e.g. UKHA Type Approval TR 2182b.
- Site tested in New Zealand.
- Very definite “Must Detect” and “Must Not Detect” zones - suitable for narrow footpaths.
- Compatible with solar powered systems.

Optional extra signage



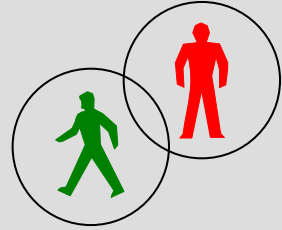
- Pole sticker
- Graphics in mat
- Temporary sandwich board
- School notices
- Local press



■ Mat graphics

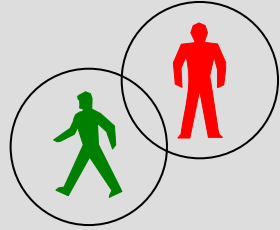


Payback Table Template



Number vehicles/day	% vehicles stopped needlessly	Number stopped needlessly	Red light duration (seconds)	Total minutes stopped/day	Cost of vehicle stopping/minute*	Cost of stopping/week	Pedestrian Detector Installation Cost**	Payback period (weeks)***
		0		0		\$0.00		
5000	10	500	30	250	\$0.77	\$1,347.50	\$10,000.00	7.27
Complete blue sections								
Yellow sections calculate automatically						*Excludes the cost		
Example						** Pedestrian Detector component only.		

Direction of Travel



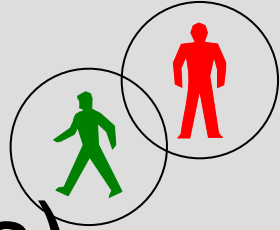
In-pavement lights activated by Ped Pads can be less effective if extra phases are called by the pedestrian stepping on the pad as he/she leaves the road.

We have drafted a possible solution using binary logic to determine direction of travel.

The purpose of this is to avoid phantom demands without missing genuine demands.

Example

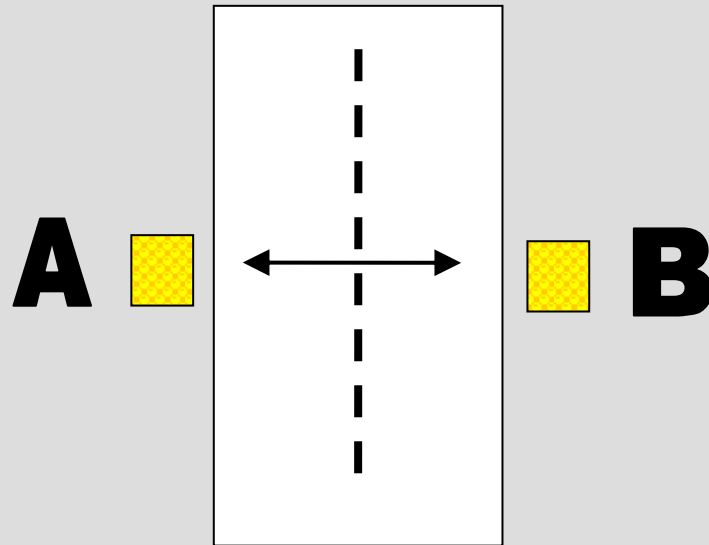
(induction based detector pads)



Fast cross time = 5 sec

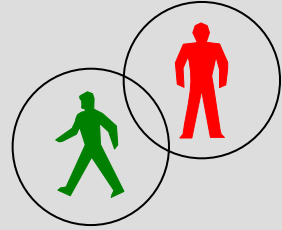
Slow cross time = 10sec

Single Carriageway



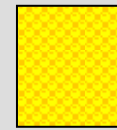
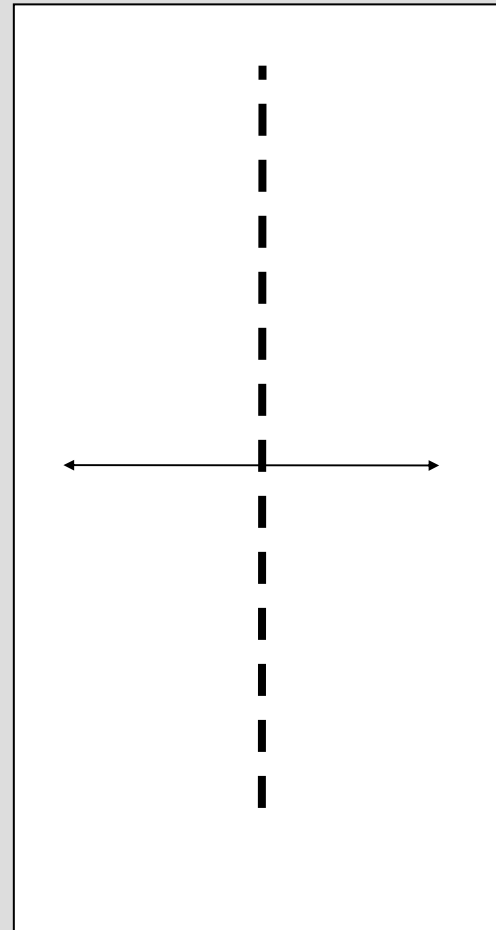
2 channel Loop-Detector

Rules

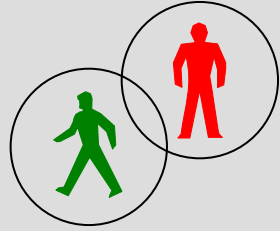


1. A demand will only be ignored if it is from the opposite side to the previous demand and...
2. ...if it occurs within the preset timeframe e.g 5 - 10 secs.
3. Only one demand will be ignored per cycle.
4. If a demand is a “pause” (say greater than 1 sec) rather than a “pulse” is will not be ignored

A



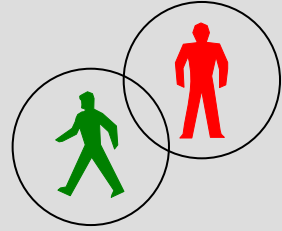
B



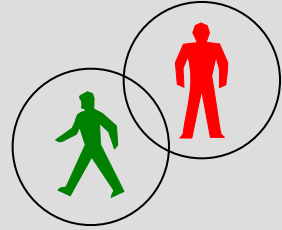
What ifs...

- Multiple peds in both directions
- “J-walkers”
- ???

In-Pavement Lights



Dynamic signage



Lake Rotoma, NZ



Leicestershire, UK

