ROAD SAFETY BENEFITS OF PUFFIN PEDESTRIAN FACILITIES

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Structure of the Presentation

- Background to project
- Sites used
- Accident data obtained
- Changes in accident frequency and severity
- Summary
Background 1

- **Puffin facilities have been available for some time**
  - Nearside displays – make pedestrians look towards approaching traffic
  - On-crossing and kerbside pedestrian detection

- **In recent years have seen improvements in**
  - Guidance including timings
  - Equipment
  - Installation and commissioning standards

- **DfT research has already shown well installed Puffin facilities offer**
  - Significant reductions in delay
  - Improvements in pedestrian convenience
Background 2

- Research by TfL has shown road safety benefits of mid block Puffins
- This paper presents the results of a large scale assessment of the road safety benefits of Puffin facilities
  - Conversion of farside to nearside facilities
  - At mid block crossings and junction signals
  - Installed according to current advice
- Project was commissioned by DfT and undertaken by TRL with support from IRC
- Project substantially complete and JCT Symposium is the first reporting of the results
Site Selection - Requirements

- Sites converted from farside to nearside facilities
  - Minimum three year before data
  - Three year after data
  - No significant changes in the before and after situations other than conversion to Puffin
- Mid block and junction signals
  - Different control strategies
- For junctions
  - Three and four arm junctions
  - All red pedestrian stage and parallel pedestrians
- National distribution of sites
- Installed and set up as Puffin Good Practice Guide
Site Selection - Process

• **Selection process**
  - Requested LAs to put forward sites
  - Review of specifications and drawings
  - Site visits to confirm selection

• **Plenty of mid block sites but locating junction signals that met criteria more difficult**

• **Site used in**
  - Cheshire  
  - East Sussex
  - Greater Manchester
  - London  
  - Devon
  - Essex
  - Hampshire
  - York
Sites in North

KEY:
- Mid block
- Junction

Note: Some icons denote multiple sites
Sites in South

Note: Some icons denote multiple sites
Accident Data - Overview 1

• 50 sites
  — 40 mid block crossings
  — 10 junctions
• Accidents within 100m on all approaches
• 700 site years of data
• 1120 accidents assessed
  — 214 accidents at junctions
  — 906 at mid block crossings
• 823 accidents involved vehicles only and 297 pedestrians and vehicles
• Of the 297 pedestrian accidents
  — 47 at junctions
  — 250 at mid block sites
Accident Data – Overview 2

• Accident severity, all sites
  — 12 fatal
  — 115 serious
  — 993 slight

• Accident severity, mid blocks
  — 10 fatal
  — 93 serious
  — 803 slight

• Accident severity, junction signals
  — 2 fatal
  — 22 serious
  — 190 slight
## Analysis – Interim Statistical Analysis

<table>
<thead>
<tr>
<th>ACCIDENT GROUP</th>
<th>Reduction in accident rate*</th>
</tr>
</thead>
<tbody>
<tr>
<td>All accidents</td>
<td>19%</td>
</tr>
<tr>
<td>Junction accidents</td>
<td>26%</td>
</tr>
<tr>
<td>Mid block accidents</td>
<td>17%</td>
</tr>
<tr>
<td>Pedestrian accidents</td>
<td>27%</td>
</tr>
<tr>
<td>Pedestrian accidents at junctions</td>
<td>39%</td>
</tr>
<tr>
<td>Pedestrian accidents at mid blocks</td>
<td>25%</td>
</tr>
<tr>
<td>All vehicle accidents</td>
<td>16%</td>
</tr>
</tbody>
</table>

*Reductions in **bold** statistically significant at 95% level and all other accident groups significant at 90% level. Analysis undertaken using paired linear regression.*
Analysis – Interim Results

<table>
<thead>
<tr>
<th>SEVERITY</th>
<th>Farside</th>
<th>Nearside</th>
<th>Reduction*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious &amp; fatal accidents</td>
<td>0.19</td>
<td>0.14</td>
<td>26%</td>
</tr>
<tr>
<td>Slight accidents</td>
<td>1.53</td>
<td>1.40</td>
<td>9%</td>
</tr>
</tbody>
</table>

All rates are accidents/site/year
Further Analysis

• Analysis is on-going
• Investigation of plain language accident descriptions
  — potential elimination of accidents definitely not associated with the crossing (e.g. potentially those on a nearby side road)
  — investigating any changes in accident causation trends
• Final report will be published early next year
Conclusions - 1

• Previous research has shown that Puffins can
  — Significantly reduce delay for all road users
  — Improve pedestrian convenience
  — Reduce accidents at mid block crossings

• Interim analysis of this study shows Puffins reduce accident rates at junction and mid block signals
  — All sites 19% reduction*
  — Mid blocks 17% reduction*
  — Junction signals 26% reduction

*Statistically significant at 95% level
Conclusions 2

• Severity of accidents also reduced
  — Fatal and serious accident 26% reduction
  — Slight accident 9% reduction
• Full report will be published in few months
• Puffin facilities offer overall benefits for pedestrians and people in vehicles
Any Questions?