

## Appendix B – Bus stop access audits

Access audits were conducted for 70 bus stops in Victoria. Approximately half were conducted in person during June and July 2021. The rest were conducted as desktop audits using Google StreetView (street level, panoramic photos taken by Google and available in Google Maps [www.google.com.au/maps/](http://www.google.com.au/maps/)).

The following factors were considered in choosing stops to include to provide broadly representative results:

- Geographic spread:
  - Inner, middle, outer
  - West, north, east, south
  - Regional centres
- Focus on standard roadside stops rather than interchanges.
- Stop type e.g. kerbside, indented
- Ground type e.g. concrete, grass/soil
- Stop identifier e.g. flag, totem
- Formal shelter

*Figure B.1. Comparison of characteristics of bus stops state-wide and as part of the access audits. The stops audited were broadly reflective of all stops.*

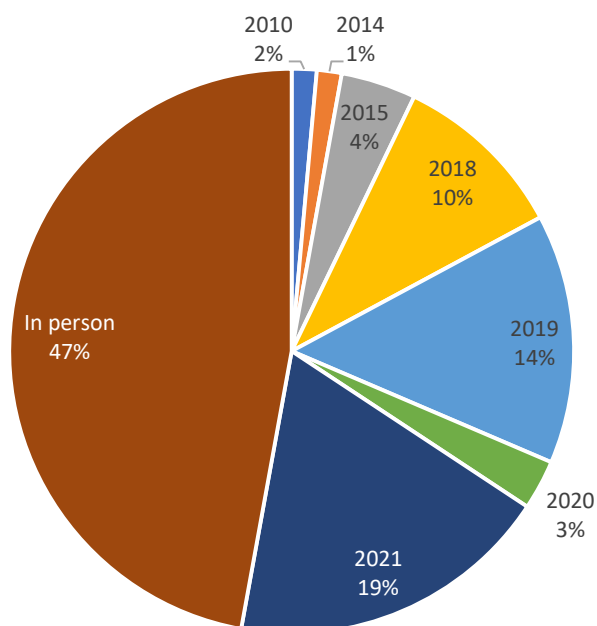
Characteristic	Victoria wide (from DoT database)	Bus stop access audits (this project)
Stop type – kerbside	86%	81%
Ground type – concrete	84%	86%
Stop identifier – flag	87%	86%
Shelter	25%	31%

Based on the finding of the literature review and discussions with stakeholders, the following were assessed for each stop as part of the access audits:

- At the stop (identification, ground type, shelter, visibility, lighting, type)
- Road type (number and type of lanes, speed limit, median)
- Crossing the road (formal crossings, location, crossing opportunities, significant vehicle paths)
- Kerbs (are there ramps, do they appear DDA compliant?)
- Footpaths (exist, condition, obstacles, width)
- Surrounds (passive surveillance, trees)

## Audits

Figure B.2. Audit type and year of StreetView photos for desktop audits (70 stops). Just under half of the access audits were conducted in person and the majority of desktop audits were based on photos from the last couple of years.



## At the stop

Figure B.3. How many bus routes use this stop? (70 stops) Half of stops were serviced by a single bus route.

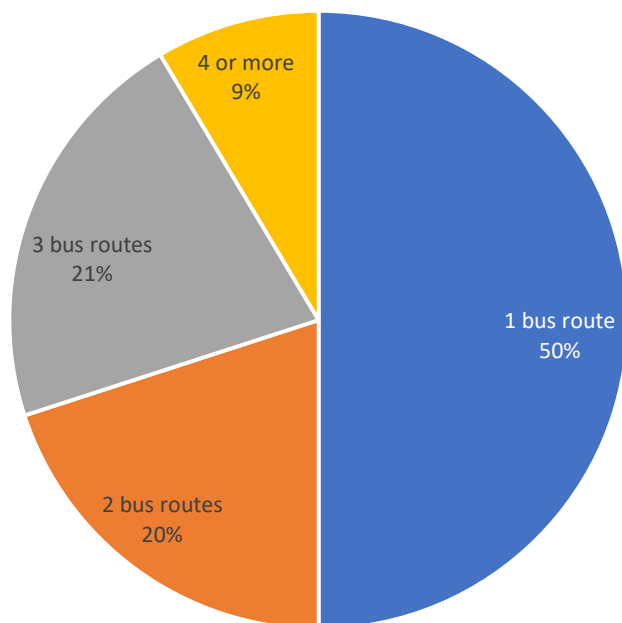


Figure B.4. How is the stop identified? (70 stops) All stops except one were identified by either a flag or totem.

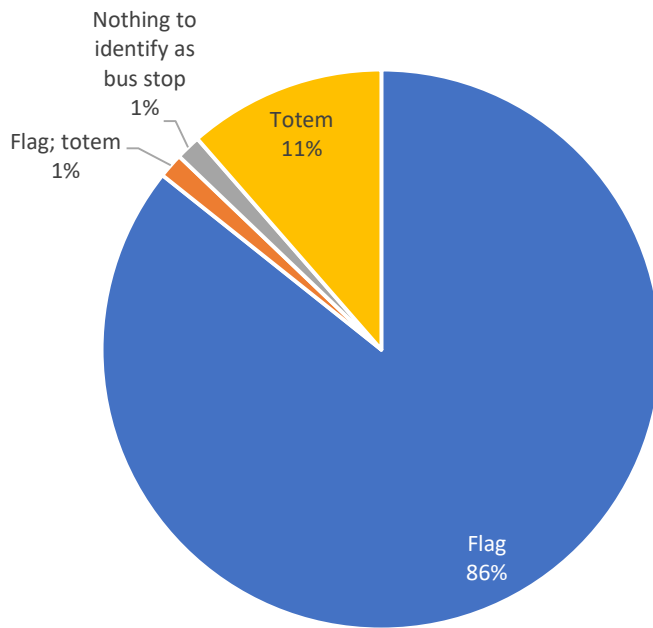


Figure B.5. What type of stop is it? (70 stops) Most stops were kerbside; part of the road.

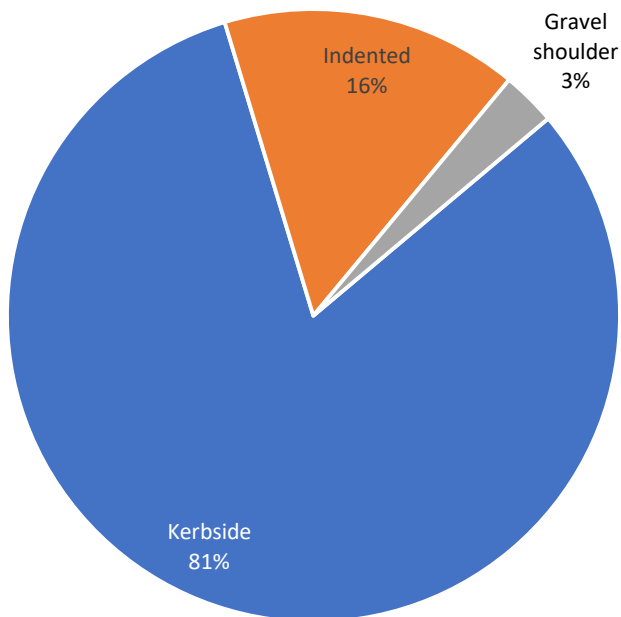


Figure B.6. What is the ground type? (70 stops) Most stops had a concrete base.

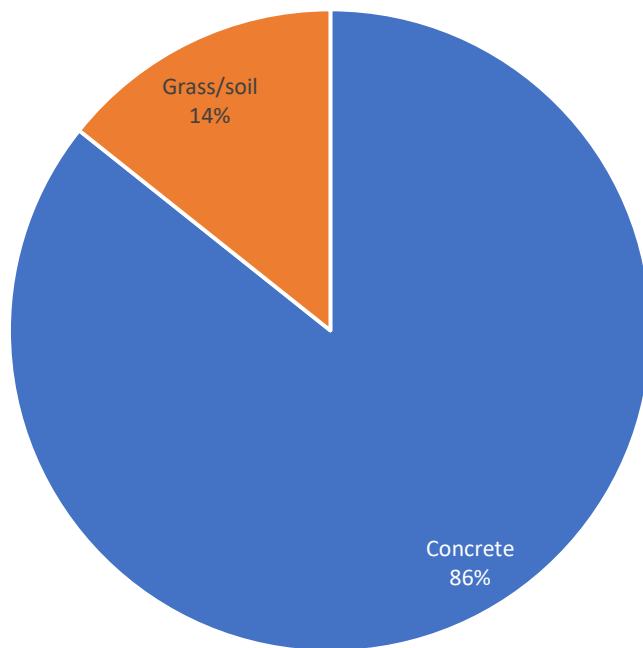


Figure B.7. Is a formal shelter provided? (70 stops) Only one third of stops had a formal shelter.

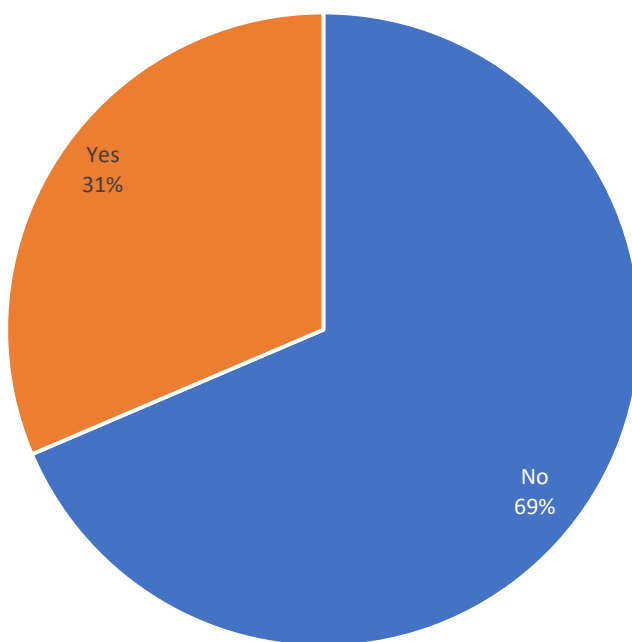


Figure B.8. Is formal seating provided? (70 stops) Formal seating is usually provided with formal shelters.

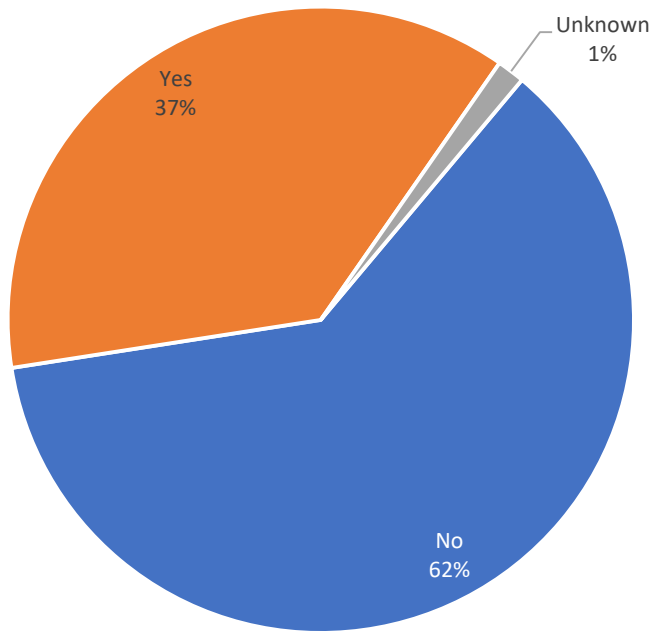


Figure B.9. How visible is an approaching bus while waiting? (70 stops) Most stops had good visibility to an approaching bus.

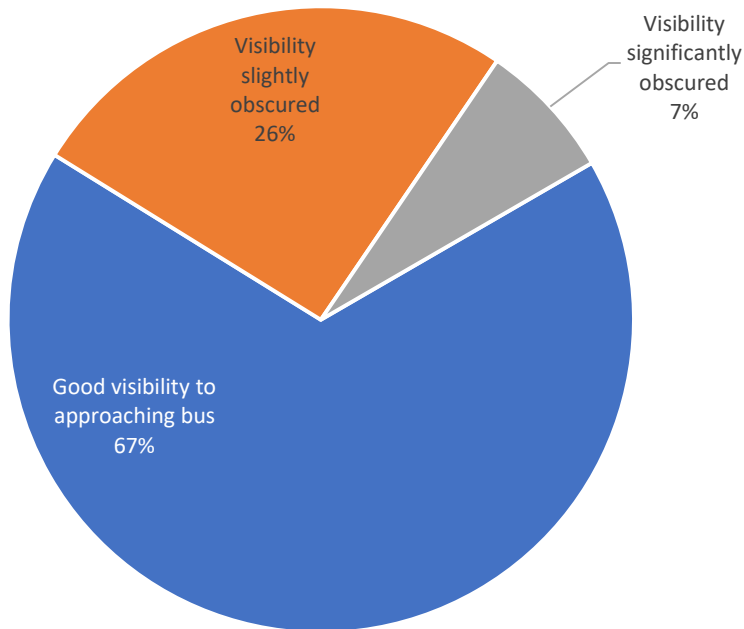


Figure B.10. What other obstructions limit visibility around the stop? (70 stops, multiple responses permitted). High property walls and vegetation, along with the shelter itself, can limit visibility.

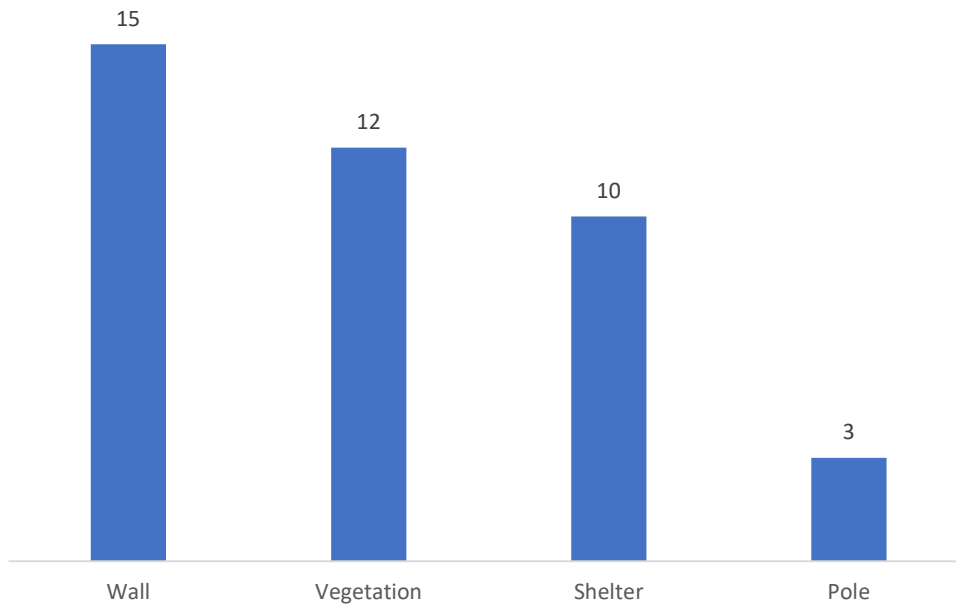


Figure B.11. Is there a streetlight at the stop? (70 stops) Three in four stops have a streetlight, but as the audits were conducted during the day it is not known if they were working or how well they light the stop.

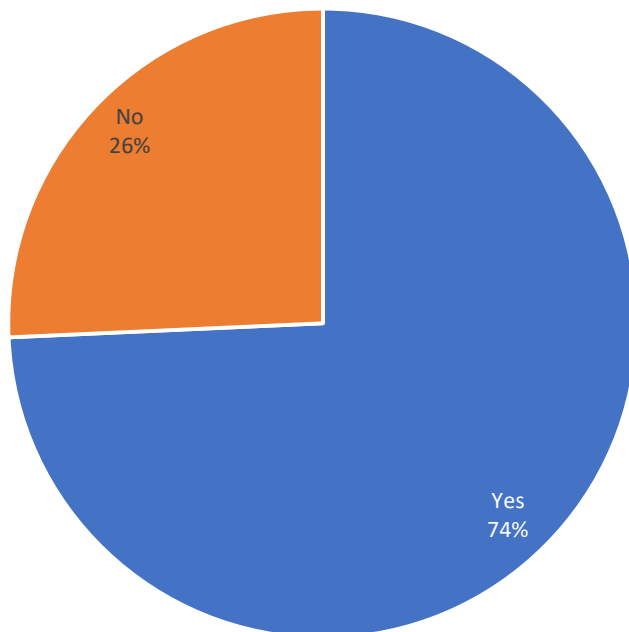
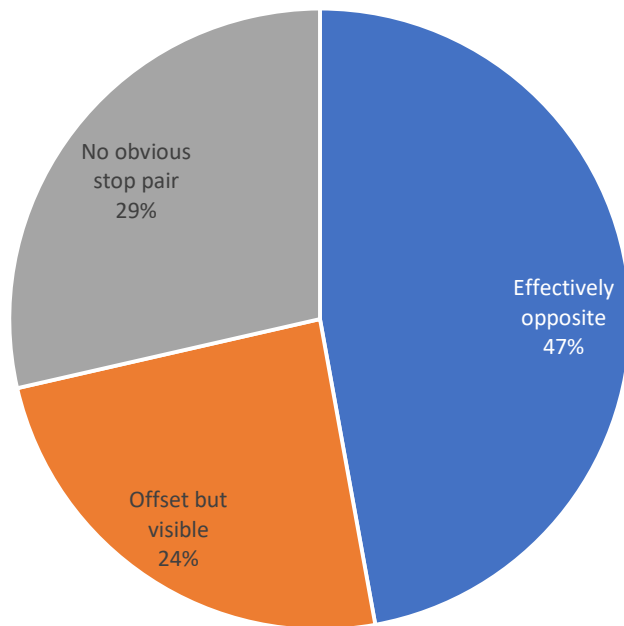


Figure B.12. Where is the bus stop pair? (70 stops) The bus stop for buses in the opposite direction was visible from about two-thirds of stops.



### Access – road type

Figure B.13. How many marked or operating lanes are there? (70 stops) Half of stops were located on roads with three or more lanes of traffic.

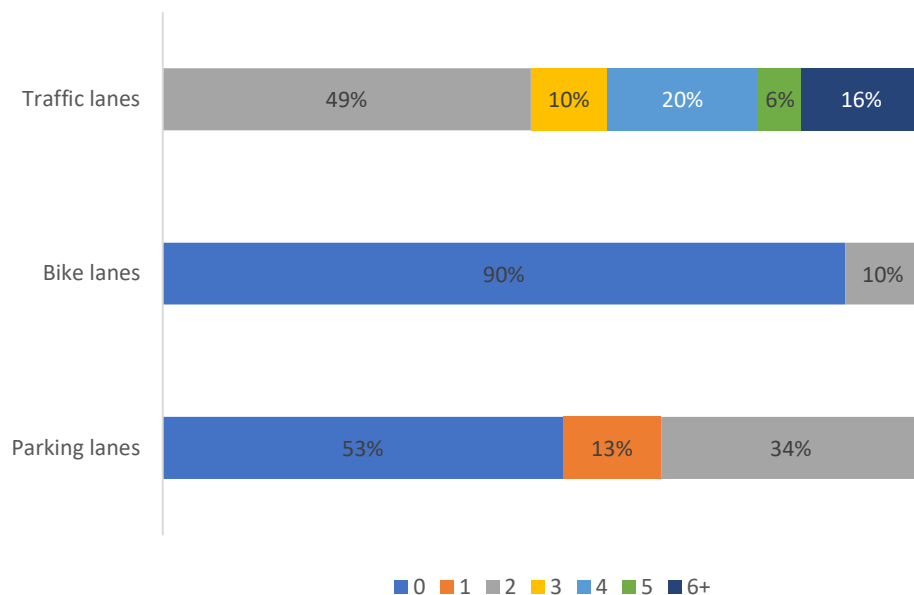


Figure B.14. What was the speed limit at the time of auditing? (70 stops) 89% of stops were on roads with a speed limit higher than the 30-40 km/h recommended for pedestrian safety and activity.

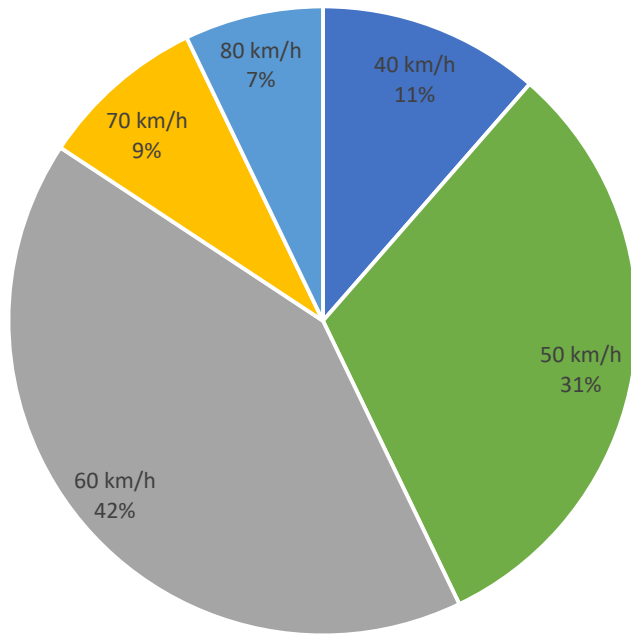
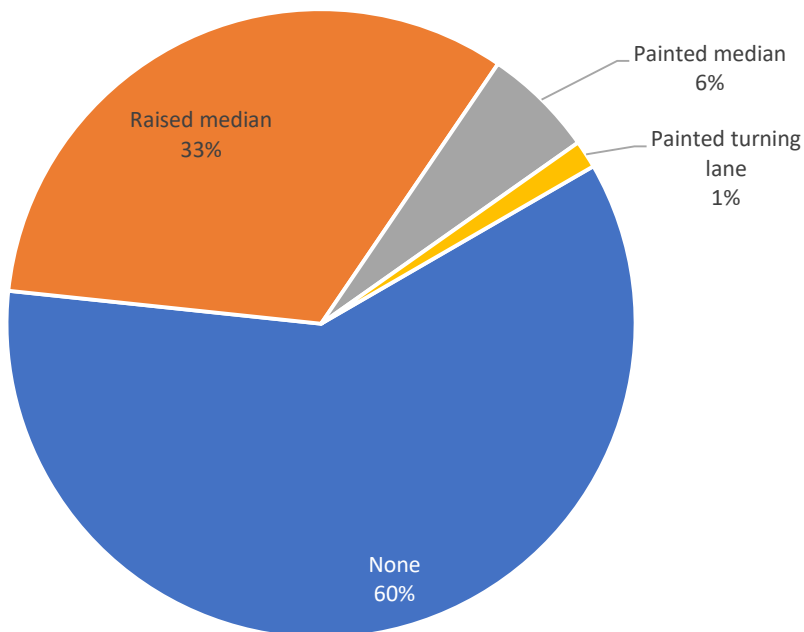


Figure B.15. What type of central median is there? (70 stops) There was no median of any description at 60% of sites.





## Access – crossing the road

Figure B.16. What is the closest formal pedestrian crossing? (70 stops) There was no formal crossing visible from two-thirds of stops.

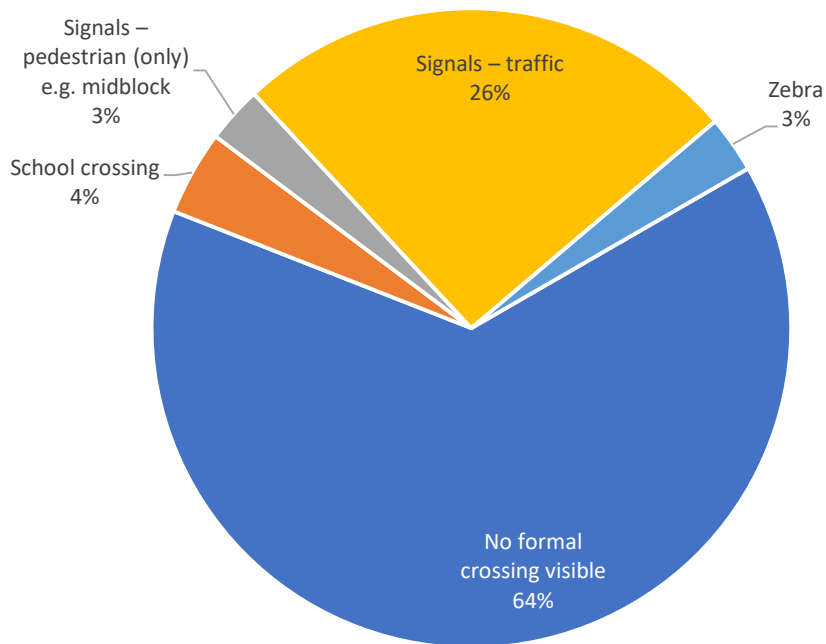


Figure B.17. Approx. how far is the crossing from the bus stop? (25 stops with formal crossing visible) About half of formal crossings visible from the stop were more than 50 m away.

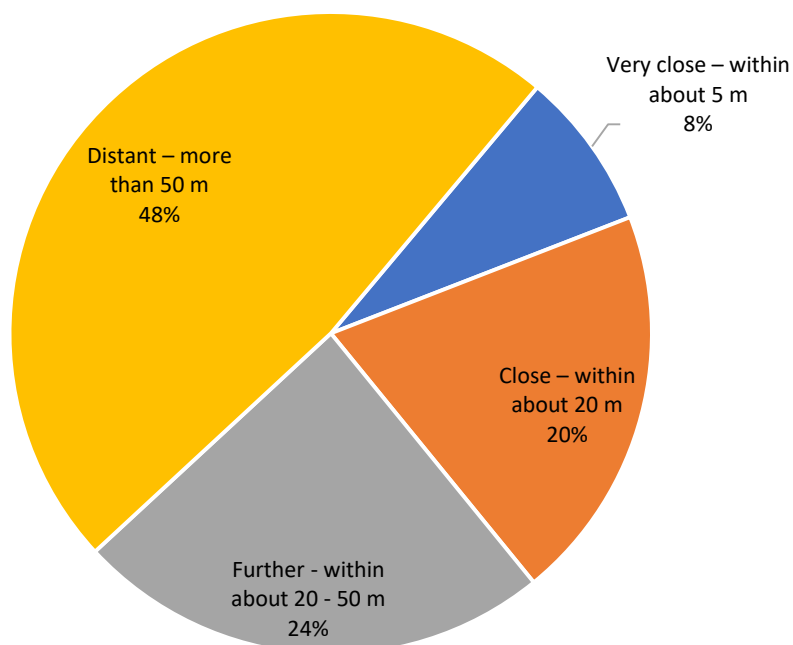


Figure B.18. Where is it in relation to the stop? (25 stops with formal crossing visible) Most formal crossings were located behind the bus stop, which is generally good for bus operations but bad for walking as it requires backtracking.

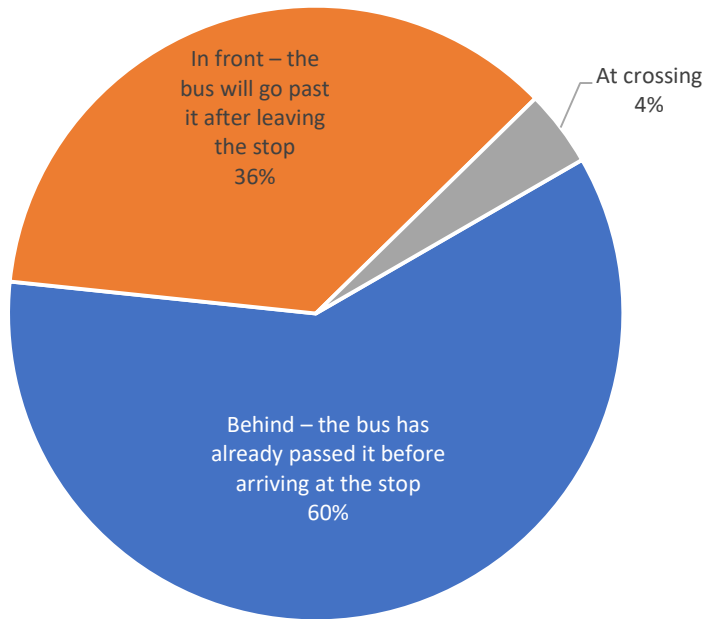


Figure B.19. How many side roads are between the bus stop and crossing? (25 stops with formal crossing visible) People would not have to cross a side road to get from the crossing to the bus stop at three in four locations.

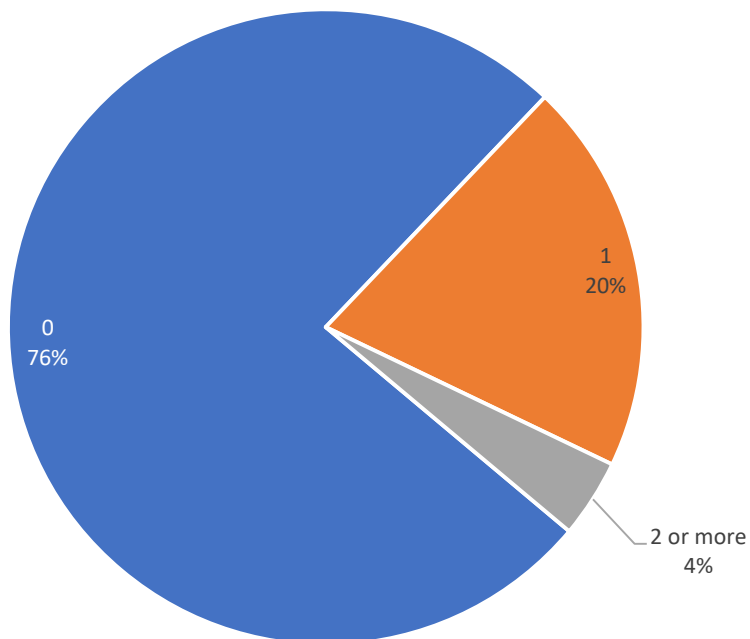


Figure B.20. How many breaks in the traffic are there if someone wants to cross the road? (17 stops with no formal crossing visible and audited in person) Nearly one in five roads with no formal crossing did not have breaks in the traffic which would allow people to cross without running or being significantly delayed.

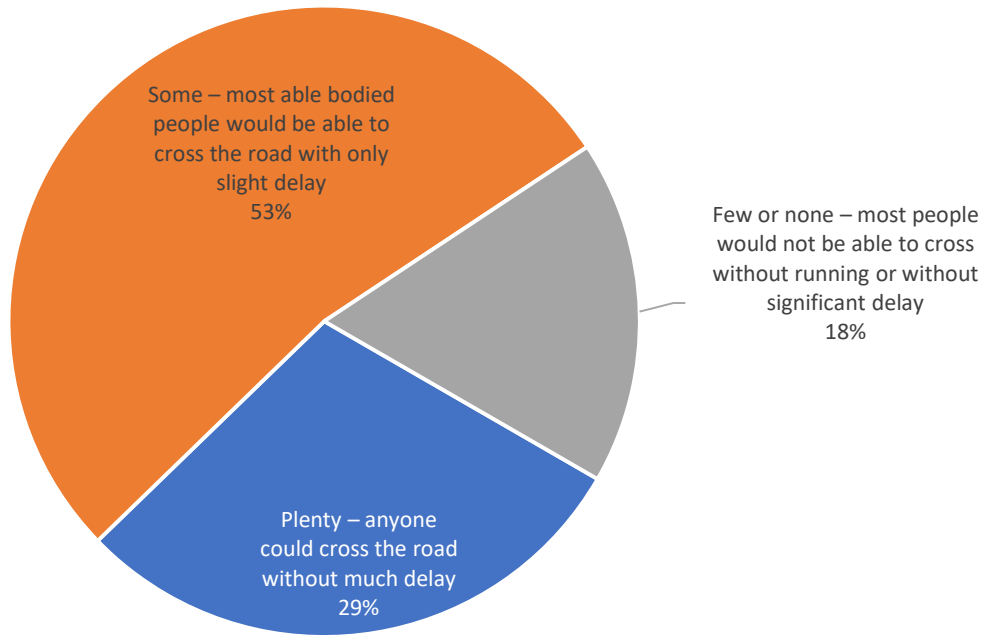


Figure B.21. What other crossing assistance is provided specifically for people walking? (70 stops, multiple responses permitted) Most stops did not have any other form of crossing assistance.

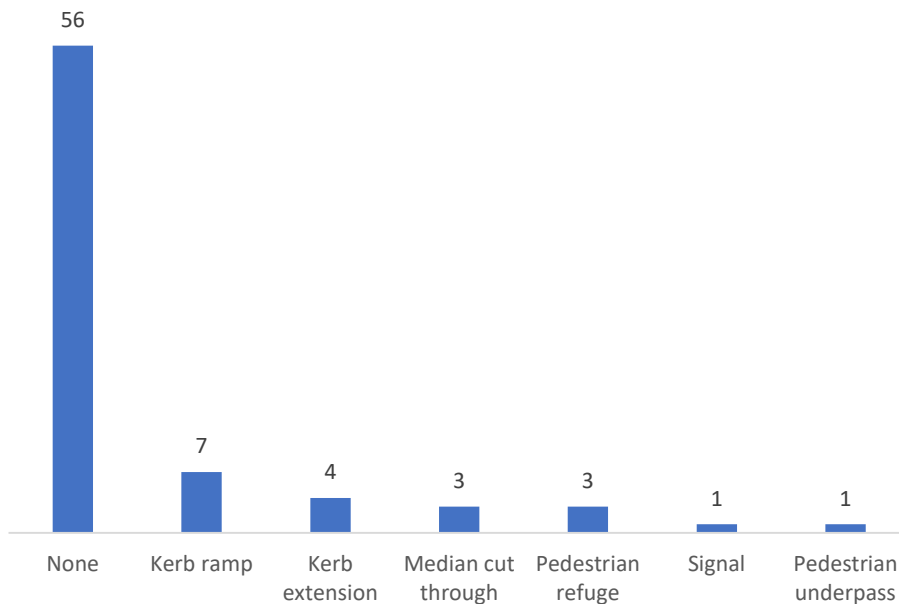
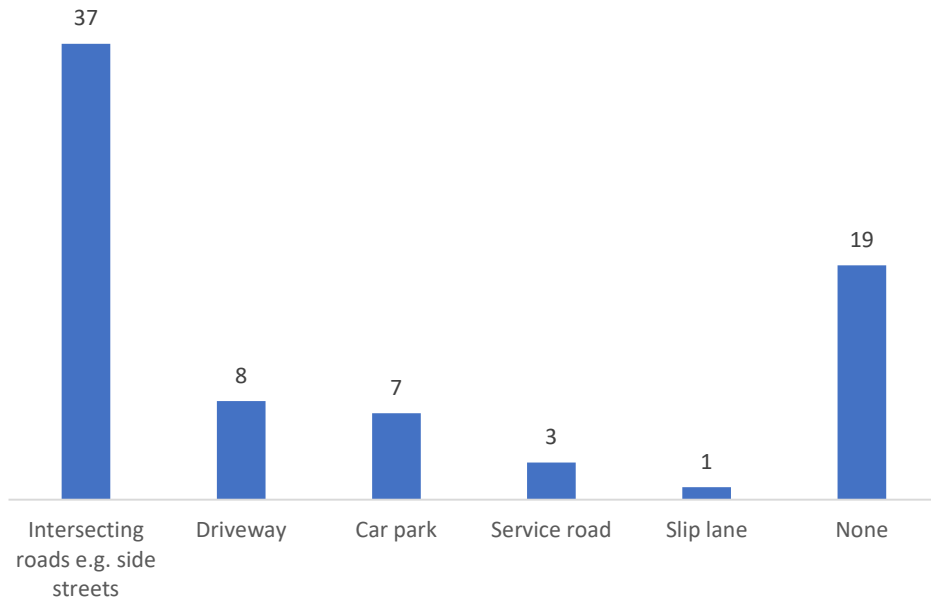


Figure B.22. What other significant vehicle paths are within approx. 50 m? (70 stops, multiple responses permitted) Half of stops had an intersecting road nearby.



### Access – kerbs

Figure B.23. Is there a kerb? (70 stops) There was a kerb at nearly all of the audited stops.

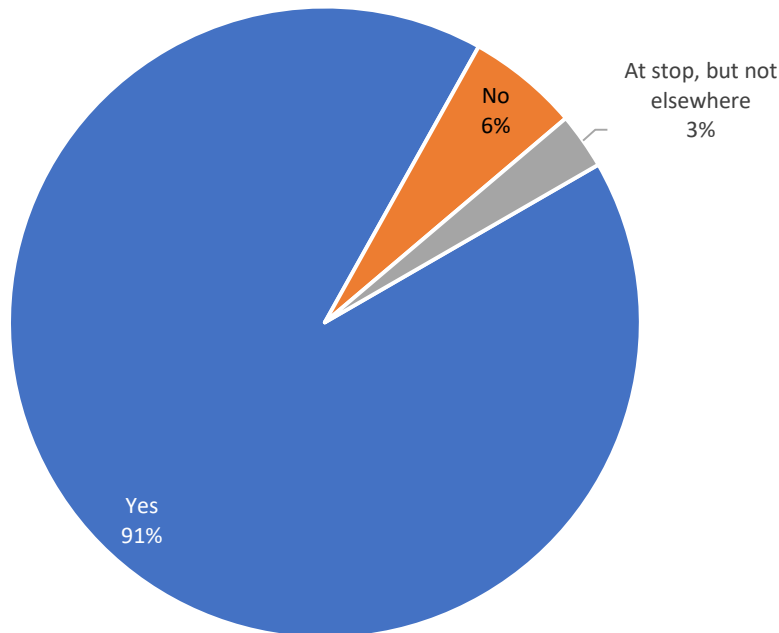


Figure B.24. When crossing from the opposite side of the road, how would a person using a wheeled device (e.g. wheelchair) access the bus stop? This may be at a nearby crossing rather than at the bus stop itself. (70 stops) One-third of stops did not have any access for people using wheeled devices.

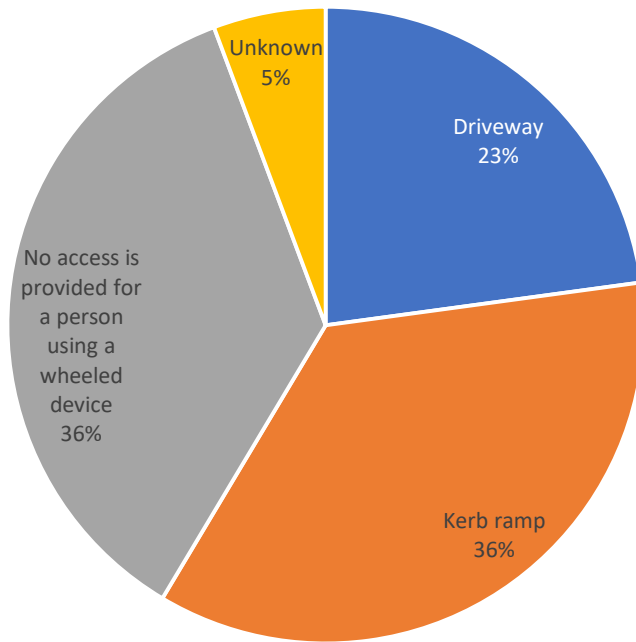


Figure B.25. Do kerb ramps near the bus stop generally appear to be DDA compliant? (20 stops) Most kerb ramps at stops appear to have a smooth transition, have splayed sides and perpendicular to the road.

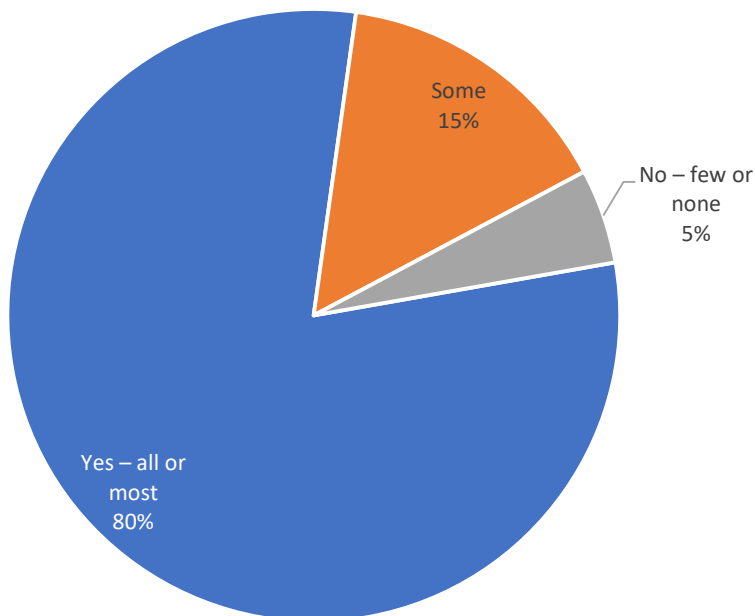


Figure B.26. Are kerb ramps provided to cross nearby side streets? (42 stops, others either didn't have kerbs at all or side streets nearby) Kerb ramps are provided at most side streets near bus stops.

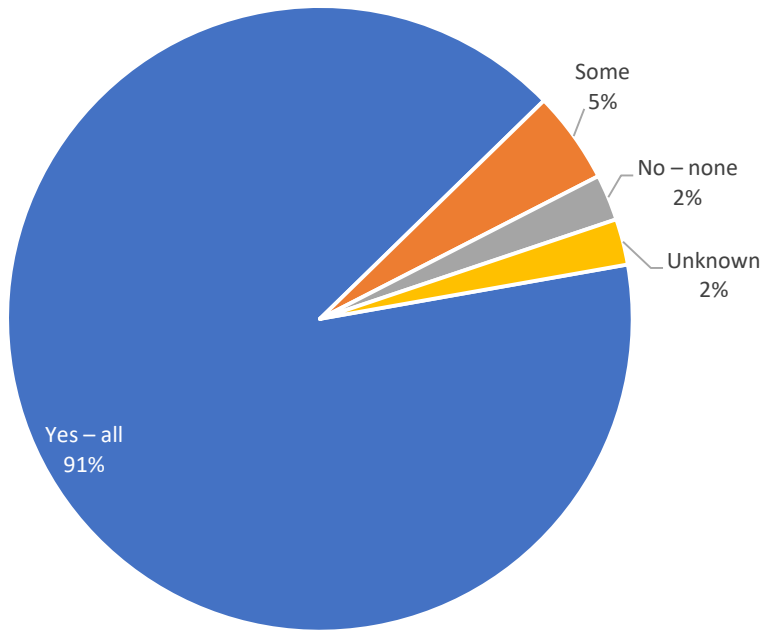
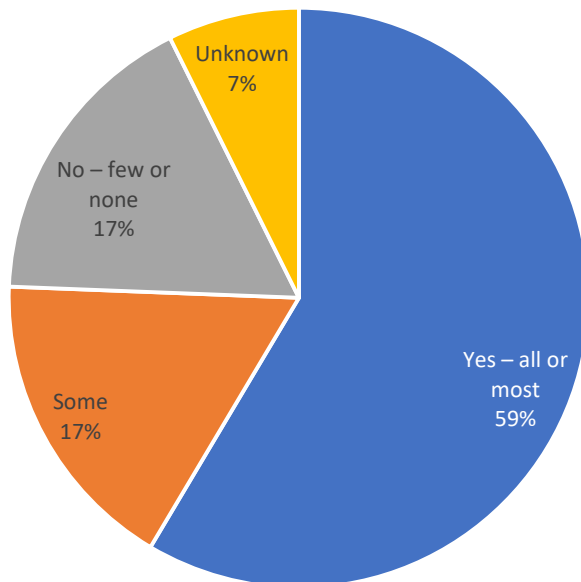


Figure B.27. Do kerb ramps at nearby side streets generally appear to be DDA compliant? (41 stops) More than half of kerb ramps at side streets appear to have a smooth transition, have splayed sides and be perpendicular to the road, however nearly one in five could be obviously improved.



## Access - footpaths

Figure B.28. Is there a footpath connecting to the bus stop? (70 stops) Most stops have a connecting footpath, although one in ten don't have any sort of path connection.

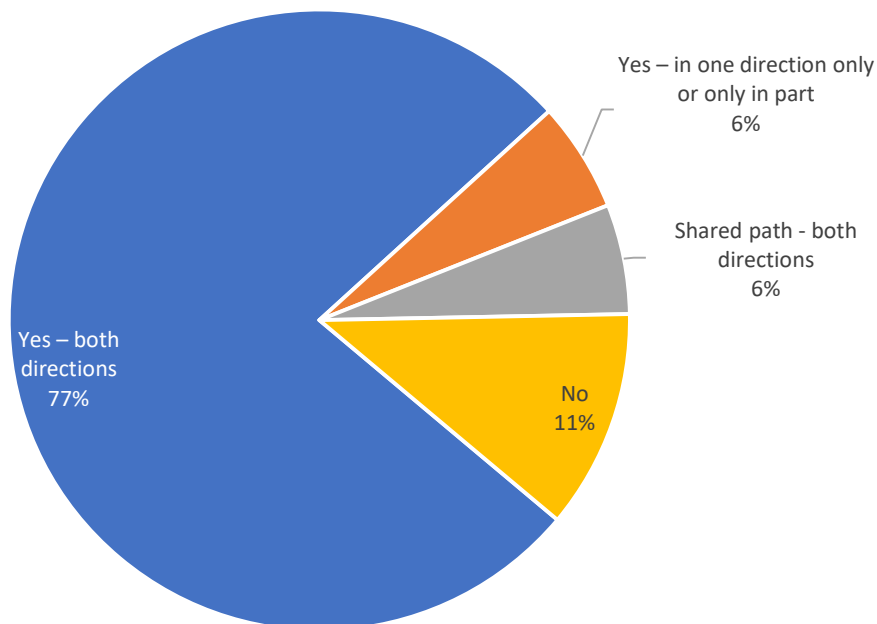


Figure B.29. What is the general condition of the footpath? (62 stops) The condition of the paths was generally good, with smooth, even surfaces; noting that the condition couldn't be determined in some desktop audits.

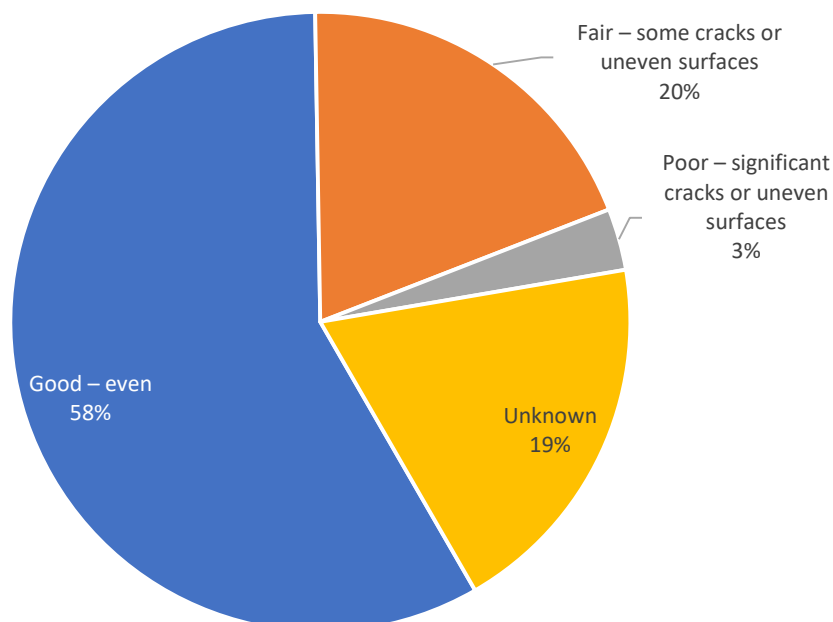


Figure B.30. What obstacles are on or along the path? (62 stops, multiple responses permitted) Paths were generally free of obstacles.

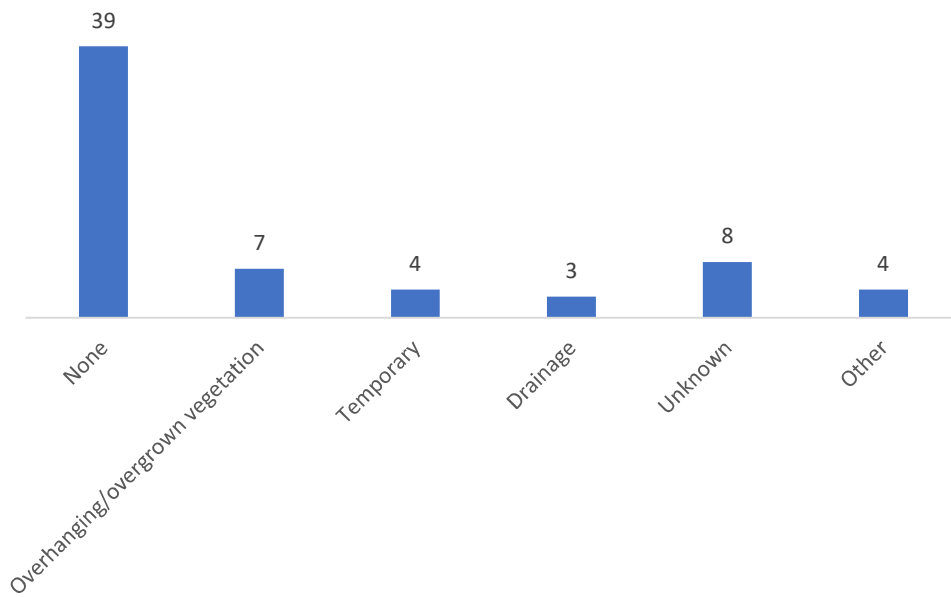


Figure B.31. How well does the footpath generally accommodate people using it? (62 stops) The majority of paths appeared sufficiently wide for the people present, although there were often not large numbers of people present (see Figure B.33).

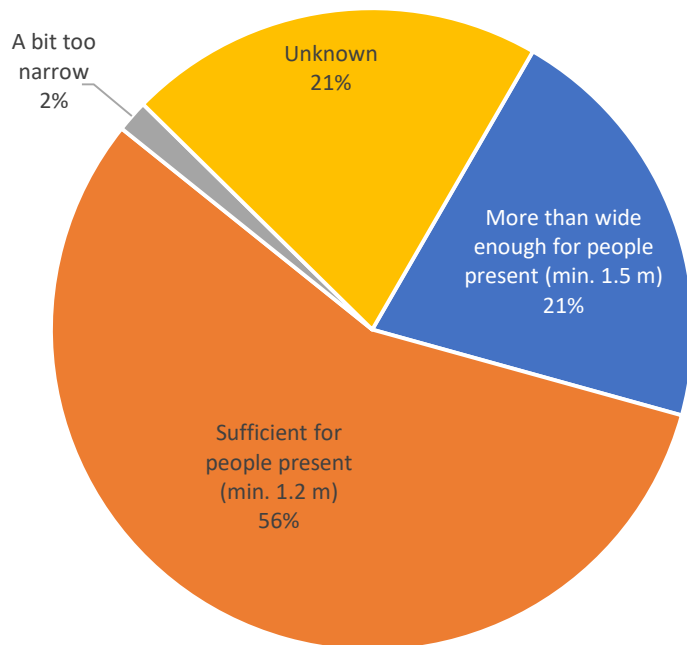
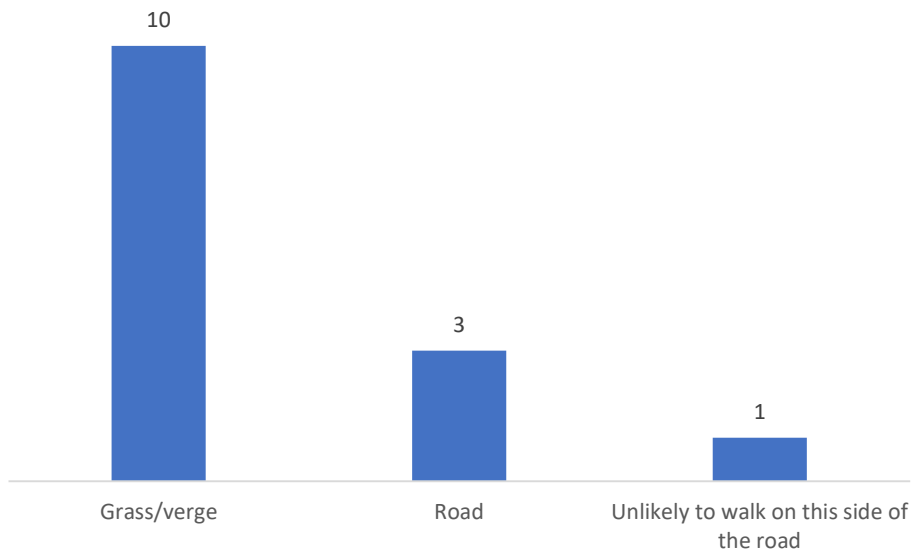




Figure B.32. In sections where there is no footpath, where would people walk? (8 stops, multiple responses permitted) At most stops where there was no footpath there was a verge or grassed area people could walk, assuming they are able to walk on this surface.



## Surrounds

Figure B.33. How many other people were nearby while auditing the bus stop? (70 stops) This includes only people out in public space or adjacent areas (e.g. garden, outdoor dining), not people in vehicles or buildings. There was at least one other person around at most stops, including people waiting for the bus. However, at one in four stops there was no one else present. Note that all of the audits were conducted during the day and that fewer people would be expected at night.

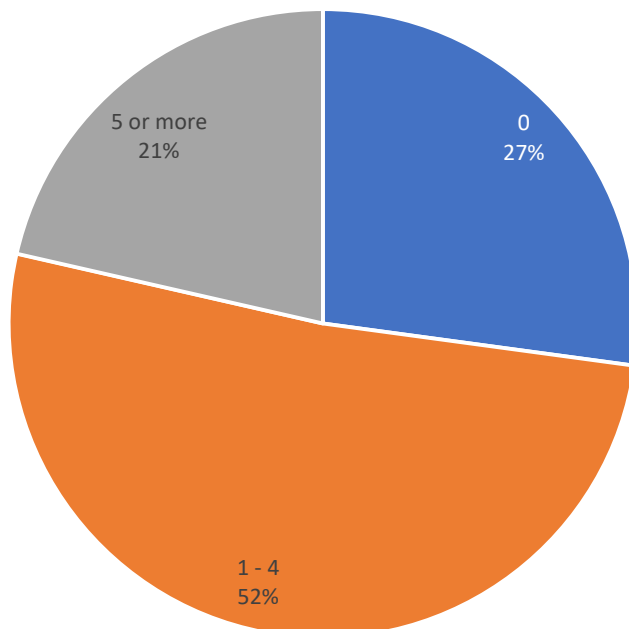


Figure B.34. What other passive surveillance is there? (70 stops, multiple responses permitted) Drivers and residential buildings or shops commonly provide passive surveillance. Drivers at high speeds might be travelling too fast to observe or stop and assist. Less than half of stops had reasonable passive surveillance from neighbouring buildings.

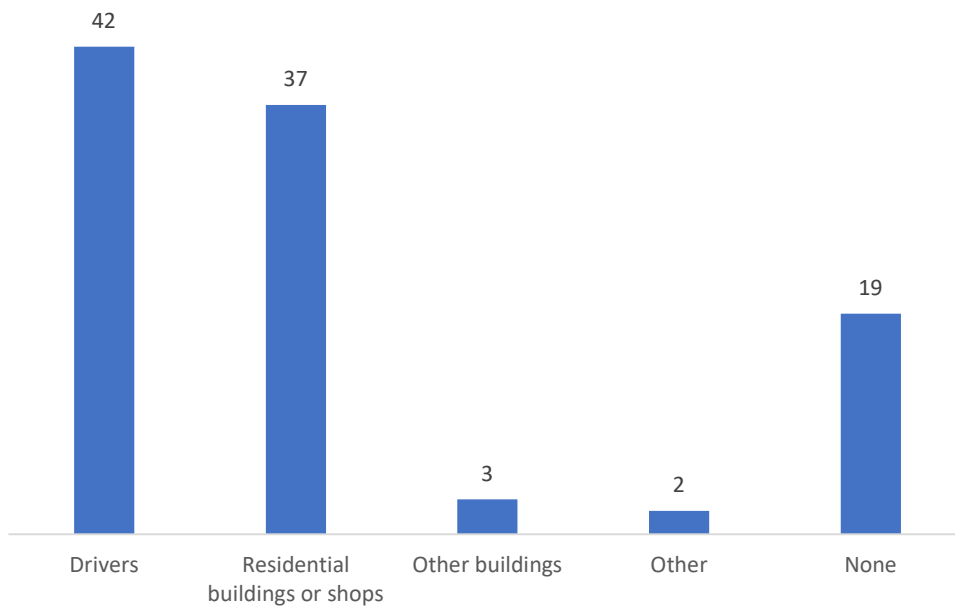


Figure B.35. How many trees provide shade for people walking to the bus stop? (70 stops, multiple responses permitted) Includes only trees large enough to stand under, on public land (those in private properties are often outside the control of authorities) and within 50 metres of the bus stop. Two thirds of stops had shade trees nearby. Encouragingly, many of the stops recorded with few or no shade trees did have other trees nearby but they were in the median, on the opposite side of the road, within private property or were new saplings which hadn't yet grown to maturity.

